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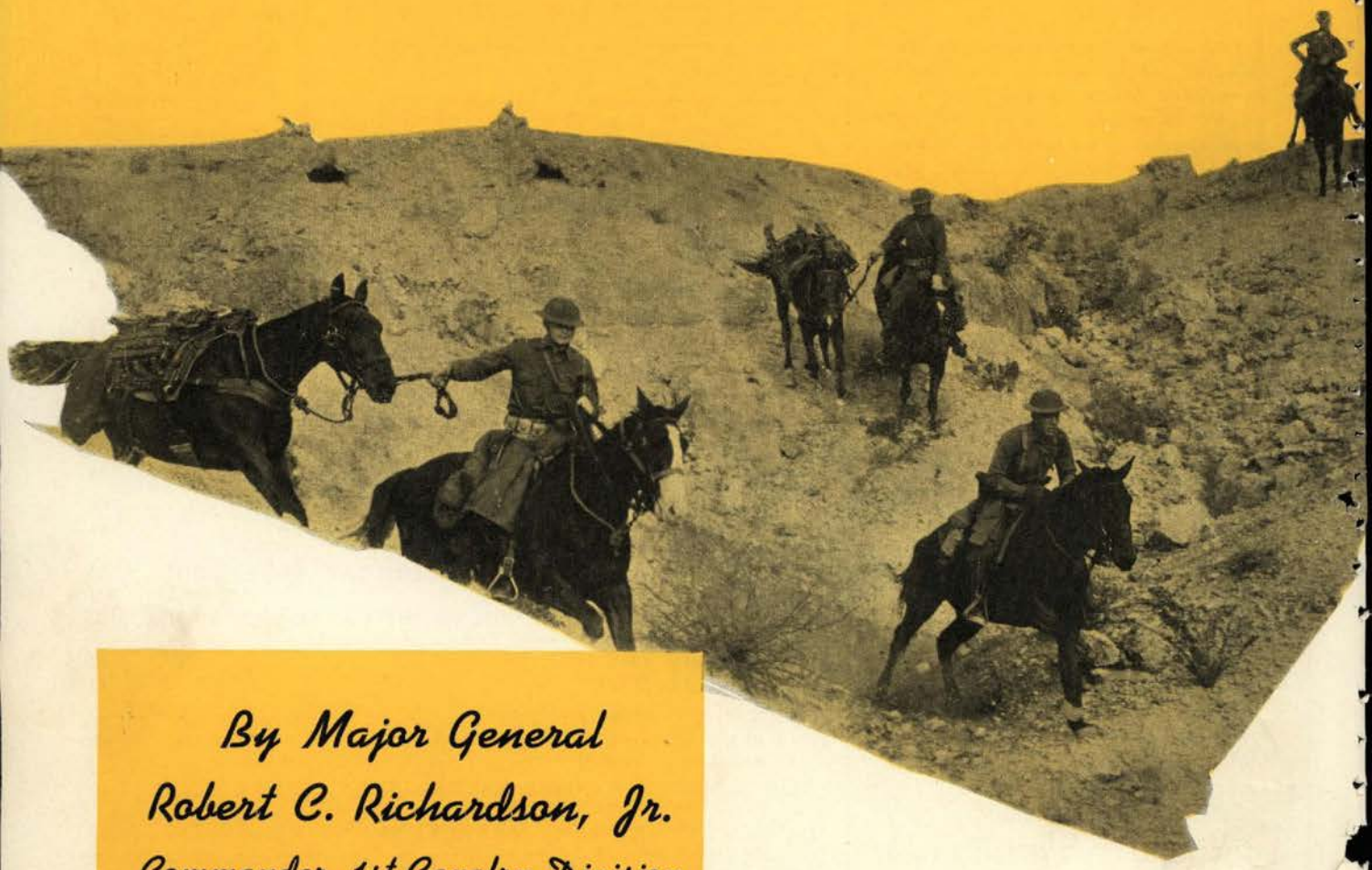
THE WIDER RÔ



By Major General
Robert C. Richardson, Jr.
Commander, 1st Cavalry Division

SOME years ago there appeared in the Paris newspapers an account of a famous divorce trial in England. The London papers reported the most intimate details of the affair with the utmost candor and wholly without restraint. The French papers limited their notices to brief summaries of the trial—but commented on the great difference in English and French mentality in matters of this kind. The French editors stated that it would be impossible to publish such reading matter in a French newspaper for fear of the resentment and moral indignation of the public—and yet despite this commendable moral attitude the French remained the victims of a fixed world judgment. There was an ironical lament that no matter what the English did, they would always be judged by the world as "righteous," whereas no matter what the French did they would always be regarded as frivolous.

Layman's Viewpoint

A similar kind of fixed idea has until very recently dominated the layman's point of view in his evaluation of the Cavalry as a useful arm in modern warfare. The possibilities of mechanization as visualized prior to the War and its subsequent and successful achievements in Spain, Poland, the Low Countries and France all seemed to support a belief that Cavalry was outmoded. Very properly this issue has been widely debated and discussed both in the papers and magazines as well as in Congress. Our people and our legislators have a right to enquire into the value of any part of the armed forces, and there cannot be too much light thrown on the subject. Most of the discussion however seems to have been led by the enthusiasts of mechanization who not content with the successes of their units in battle were bent on depreciating the value of horse cavalry as if the success and admittedly enormous value of mechanization automatically relegated horse cavalry to the discard. This point of view probably was influenced by the fact that in past wars Cavalry has always been out in front and therefore since the mechanized forces of the Germans led the way so brilliantly in this new World War they had naturally supplanted horse cavalry.

LE OF CAVALRY

Professional Viewpoint

In this article an attempt will be made to present the point of view of those who have been associated with the horse cavalry and know its powers as well as its limitations. It is in no sense an attempt to extol horse cavalry above other arms or to challenge mechanization which has just proven itself so magnificently in battle. It is rather a discussion of horse cavalry in which close aviation support will be the refrain and in which the relative rôles of cavalry and mechanization will be examined. In this evaluation it is important to keep clearly in mind that the discussion is gaged entirely on the use of Cavalry in our own country with its vast spaces and highly diversified terrain. Since our Army never knows where it is going to fight we must consider all sorts of conditions of terrain and climate. Hence the organization and training, armament and equipment of the Cavalry have been developed so that it will not be at a disadvantage under any circumstances. It is devised to make each unit as flexible, maneuverable and capable of independent action as possible. Our Cavalry service is thoroughly imbued with the spirit of independent action, and the mentality of both officers and men has been formed to be self-reliant, resourceful, and aggressive. It has been necessary to build this type of combat unit to be able to cope successfully with conditions in rather undeveloped countries whereas European cavalry operates in highly organized countries. Our problem differs from that of a European Army. The Germans for example knew every inch of terrain over which they were to operate, the rivers and streams to be bridged, and the character and quality of the roads, the climate, character and temperament of their adversaries. Every factor of War was in their favor. They were also operating over a relatively small area in their invasion of France.

Cavalry and Aviation

The value of any arm of the service however, cannot be discussed except against the background of aviation. Once upon a time it will be recalled, aviation challenged the value of cavalry. When the aeroplane was in its early stages of development, its military value was judged to be solely a new means of observation. The natural enthusiasm aroused by this new weapon of war ascribed to the aeroplane powers which it did not possess. Immediately it was claimed that the aeroplane had rendered the cavalry obsolete because it could go farther, and faster into enemy terrain, it could see more, its vantage point was unexcelled, it could accomplish in an hour what cavalry could not do in a day, it could encompass in a single photograph more enemy terrain than cavalry could cover in several days and hence aviation alone was the new means of reconnaissance that made cavalry useless.

Many of the above missions were actually well done by the planes but it was soon found that observation aviation could only see in a wholesale manner and not in detail, that its observation was intermittent, sporadic, and not continuous, that its reconnaissance reports were of a more negative character than positive since it was obviously impossible to see what was concealed in close terrain, and lastly its usefulness was strictly limited to favorable weather conditions. During the World War when serving with the 10th French Corps in the Valley of the Meuse, I observed that there were literally weeks at a time when the fog and mist kept the observation aviation grounded, and even today observation aviation must still bow to the tyranny of weather conditions whereas horse cavalry is totally independent of them.

Aviators were among the first to recognize that far from supplanting cavalry as a reconnaissance agency the two arms were complementary, that each has its own

sphere of action, and that aviation had given the Army Commander an additional useful means of reconnaissance which enlarged the picture furnished by the Cavalry. Certainly if any further proof were needed, the reconnaissance performed by the 6th Cavalry in the Louisiana Maneuvers in May is sufficient. Weak in observation aviation the IV Army Corps depended almost solely for its information on the 6th Cavalry which secured it for the commander.

In all of this early discussion there was almost a complete forgetfulness that cavalry and aviation both have other missions than reconnaissance and that the Cavalry is organized to fight and to hold ground and the Air Corps to fight in the air and to supplant artillery as a means of long range bombardment. But gradually that phase of discussion of the relative values of the respective arms passed. Today aviation and cavalry are fully conscious of each other's rôle, and no branch realizes more keenly than the horse cavalry that in modern warfare its success will depend to a large degree not only on friendly mastery of the air but in addition on the close support of its own aviation, a theme to which I shall return later in this article.

Mechanization

Turning now to the mechanized forces, their development has been slower and much more painful than that of aviation. Their usefulness as a battle force was viewed with greater skepticism, chiefly because there was a lack of vision as to their employment in combat. None of the armies of the world except the Germans appeared to be able to clarify their ideas on the potential value of the armored vehicles and this blurred vision hampered their development.

After the World War the English led the movement going so far as to mechanize the larger part of their cavalry. The efforts of the English were very closely studied and analyzed by the French and by ourselves. The critical analysis of mechanization however, was confined chiefly to its mechanical efficiency and to the development of tactics and methods of combat as an isolated arm. The analysis was rather limited as it apparently visualized only its employment as a part of the ground forces operating independently of the air forces, each arm carrying out its respective mission, without the coördination of efforts of both that the Germans so skillfully devised.

The French lagged far behind the British in the development of their mechanization because they were not convinced at first of its efficiency and were unwilling to invest the large sums which its development entailed. Our Army lagged even more than the French in developing mechanization, because of inability to visualize what it could be and because of a very understandable unwillingness to be forced to develop it by sacrificing horse cavalry regiments whose value was known. Had we had a bold conception of its value and use, and been united in our convictions, it is almost certain that mechanization could have been developed in our army long before it was. But under our system in times of peace when the country is not threatened, bold conceptions are viewed with a jaundiced eye. But that is all water under the bridge and under the leadership of our Chief of Staff, General Marshall, we are now on the way toward creating an armored force of the greatest power.

Cavalry Role Extended

The Germans unhampered by political or economic conditions gave free rein to their military conceptions and let themselves go. They not only developed splendid mechanical vehicles but what is more important they put their best brains to work in order to find a method of exploiting mechanization to its fullest. In all armies, it was conceded that the missions of the mechanized forces were those of the Cavalry, and that is the reason that Cavalry was chosen as the sponsor of the mechanization. Its development has therefore been an enlargement of cavalry's rôle, and opened up a wider field for the employment of Cavalry in its broadest senses. The motor however, has given to mechanization a great advantage under certain conditions in accomplishing their missions. Their speed provides a radius of action in equal time limits denied to horse cavalry, and they are admirably suited therefore for long distance reconnaissance, for wide encircling movements to surprise the enemy whether on his flanks or rear, for surprise raids on his communications, his convoys and his reserves. They form the spear head of a rapid advance. On terrain which is favorable to their employment and when time, speed and surprise are the essential factors it is mechanization that should be employed. Mechanization affords the Commander an extraordinary means of surprise warfare to accomplish his mission. Under air protection he launches his mechanized forces against an alert enemy. Their speed soon removes them from immediate proximity of the Army and at once the front loses that close protection without which an army is in constant danger. While the mechanized forces are pushing forward on reconnaissance far in front and perhaps simultaneously making a wide encircling thrust against the enemy lines of communications, there is a large zone between the mechanized road columns that must be thoroughly covered if the motorized infantry and artillery, both highly vulnerable, are to advance with surety and confidence. There is only one arm of the service that has the speed to keep ahead of the army, that has the maneuverability, that can negotiate any sort of terrain, open, close, wooded—and that without fail can send back to the Army Commander reassuring reports of both positive and negative character, and that is the *horse cavalry*. Under very favorable terrain conditions the mechanized forces can accomplish this same mission but there is the gamble of terrain and in war the stake is too high to gamble especially when the security of the Army is

involved. It is patent therefore that far from supplanting horse cavalry mechanization has only broadened the field and uses of Cavalry. For example by employing both types of Cavalry the zone of reconnaissance has been greatly deepened and widened while the security of the Army has been strengthened as the Commander can divert to this mission the additional strength of horse cavalry now released from its long distance reconnaissance missions by mechanization.

Cavalry-Mechanized Training

Horse and mechanized forces complement each other perfectly and form a combination of fire power and of degrees of speed and mobility that constitute one of the most formidable means of war that yet has been devised. The potentialities of this combination especially in attack have not yet been exploited. These two parts of the Cavalry should be stationed near each other and trained together. Imagine the power of a Corps composed of an armored division and the 1st Cavalry Division. Such a team with aviation as their partner and thoroughly integrated in their training will be powerful enough to give knock-out blows to any resistance. Warfare in this country will never be of a stabilized character but will be a series of powerful blows delivered by just such combination of agencies at critical points. We should therefore assume the leadership in this type of team training of aviation, mechanization and cavalry. No other army in the world has done so yet. Here we have a virgin field in which to work with limitless possibilities of achievement, and perhaps the opportunity of making a definite and new contribution to methods of warfare. For the first time in our history the American Army has both mechanized and horse cavalry divisions actually at war strength. The methods of skillfully combining these forces, and of extracting the greatest benefit from their fire power and mobility will soon develop if the two forces could only train together. Each of these elements of the Cavalry have their strength and weaknesses which should be studied. For example mechanization is to a large extent road bound and if they do not operate under friendly air protection they are extremely vulnerable targets of enemy aviation to say nothing of enemy antimechanized weapons. Their successful employment seems to me to presuppose constant movement and the most thorough coördination of all elements. The moment they stop they become very vulnerable targets, and hence when denied movement and air support as will inevitably happen in a battle in which the enemy has anything like equal strength and offers any kind of real resistance their fragility will, it is feared, be quickly revealed. On the contrary the horse cavalry is much less vulnerable due to its extraordinary ability to disperse with greater speed than either mechanization, infantry, motor columns, or motors. The two acting together on the ground with constant aviation support and protection form a combination that is hard to beat. Again there is no very definite guide for their correct battle employment of mechanized forces other than horse cavalry tactics. They are too new, and the tactics which have been developed in our services are purely theoretical. We have seen how the Germans employed their mechanized forces in an advance on a broad front against a weak and demoralized opponent. From that incident many conclusions have been drawn. We have not yet seen how their mechanized forces will be employed in a battle against a strong, equally well armed and determined enemy. We can only surmise. In our own service we are groping for the light, and it will probably be found more quickly if mechanization works with horse cavalry whose tactics have been fairly well developed, and whose organization has been completely changed. There will certainly occur modifications in the conception of both horse and mechanized tactics. In the combined training of these elements, the fullest benefit will not accrue without integrating in this training Bombardment Aviation. The three arms must be trained as a perfect team. But before discussing the air support so essential in modern warfare let's dwell for a moment on the horse cavalry, its organization, fire power, and employment, and show what great strength it has as an axis partner of mechanization.

Our Horse Cavalry

Parallelling the development of our mechanized forces, has been the modernization of our horse cavalry. All cavalrymen no doubt are familiar with the new organization of the nine troop regiment with its great fire power and with the division organization of the two brigades with their new weapons troop, four regiments, Division artillery of headquarters and three battalions, an antitank troop, a reconnaissance squadron of four troops replacing the old armored car troop and of course the service units. At war strength the Division will have 618 officers and 9,500 men. In itself the division is a formidable fighting force, as may be visualized from its 942 machine guns, 67 antitank guns, 14 (81-mm.) mortars, 9,764 pistols, 4,863 M-1 rifles, 24 (75-mm.) field howitzers and 12 (105-mm.) howitzers. This fire power is placed in the Division with a view to flexibility and it is capable of all sorts of groupings so as to bring all types to bear on a desired target. It is mainly carried on horses which are the most mobile transport yet devised for limited distances over any terrain. Therefore this fire power can be shifted from one point to another on the battlefield as quickly as any other means with fewer losses and greater dependability under all conditions of weather and terrain. Given sufficient trailers to transport the animals, it can be shifted anywhere rapidly in the theater of operations. Experiments on terrain near Fort Bliss have actually been made to see whether this statement could be supported and found to be true within battlefield limits of 10 and 12 miles. The Division is now so richly endowed with fire power that it not only is able to take care of itself

offensively but its machine guns, mortars and artillery give it great defensive strength and staying powers. The value of this great strength depends of course on how well it is used not only by the Division Commander—but by higher commanders who assign missions to the Division. Missions must be suitable to the purposes of Cavalry. It is a highly specialized body that has very peculiar powers that can be capitalized but which can be quickly dissipated if assigned improper missions. It is fatal to use it like infantry giving it a zone of action with academic artillery support and fighting it side by side with infantry since its organization was never designed for such use. In past years the Cavalry made a fetish of the mounted charge and were tenacious of its value long after the appearance of the machine gun on the field of battle. In maneuvers waves of horsemen would deploy with admirable precision and charge an enemy in position who was well entrenched with heavy and light machine gun protection. Such tactics were not approved by many cavalry officers as they were regarded as unsound.

Doctrine

The doctrine of the supremacy of the charge no longer prevails and is not taught either at the Cavalry School nor in the Cavalry service. Instead there is insistence on the doctrine of maneuvering mounted so as to get into position and fighting dismounted, relying on fire power and maneuver to defeat the adversary and not on shock action of horse and rider. The mounted charge is regarded as highly exceptional and then only by small bodies of Cavalry. It has been shown in the discussion of mechanization that horse cavalry is especially adapted for missions of reconnaissance and counter-reconnaissance in that zone in front of an army which cannot be efficiently or thoroughly covered by either aviation or mechanization. In this field Cavalry is supreme. It is not confined to roads nor is it impeded by woods, by rough ground, nor by water, nor by lack of supplies. It can operate at all hours of day and night, in rain or in fair weather. There is no other arm that can perform this highly essential service with equal efficiency. Remember that Herodotus wrote of the Persian messenger who "travelled with a velocity which nothing human can equal"—"Neither snow, nor rain, nor heat, nor darkness are permitted to obstruct their advance." That might have well been written of the horse cavalry today only we might add "nor mud." In its employment on other missions, as a division it has a real rôle on the flanks, both offensively against the highly vulnerable infantry motorized column, and against the opponent's Cavalry. It is adapted for the close flank protection of the Army as it is so constituted that it can operate independently and afford maximum protection except from attack by large mechanized attacks. We must depend on our armored forces to come to grips with enemy armored forces because neither horse cavalry nor infantry is equipped with sufficient antimechanization to defeat a large determined mechanized force. Among other uses, horse cavalry is especially adapted to raid all forward installations of the enemy, his forward depots, communications and resources especially under cover of night as the advance of Cavalry is largely noiseless. But one of the most important uses of large bodies of horse cavalry is to form a reserve for a commander, a reservoir of power upon which he can draw at the psychological moment and be able to apply a great volume of fire quickly where he wants it. In every battle there comes a time when the action and pressure of a cohesive unit with great fire power, is needed at a particular point. This is the moment to use the Cavalry as it has an effect *sui generis*. But too often it is not available as it is scattered on inconsequential missions. It takes great character to hold large bodies of Cavalry in reserve and to refrain from dissipating its power, but he who can withhold it until the proper moment arrives for its use, has a great chance of winning the battle.

Comparison

It may well be asked why cannot the mechanized forces be just as effective for reconnaissance, flank protection, raids, and as a mobile reserve. As for reconnaissance it has been shown that terrain features are

an unsurmountable obstacle to complete reconnaissance by mechanization. As for the other missions, under favorable conditions mechanized forces can perform them equally effectively—but who is going to guarantee good weather, no rain, fair and negotiable terrain, unfailing air support, air superiority, gasoline supply, all of which factors are essential to mechanization and totally unessential for the successful operation of horse cavalry. If the Cavalry is to be employed in our country, or in any country of similar physical development I visualize it given frequent independent missions by the Army. It has inherent strength to perform such missions and its organization is admirably adapted for such use, especially if given proper air support and some chemical troops. Smoke and lots of it is essential to successful Cavalry operations with the help of aviation. It can be used boldly, and even without its help it can be so used, if our Army has mastery of the air, although close support of aviation will go far toward a successful issue. It should not in my judgment, be used in the classical academic zones of action. Its greatest use will be to combine its action with the mechanized forces and as each has the power to support and protect the other, bringing their enormous fire power to bear on the objective. It goes without saying that in any war that we shall have, our Air Corps will strive for mastery of the air. If that is lacking every mechanized force on the road, all motorized columns, camps, concentrations, are subject to devastating enemy air attack.

German Success

The successes of the German mechanized force were not achieved unaided, but were possible only because their routes of advance were cleared by the thorough and brilliant work of the German aviation. In a football game the player who runs with the ball and makes the gains, captures the attention and applause of the spectators who are only dimly conscious of the interference which made possible his performance. And so it is in modern warfare. Aviation runs the interference for the fire power of the ground forces. The Germans had the imagination to coördinate the use of

their aviation and mechanized force. Taking a hint from General Douhet's book on total war, they used Spain as their laboratory in the use of mechanization and later had their dress rehearsal in Poland. The whole conception was predicated on the closest cooperation between aviation and mechanization in which heavy bombers demoralized mobilization of the adversary by destroying his railroads, his air fields, his concentrations and his morale, while light bombers worked with the mechanization clearing its advance methodically. The thoroughness with which the German Air force did their work is wholly responsible for the success of the lightning war, and it was aviation which permitted the mechanized forces to advance with such rapidity, occupying demoralized villages and key strategic points and which gave to their forces the prestige that they now enjoy in the public mind. Does any one suppose however that German mechanized forces could possibly have advanced without that intimate air support? But the ability of a Cavalry Division to perform its missions will be greatly strengthened if assured of the support of light bombers capable of giving that close aviation support which it sorely needs and which it will add to the accomplishment of its missions, and to the saving of life. With such air support cavalry can go anywhere fully protected and meet the enemy on equal terms. Light bombers will give it such freedom of action, that it can choose its terrain for attack and force its will upon its opponent.

Cavalry-Air Training

It will afford the Cavalry a chance to train with the Air Corps daily. The two arms will be integrated in carrying out the army commander's mission. As it is, the Cavalry has practically no training today with aviation of this type, a kind of training that the War in Europe has proven so successful. In our Army we have not yet practiced in any maneuvers that type of aviation support for ground troops which from all accounts won the war in France for Germany. Coöperation with aviation has been largely limited to a few observation missions, a few attack missions, but on such a limited scale that officers are not familiar with the technique of working with the Air Corps and, vice versa, Air officers are not familiar with Cavalry technique. Light bombers are not available as yet to work with ground forces which presents a serious deficiency in our means of training.

Combat Teams

Warfare in our country can never be conducted as abroad and we should train combat teams of great strength which can strike with speed and ferocity. There is no more powerful a team than the Trinity of Aviation, Mechanization and Cavalry, which we have the opportunity of creating.

The war abroad has been one of movement, the type of warfare and the doctrine that has been traditional in our army and which has brought success in every war that we have fought. Especially is this true of the Cavalry, a fast moving concentrated means of fire which can be placed in the shortest possible time on any objective. Despite all the descriptions of new ways of making war, that side which can put down the greatest amount of fire on the objective, has the best chance of victory. Horse cavalry must be judged today by its perfected organization, by the power of its arms and by its battlefield mobility. If there is one lesson that the actual battle experiences of the present war has clearly shown, it is *the rebirth of Cavalry as a powerful combat force.*

Artillery, Cavalry Division

CARDED

By Lieutenant Colonel E. A. Hyde, Field Artillery

THIS brief discussion of the Field Artillery with the Cavalry Division is based partly on practical experience and, due to current reorganization, partly on theory. It will be noted that the article covers only the elementary details pertaining to the Division Artillery and to its use. It must be remembered that the Field Artillery is a supporting arm, not suitable for independent action. Its mission in this case, is to support the Cavalry Division.

Organization

The Division Artillery is organized into a motorized Division Artillery Headquarters and Headquarters Battery, two battalions of horse artillery, which are equipped with the 75-mm. howitzer, and one battalion of truck-drawn 105-mm. howitzers. From this it can be seen that the general organization parallels, on a smaller scale, that of the Artillery in the square infantry division. The headquarters battery furnishes the necessary personnel, equipment, transportation and supplies for the operation of the Headquarters. The headquarters functions primarily in connection with training, and in a tactical capacity, having very limited administrative scope otherwise. The headquarters battery is responsible for the training of the personnel, for installation, operation and maintenance of artillery headquarters, controls communications, operates the division artillery command post and all included installations. In general, the term "command post" includes the installation for the commanding officer, S-2 and S-3, the message center, the radio group, the switchboard and local wire installations. The types of communications that are available are wire, radio, motor, mounted and dismounted messengers and visual (rarely used).

Each horse battalion is organized into a battalion headquarters and headquarters battery, 3 howitzer batteries and a service and ammunition battery. The headquarters battery is primarily horsed but includes motorized reconnaissance and liaison elements. The service and ammunition battery is entirely motorized. The kitchen and maintenance elements are motorized in all organizations. The principal weapon is the 75-mm. howitzer.

The motorized battalion is similarly organized, except that all elements are motorized and that the principal weapon is the 105-mm. howitzer. Each battalion is capable of independent action and is complete within itself, administratively and tactically.

The fire unit in each battalion is the battery. The battery is made up of a headquarters, a battery detail, a firing battery, and a maintenance platoon. The battery detail handles all instruments, survey, fire computation and communications work within the battery.

The firing battery, consisting of four howitzers (sections) and an ammunition section, is the real unit of fire. The maintenance platoon (motorized in all organizations) is responsible for battery mess and supply. The 105-mm. battery has no ammunition section.

Equipment

A brief summary of figures gives the quickest index to the basic equipment, fire power and strength of the regiment:

	Hqrs.	*2 Horse Bns.*	*1 Motor Bn.*	*Total*
Officers	10	52	26	88
NCO's	20	236	126	382
Pvts. 1cl and Pvts.	71	986	432	1,509
Horses	14	1,142	...	1,156
105-mm. Howitzers	..	...	12	12
75-mm. Howitzers	..	24	...	24
37-mm. AT	..	12	6	18
.50 Cal. MG's	2	22	23	47
.45 Cal. Pistols	101	1,274	584	1,959
Light vehicles	8	34	28	70
2½-ton vehicles	7	38	67	112
1-ton trailers	2	32	29	63
Motorcycles with side cars	..	12	9	21

This table is exclusive of the band, which is at present non-existent. In addition there are eight officers and seventy-five men attached from the Medical and Veterinary Corps, and an attached Chaplain.

Tactical Employment

No set rule can be laid down to cover all cases for the tactical employment of the Cavalry Division Artillery. Certain general procedures can be followed in preparation for and initial entry into action. However, the Cavalry Commander and the Artilleryman must always retain an open mind regarding its use as it represents a powerful weapon which may be employed in a variety of ways against a variety of targets.

Ordinarily each of the two horse battalions is attached to, or placed in support of, a cavalry brigade, forming a combat team. This is the rule during the advance to combat and at least during the initial stages of combat. Within the combat team in march column, the artillery battalion is placed far enough forward to allow early entry into action, usually between the two regiments of the brigade. The motorized battalion is habitually retained under division control.

The Division Artillery Headquarters and the motorized battalion move in the motor column or with the motor elements of the Division. When combat is imminent the artillery headquarters, less train elements, habitually move with the Division Headquarters. The motorized artillery battalion is placed well forward among the motor elements of the Division to facilitate entry into action.

The ammunition and service batteries ordinarily march at the tail of the combat elements of their respective combat teams or columns, or march with the trains of the column. The ammunition sections of these batteries must be readily accessible to their respective battalions.

Upon entry into combat, a 75-mm. howitzer battalion is ordinarily in direct support of each cavalry brigade while the 105-mm. battalion is used as a general support weapon. However, the Division Commander may at any time centralize the control of all Division Artillery under the Artillery Commander and may then employ all of his artillery as the varying situation indicates. In general, control of light battalions will be decentralized to brigades when the Division operates over an extended front. When the zone of action is restricted or when the brigades are operating in immediately adjoining areas, the control of these battalions will be centralized or decentralized at the will of the Division Commander. The motorized battalion is retained under all except most unusual circumstances as a division support weapon. As such, it is a powerful weapon by which the division commander can influence the action, possessing speed of transportation, the highest division fire power, maneuverability of fire in range and direction. An exceptional case where control of all or part of this battalion might be decentralized is during pursuit. When decentralization is desirable, it is possible to attach batteries from this battalion to the 75-mm. howitzer battalions. Protracted attachments of this type are undesirable.

Essentials to Tactical Employment

Under this heading the most important considerations are Reconnaissance, Mobility, Liaison, Communications, Fire Control and Ammunition. Failure of any one of these elements might cause the artillery to fail in its primary mission.

Reconnaissance: This is carried on constantly by all advanced artillery elements, usually artillery liaison sections and reconnaissance detachments which are placed well forward in column. It seeks alternate routes, positions, observation posts enemy information during the march and is conducted continuously with the same objectives during periods in bivouac and position. Proper reconnaissance must foresee and precede all artillery action.

Mobility: This represents the ability of the artillery to give fire support to the cavalry upon entry into action and to furnish continuous supporting fire during action. The horse battalions can keep up with the horse cavalry at 5 to 6 miles per hour gaits indefinitely. They can maintain faster gaits over reasonable terrain for periods of two or three hours. They can ordinarily keep up with horse cavalry under normal conditions of gait and terrain. After entry into action, continuous support is maintained, in advance or withdrawal, by displacement by echelon. This can be done by staggering

the movement of batteries within each battalion so that at least one battery is always in position and range. A second method is to move one horse battalion while the second horse battalion and the 105-mm. battalion take over the missions of the battalion which is moving. Another possibility is for both horse battalions to move while the 105-mm. battalion takes over all missions. To get the benefits of the potential mobility of this unit, a careful road reconnaissance and a road priority based thereon is essential. The enemies to its mobility are not only adverse terrain, light sand and deep mud, but also obstacles, defiles, sharp turns, etc., ordinarily not considered obnoxious to civilian traffic. Faulty route selection or failure to keep a suitable route reasonably free from traffic congestion can nullify the mobility and, consequently, the weapon. In connection with movement of artillery columns it is of interest to know that the complete horse battalion, less trains, is about three-quarters of a mile in length when closed up. This increases to a mile or more when intervals in the column are increased. The motor battalion, less trains, travelling with an allowance of 50 yards per vehicle, has a road space of about two and one-quarter miles. With trains the column length is increased to almost three miles. If the road space allowance per vehicle is increased to 100 yards, the column length, trains included, is about five and one-half miles.

Liaison: This subject can be considered as two types, Command Liaison and Combat Liaison. Close liaison of both types is an absolute necessity for proper functioning of the cavalry-artillery team. Without this linking of the supporting and supported elements, coordination of fires and missions is a matter of chance, whereas certainty is essential.

Command liaison is obtained on the march by the commander of the artillery in the column moving with the column commander. It is well for the artillery commander to have a reconnaissance detachment readily available. An artillery liaison section, of which there are two in each battalion, habitually accompanies the advance guard of a column. The artillery commander has radio communications with his liaison section and with his battalion constantly during the march. When in bivouac or in action, command liaison is accomplished by the location of the artillery battalion command post near that of the supported brigade, by wire communication run by the artillery between two command posts or by the presence of a liaison officer of the artillery battalion at the brigade command post. Any or all of these may be used. This liaison must be effective.

Combat liaison is accomplished by the judicious use of liaison sections, two of which are organic in each battalion. These sections usually consist of an officer and four or five men. A sergeant is second in command. As the liaison sections should have greater mobility available to them than that of the supported unit, all sections are furnished motor transportation. Sections from the horse battalion have single mounts as well. For communications the section has radio, messenger and visual means at hand. Wire can rarely be made available by the battalion in cavalry action. The personnel of the section must be well trained and thoroughly competent. Inexperienced officers and men are useless on this task in combat. Knowledge of the sections missions, namely (a) to maintain contact with the front line or advanced elements of the supported units, (b) to get information of the enemy and our troops to the artillery commander, (c) to keep the supported commander advised regarding the possibilities of artillery fire, (d) to get fire when needed and to observe and adjust this fire when necessary, immediately brings out the above points. As casualties are heavy in these sections, it is a hazardous task where the best physically, mentally and professionally are none too good.

Customarily a section accompanies the advance guard of a combat team column when action is imminent and one moves with the advance elements of the motor column. During combat, a horse battalion sends a section to each regiment of the supported brigade. The use of the liaison sections of the motor battalion depends on the situation, though they are ordinarily available to be sent to the light artillery battalions. The commanding officer of the motor battalion places his command post near that of the division artillery whenever practicable.

The Division Artillery Commander establishes his command post near the division command post. In his capacity as division staff officer he and his assistants maintain close contact with all sections of General Staff and Special Staff. The Division Signal Troop maintains a line between the two command posts. It is a mistake to place these two command posts immediately beside each other as congestion is bound to result. A separation of two hundred yards is not excessive.

Communications: As previously mentioned, wire (including buzzerphones), radio, visual and motor, mounted and dismounted messengers are available to the artillery. These facilities are available to all echelons except that the howitzer batteries do not have buzzerphones and that the type of messenger available depends on the type of transportation available in the battery.

The Division Artillery Headquarters has wire communication with Division Headquarters (furnished by the Division Signal Troop), with the 105-mm. battalion (run by Artillery Headquarters) and where possible with the light battalions (installed by Artillery Headquarters). The Artillery Headquarters has a radio in the Division net. It also controls an artillery net which includes the three battalions and one or two headquarters sets. When the artillery commander leaves his command post for other than routine inspection purposes, he habitually is accompanied by a radio which operates in the artillery net. The artillery execu-

tive officer maintains a similar set at the artillery command post.

Each battalion headquarters runs wire lines to its batteries which in turn establish whatever internal wire system is required by the situation. The battalion liaison sections rely primarily on radio. Unfortunately, at present, voice sets are unsatisfactory in many situations while a ket set will not allow constant communications until suitable "all terrain" transportation is devised. Visual signalling is generally confined to the howitzer batteries where it is used as a secondary means. Messengers are used freely in all echelons.

A recent step is the addition of radio sets to howitzer battery equipment. This should prove invaluable as the battery observers must be free to move at will to maintain observation. Early artillery support for the cavalry will not have to wait upon the arrival of wire. Changes in observation posts will not be based partially on the feasibility of establishing telephone communications. This independence of wire in the fast moving cavalry situations is a big step forward for the battery commander. These battery sets are primarily for fire control purposes. The necessity for code is limited. Simple prearranged codes meet practically all requirements. Similarly throughout the division artillery, simple prearranged radio codes are sufficient for most situations. The artillery must avoid long encoded messages without violating radio principles.

Fire Control: In mobile situations, the battery is the fire unit. When the entire battalion is in action, the battalion commander exercises a varying degree of fire direction over his three howitzer batteries, depending on the situation. This control is exercised through the command, staff, communications and survey facilities furnished by the Battalion Headquarters Battery. In stabilized situations our scheme of battalion fire direction can be used. To be assured of effect, fire must be observed. This observation might be terrestrial or air. Ground observation is highly desirable. This is the task of the battery observers, who establish observation posts at points of vantages and of the liaison officers who act as advanced observers. Air observation and adjustment of fire is desirable for fire at extreme ranges or when the target cannot be seen by terrestrial observers. Map data can be used to direct fire when the gun position and the target can be located on a map, chart or air photo. This fire should be observed whenever possible, as the effectiveness of any unobserved fire is in doubt. A map with not less than a 1/20,000 scale is desirable for this purpose. The value of the map for fire control purposes decreases rapidly as the scale decreases.

While to date no survey and meteorological section has been assigned to the Division, it is felt that, due to the rapid strides that have been made by sections of this type in turning out accurate data and valuable survey information quickly, one will be added in the near future.

A point of great importance for the cavalryman to bear in mind is that the artilleryman must be kept constantly abreast of the situation in order to be able to plan his tactical employment and to foresee and plan his fires. In the attack and defense, prearranged fires, arrived at by consultation between the cavalry and artillery commanders, are often used. In the attack, preparations consisting of concentrations (areas of fire), fired in advance of the attack, are placed on suspected enemy strong points. In the defense, counter preparations are placed on suspected assembly area, routes of advance, defensive weaknesses in advance of the enemy attack. Timely information will often warn the artilleryman of the approach of targets of opportunity (targets of short duration). In all cases the artilleryman must be kept informed, not only regarding the enemy situation, but generally equally important, of the location of our advanced and flank elements.

Another point of great importance, which combines mobility and fire control, is the ability of the artillery to shift fire through large changes in direction and to fire at large changes of ranges in comparatively short periods of time. Changes in direction are usually effected only by natural and artificial obstacles. The maximum effective ranges are 75-mm. howitzer—8,000 yards, for the 105-mm. howitzer—11,000 yards. Any shorter ranges, can be fired unless natural or artificial masks (hills, buildings, etc.) intervene. The trajectories of both guns are of such high angle type that few dead spaces will be found.

Ammunition: This is frequently referred to as the reserve of the artillery. It is true that guns without ammunition are worthless. The types of projectiles available are high explosive shell, shrapnel, smoke shell and gas shell. The proportions of each to be carried are announced in a field order. Of the four, high explosive shell is the favorite. It is a task of the artillery battalion commander to keep ammunition up for his guns. For this task, he has the Service and Ammunition Battery. This battery is kept in rear of the battalion area in a place of concealment except while servicing the batteries. As far as practicable, its work is done under cover of darkness. In addition to ammunition, it handles all battalion supplies.

The Division Artillery Commander through the S-4

and ammunition officer maintains close touch with the ammunition situation and allots ammunition to battalions, within credits authorized, according to the situation. If necessary, ammunition sections may be assembled for specific missions or may be directed to assist in the supply of other battalions.

In the light battalion we say that 300 rounds per gun is a day of fire. For the 105-mm. howitzer, 225 rounds per gun is taken as the day of fire. These figures are merely units of measure and do not signify the capacity of the gun. Each 75-mm. howitzer battery carries 528 rounds or 157 rounds per gun. The ammunition section of the service and ammunition battery can carry approximately 1,680 rounds, about 140 rounds per gun, bringing the total available to the battalion commander up to a day of fire.

In the 105-mm. battalion, each battery carries 300 rounds, 75 rounds per gun. The ammunition section of the Service and Ammunition Battery carries approximately 150 rounds per gun, making about a day of fire available.

The ammunition sections, immediately after dumping their loads, refill at a dump for artillery ammunition which is established in the division rear area. This ammunition supply is usually regulated by Division through the Ordnance Officer.

Though the ammunition supply presents no problem on paper wars, under actual conditions when the hauling distance lengthens, the roads are torn up and deep in mud, the drivers tired, traffic congested, trucks have been lost, artillery ammunition supply becomes a problem which requires careful planning and can readily be a cause of deep concern.

Antimechanized Defense

Each battalion has an antitank platoon which includes six 37-mm. antitank guns. This is a motorized element capable of rapid movement on roads. It also has excellent cross country ability. The situation and battalion position ordinarily determine its use. The battalion also has nine .50 caliber machine guns in its antitank platoon. These also have motor transportation. The howitzers can be used for direct fire against mechanized elements in a close defense of position. They can also be used to place fire on avenues of mechanized advances. The artillery must always be prepared for all around defense of the battalion areas. With this in view it is frequently necessary to sacrifice some terrain features, which have been considered highly desirable, in order to take advantage of natural defense against tanks.

Defense Against Aircraft

The artillery must rely heavily on passive means such as dispersion, concealment and camouflage. It has been found that open formations, which make the horse artillery a poor target, are practical in open country. In wooded country, dispersion and concealment are used. The horse artillery must never be caught on the road in a compact formation. In such a formation, it is particularly vulnerable. When in position, the several elements of each battery are well scattered, and concealed or camouflaged where possible. The motor battalion employs similar passive means, but relies more on greatly increased space between vehicles to give dispersion when on the road. Natural means of camouflage are habitually used. Positions are rarely occupied long enough to permit extensive camouflage or fortification. The only active defensive means available are the forty-seven .50 caliber machine guns when they are suitably mounted. These machine guns are distributed through the Division Artillery as indicated in the preceding weapons table.

Summary

A summary of a few points for artillerymen and cavalrymen of the Division to keep in mind seems appropriate in closing.

The artillery must preserve its mobility, not only for the first move, but also for subsequent moves.

There is no rule of thumb which will cover the use of artillery in all situations. Its ultimate employment depends on the situation at hand.

The effective range of the 75-mm. howitzer is about 8,000 yards. That of the 105-mm. howitzer about 11,000 yards. Even if the artillery is not in sight they can probably shoot from where they are. Small displacements are not justified.

Adequate ammunition supply must be assured.

Radio within the artillery must be considered one of the primary means of communication. Particularly for liaison, the artillery has to make it work.

The supported unit must keep the artilleryman informed and must remember him in conferences and orders. Similarly, the artilleryman must pass his information on to the supported unit.

Liaison cannot be too perfect. Without it, coördination is left to chance.

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CROSSING RIVERS

By Colonel Harry D. Chamberlin, 2d Cavalry

RIVER crossings by horse cavalry have been discussed many times, but relatively few have been accomplished. In fact a high percentage of those few have been executed under such artificial conditions—that is, stripped saddles, no pack animals and frequently no weapons—that little was learned. In order to be effective, river crossings must be practiced under conditions as similar as possible to those which probably will be encountered in actual campaign.

Last fall, the 2d Cavalry furnished a war strength platoon with attached light machine guns for the purpose of demonstrating a river crossing to the Basic Horse and Mechanized Class, then at The Cavalry School. This demonstration was ably directed and staged by Captain Henry R. Westphalinger, a member of the Academic Division staff, Department of Tactics, while First Lieutenant Wm. F. Beaty, "E" Troop, 2d Cavalry, commanded the platoon. (Below.)

The first essential in training of this type, just as in any other training, is much practice. As far as the men are concerned, if they are good swimmers and soldiers, their rôles are readily learned. For average horses, however, quite a bit of preliminary work is required. They must be accustomed to enter water boldly and to swim calmly. All horses, if properly handled, will quickly learn to do this.

Preliminaries

The first step can be accomplished quite easily by the use of a large pit, similar to the dipping vats used in Texas for killing ticks. Essentially, it should be narrow enough to maintain the horse's sense of direction and long and deep enough to require a short swim of approximately one dozen strokes. In addition, the approach and exit should be firm, gently shelving and not slippery. The use of such a vat tends to make the horses

Figure A: A portion of Troop E, Second Cavalry, swimming Smoky Hill River, October 11, 1940.

Figure I: Two-man float, consisting of saddle equipment, pommel and cantle loads, and rifles, for two men.

water-conscious, bold and strong swimmers, and eliminates the possibility of accidental drownings. If a good stream, river, or lake exists nearby, all horses can be taught to swim quite as well in them. The vat is simply a good idea if available at a post for the first lessons, or to build where there is no natural swimming place at hand. These first lessons should be carefully supervised and conducted by the best horsemen. A timid, poor horseman spoils a horse at any kind of training.

After the preliminary training described above, those horses which have progressed suitably should be required, where it is feasible, to swim larger bodies of water, and longer distances. At first it is best to "herd" groups across rivers or lakes, the herders riding or swimming alongside the leading animals known to be strong swimmers. Snaffle bridles or halters only are used for this first practice. Feeding the horses on the opposite bank as soon as they land encourages and interests them in their work. This reward also aids in teaching them to swim a straight course. It is well to bear in mind that horses are attracted to groups of people or other horses. Consequently, if spectators are present or some horses are already on the far side of the stream they should be placed at such a point that the horses, when attracted to them, will swim in the proper direction.

Upon graduation from this intermediate stage, the horses next should be taught to cross stretches of water while saddled and equipped. Again, the most capable horsemen should give the first lessons, and *stripped* saddles, snaffle bridles and halters are used initially. It is advisable to fasten the snaffle reins to the square ring of the halter rather than to the snaffle bit. At all times when riding into the water, the men should use their legs strongly in order to drive the horses boldly ahead. Timidity on the part of the rider simply teaches balkiness. As soon as the horse walks to a point over his depth and must start swimming, the rider slips off on the up-current side and swims alongside his mount, holding onto a stirrup strap, saddle pommel, or the halter-shank which is left knotted loosely around the horse's neck. If the horse attempts to turn downstream away from the rider, the latter gently pulls the horse's head by the rein towards himself. If the horse turns toward the rider, he may be diverted in the proper direction by splashing water against the side of his face or pushing his head in the opposite direction. The rider may also reach across the withers and pull the horse's head in the desired direction by the far rein. After a horse has been taught to swim straight, the rider may allow himself to be towed by hanging to the tail. With horses that swim well, men may remain mounted in swimming over short distances. However, horses are like humans—the fat, round ones are very buoyant, while the thin, muscular ones of high specific gravity have great difficulty in swimming under a load. *It is much better to teach all soldiers to swim alongside the horse, or by holding onto his tail, because this is the only feasible method which will avoid overturning and drowning some horses if the swim is long or difficult.*

When the horses swim well, lightly equipped as described above, the full packs should be added, along with arms, and tactical exercises may be conducted with the river-crossing as an incident thereto.

Combat Situation

In a unit the size of a platoon such as was used at Fort Riley, a security detachment of from six to eight men is first sent across, their crossing being covered by suitable fire power. This detachment should logically be a part, or all, of the advance guard. Of course local, all-around security on our own side of the river is understood to have been effected upon halting. Since, in the initial bridgehead to be formed, speed and fire power are highly desirable, this advance group must have both. For speed, they should either leave pommel and cantle loads on the saddle, or drop them off to be brought across the river by others and only men with powerful swimming horses should form the detachment; horses that can swim with their riders mounted. No time should be taken for safety precautions advocated later on for troops that follow the bridgehead group or groups. For fire power, all must carry rifles, pistols and ammunition. The rifle is normally carried in the rifle boot. If the horse is known to be especially expert and bold at swimming and the distance is short, the rifle may be carried overhead to keep it dry, while

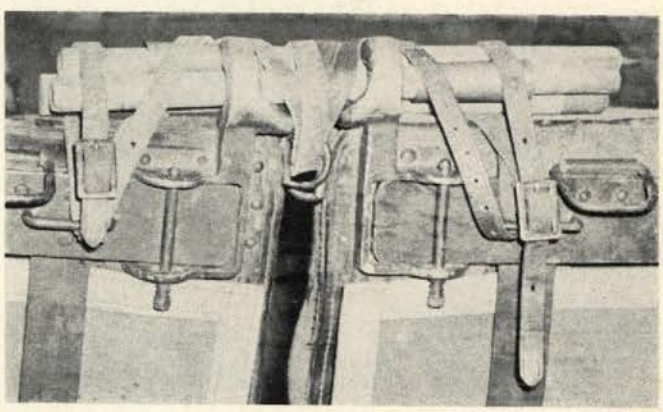

Figure II: Two adjacent Pack Saddles, showing method of binding together, using folded tent pole and two coat straps.

the soldier remains mounted. Pistol and cartridge belt are carried in the usual place, buckled about the waist. In this connection experiments indicate that both rifle and pistol ammunition may be submerged in water as long as twenty-four hours and still fire. As a matter of fact, it appears likely that a submersion of months will not damage the cartridges. The important point, however, is to be certain that all the water is blown out of the barrel before the weapons are again fired. Also they must be thoroughly cleaned at the earliest opportunity.

Upon the successful crossing of the initial covering force and their establishment of a bridgehead on the opposite side, the movement of the remainder of the patrol may be begun. First, means for floating the packs—cantle roll, light machine gun, administrative, etc.—must be provided. There are several ways of carrying these across. If lumber is available, rafts may be made. This, however, is a condition so seldom encountered that it may be disregarded for instructional purposes. Fortunately, enough material is carried within troop organizations in the cavalry regiment to construct "canoes" or "floats" which will easily take care of all equipment and some personnel.

Construction of Floats

The two-man float is simply made of two rifles, two shelter halves and one coat-strap. The rifles, bound together in the form of an X, form the framework. The two shelter halves serve to keep the water out. The lighter material, such as blankets, saddles, saddle bags, grain bags, etc., are first placed in the center of the shelter halves, these latter being placed one on top of the other, triangular flaps at opposite ends. The edges are then folded carefully up and bound to the rifles, thus forming the float. *See Fig. I.* Its main purpose is to carry equipment across the river in case horses have become casualties, or to carry rations, ammunition, etc. The men in charge of equipment swim across, pushing the float in front of them. If care is

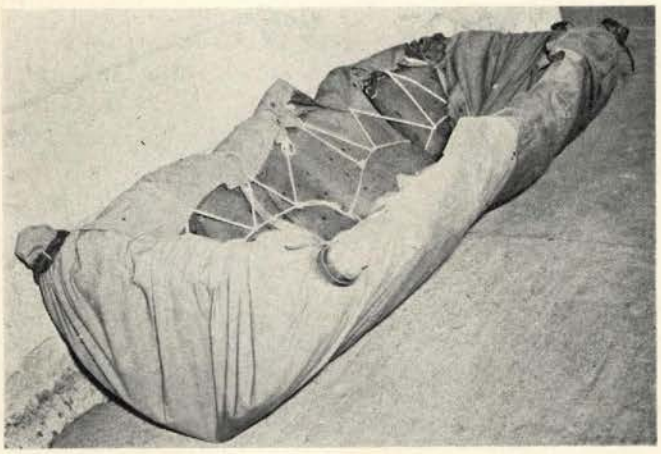

Figure III: A single "canoe," showing details of lashing shelter halves to framework. The lower cord, which passes through saddle rings, is tied in position first before running the cords through the buttonholes. Note coat straps around corners.

Figure IV: Soldiers of Troop E, Second Cavalry, launching float made of two sections of the 4-pack "canoe" described in text.

used in making the float, the contents should be relatively dry and undamaged upon reaching the shore.

The large float, designed to carry equipment from the light machine gun platoon, administrative packs, etc., is conveniently built by not less than four men. The material necessary consists of four Phillips pack saddles (less harness), five shelter halves, ten coat straps, 8 tent poles (shelter half), 5 shelter half ropes. The packs must be equipped with the new type, curved foot rest. The general procedure is as follows: 1st Step; Lay out and button together 2 shelter halves, end to end, triangular flaps at either extremity. Place another shelter half lengthwise over the buttoned seam. Place 2 more, buttoned as before, on top of the first three. 2d Setup; Place 4 pack saddles, in tandem and upside down, lengthwise on the 5 shelter halves. The large section of one of the tent poles is inserted in 2 adjacent curved foot rests and securely lashed in place by 2 coat straps. *See Fig. II.* This is repeated for each of the 5 other connections. A tent pole is then lashed across either end, completing the gunwhale of the canoe. If available, a sapling is lashed securely along the bottom, in the arches of the saddles, forming a keel. In case none is available, the saddles may simply be lashed together at the arches. 3d Step; Bring the shelter halves up all around the saddles, folding neatly at the corners. Lash them securely to the framework with the tent ropes. Be sure the tent poles at either end are securely locked at the joints. *See Fig. III.* 4th Step; If sufficient pack saddles are available, construct a second canoe and lash the two together, side by side, thus increasing their stability. The pair will carry approximately 1,000 lbs. and will stay afloat from 45 minutes to an hour. However, it is well to make some provision for bailing it out, as a little water is bound to seep through the seams. This float may be pushed across by men swimming, towed by swimming horses, or by ropes or wires from the opposite shore. *See Fig. IV.*

Now that we have the equipment ready to move, the main body should cross the river, in small groups, with

Figure V: Scout Car being ferried across on platform built on two engineer pontoons. An outboard motor (not shown) was mounted on one of the pontoons. The motive power, however, was furnished by sweeps and a rope stretched across the river on which the men pulled. Upstream view.

floats and extra horses. It is sometimes desirable to herd the extra horses across if the preliminary training has not been thorough. Bear in mind that a horse with a pack on its back, once tipped over, is gone.

After the main body has crossed, assembled, and reorganized, the security detachments (rear guard) may cross, and the march may proceed.

In many cases, one or more scout cars will accompany the unit. If it is impossible to find a bridge or suitable ford for these, they will have to be ferried across on engineer equipment, as shown in *Fig. V*.

Precautions

Of course, in peacetime practice and training the big thing in a river crossing is SAFETY. In a war, the main consideration is given to dangers from the enemy. These are avoided by proper tactical dispositions. During peacetime, we must consider dangers from natural sources. Since an ounce of prevention is worth a pound of cure, the obvious steps to take—during practice crossings—are: First, to organize a lifeguard force in several boats, composed of good swimmers, at least two to a boat. Each boat should be equipped with boat-hooks, life preservers, rope, oars, and outboard motor if possible. Second, each trooper should wear a kapok jacket

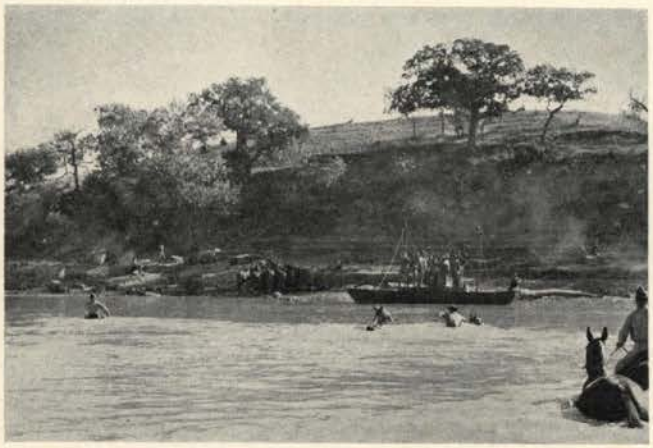

Figure VI: The landing stage for the Scout Car ferry. The horses, in general, swam towards this point because of the group of men there.

Figure VII: Layout of material necessary for the construction of two 4-pack canoes, for the construction of float illustrated in Figure IV.

(obtainable from the engineers) and a campaign hat. A man may easily be struck on the head by a struggling horse, and the hat will break the force of the blow. The jacket will keep him afloat if knocked unconscious.

In either a practice crossing or a crossing during maneuvers, when the weather is cold, some means should be provided for the men to dry and warm themselves. A tent with a heater—which may be improvised from a No. 10 can and gasoline or alcohol—should be set up on the far side of the river. If possible, dry clothing should also be provided.

After assuring maximum safety for the men, attention should be directed towards safety for the horses. First, all curb reins should be removed. They should never be knotted about the horses' necks. They may be used as tow ropes, for lashing, as improvised breast straps, or for any other suitable purpose. Second, snaffle reins should be unbuckled so the horse can not get a foreleg caught in them. It may be well, in addition, to fasten the snaffle rein to the halter D-rings rather than to the bit, as previously mentioned. Some men will involuntarily "tighten up" to such an extent that they may pull the swimming horse over backwards. Third, cinches must be good and snug, since saddles tend to slip back much more in water than at any other time. On herring-gutted horses a breast strap, either G.I. or improvised, should be used. Fourth, stirrups must be crossed over the saddle and all loose strap ends well secured, so that the horse will not become entangled while swimming. Fifth, men must be instructed NOT to use the reins as a handle, NOT to try to turn the horse abruptly, and NOT to pull led horses' heads around to the rear if they swim ahead. They must be turned loose and if some men are riding swimming horses they must slip off (on the upstream side) at the first sign of trouble, or when horse's head is about to go under water. They may hang on to mane, saddle, stirrup, or tail, but never to reins. If necessary, let go entirely and swim ashore. It is far better for all men to be taught to slip off and swim alongside their horses holding to a stirrup or strap.

If horse cavalry is to justify the many claims made for it, we must give much more thought to the subject of swimming rivers. With that thought must go plenty of practice to enable the crossing to be carried out smoothly, quickly, and efficiently. This work should be compulsory in all cavalry commands.

Supply of Horse Cavalry Regiment

By S-4

EDITOR'S NOTE: *This is the first of a series of articles on the subject of logistics for cavalry.*

* * *

WHAT is meant by the term "supply" as ordinarily used? In its larger sense we know that the term is meant to cover the furnishing of every item of equipment, clothing, arms, ammunition, transportation, subsistence, forage, gasoline, shelter; in short, any material requirement of the troops to insure their being properly organized, equipped, and maintained in a state of readiness for field duty. The greatest portion of this type of supply takes place in garrison, and in this article we will not concern ourselves with it. Instead it is our purpose to discuss the "supply" of the horse regiment in campaign: on the march, in bivouac, and in combat situations.

Let's start with the ideal situation, one which would delight the heart of any commander and one which no commander can ever honestly expect to have the good fortune to meet. Our regiment is at full strength, organized in accordance with Tables of Organization 2-11, approved by the War Department November 1, 1940. Not a man is on sick report, all animals are in excellent condition, and every piece of equipment as authorized by Tables of Basic Allowances is on hand and in serviceable condition. Our regiment "got this way" in a rest area where as a part of the division it received replacements and was reëquipped and trained for further combat operations, believe it or not. And just as life was taking on a rosy hue along came orders for the division to move up into the combat zone, and our regiment was required to operate a day's march in advance of the remainder of the division. This situation will serve as well as any other to outline what the regimental S-4 is up against and what he must do as a member of the staff team in maintaining the morale and combat efficiency of the regiment.

CLASSES OF SUPPLY

What classes of supply are we interested in now? Here they are:

Class I: Rations and forage.
(Class II: Individual and organization equipment.)
Class III: Gasoline and oil.
Class IV: Medical supplies for the surgeon.
Class V: Ammunition.

SUPPLY VEHICLES

What do we have in the way of equipment in which to carry these supplies, and with which to effect resupply as required? Here it is:

21 Trucks, 2½-ton, cargo

3 Trucks, ½-ton pick-up (medical detachment).

Ration and ammunition packs in each troop are not mentioned here, as we are principally concerned with supply of the regiment as effected by S-4. The twenty-one trucks are divided into two classifications: 11 combat and 10 kitchen trucks. They are operated by the personnel of the transportation platoon under the general direction of S-4. Normally the trucks are allocated to the troops of the regiment for use and loading as follows:

Troop	*Combat Trucks*	*Kitchen Trucks*
Rifle troops (1)	6	6
Machine-gun	2	1
Special weapons	2	1
Headquarters and service	1	2
	—	—
	11	10

The medical detachment trucks operate under the direction of the surgeon. While they carry a certain part of the medical supplies, ordinarily they are not used for resupply of medical and surgical items. Usually these items will be supplied through medical channels and without its being necessary to use regimental truck transportation; however, there is always the possibility that on occasion truck transportation may have to be used for this purpose, and in the end it is S-4's responsibility that the surgeon's supplies are available in required quantity.

REGIMENTAL SUPPLY

What supplies should the regiment have when it marches at daylight tomorrow morning?

Class I (rations and forage) comes first. Now that we are equipped with 2½-ton trucks we have enough cargo space to enable us to operate on the ideal ration cycle: beginning with supper. By this we mean the rations and forage received tonight (supplies will usually be delivered under cover of darkness in the combat zone) will be for consumption during the twenty-four-hour period starting with supper tomorrow evening. In other words, today being Monday, the rations and

forage we receive tonight will be for supper tomorrow (Tuesday) and breakfast and lunch on Wednesday. Where will breakfast and lunch for tomorrow be carried? Breakfast will be in the bellies of the men and animals, and lunch will be that bane of all cooks' lives and a waste of rations—a "cooked meal" carried in the saddlebags or on the vehicles for each man, with the noon feed of grain on the saddles for all animals.

The full ration, the one beginning with super tomorrow evening, may be carried in one of two different ways depending on the situation. If combat is not probable and the regimental commander can foresee no reason why the trucks cannot be made available to troops upon or shortly after their arrival in bivouac, then the whole ration is usually carried in the kitchen trucks. The grain may be divided between the combat and kitchen trucks as necessary, or one feed (evening) may be in grain bags on the saddles with the noon feed. In the event the regimental commander cannot clearly foresee the situation, or combat is possible during the day's advance, then the evening meal (supper) should be carried in the troop ration packs and the evening feed of grain on the saddles. It is S-4's duty to study and understand the tactical situation thoroughly and submit recommendations to the regimental commander on this feature. The requirement is that rations and grain must be available to the troops at the time necessary to enable them to serve a hot evening meal to the men and grain to the horses shortly after arrival in bivouac or suspension of combat. If it cannot be definitely foreseen that the trucks will be able to come up promptly, then the use of the ration packs is indicated.

It will be noted that hay (long forage) has not been mentioned. We do not have sufficient cargo capacity on our trucks to enable us to carry a day's supply of hay. Hay that is received during the night should be immediately fed to the animals. The earlier it is fed the better, as they should be given the opportunity to consume the whole hay ration during the night. Because of the uncertainty of delivery of hay cavalrymen take every opportunity to graze their animals during campaign.

While we are on the subject of Class I supplies we will take the opportunity of discussing the types of rations, and those we should carry. There are four types of rations.

Type A ration consists of those articles prescribed by the commander of the field forces. It generally parallels the garrison ration, and the meat and vegetable components are fresh. This ration is issued to troops in rear areas.

Type B ration consists of the same general components as Type A, except that the perishable items are issued in processed form to avoid spoilage. This ration is issued to troops in the combat zone.

Type C ration consists of six cans of prepared foods. Three cans have crackers, coffee, and sugar; the other three have prepared meats and vegetables packed quite solidly. The contents of the meat cans are tasty and can be eaten either "as is" or heated. If desired water can be added and a very nourishing soup prepared. This ration is issued to the division on the basis of one for each man in the division, and all are usually carried in the trucks of the division train. They can, by direction of the division commander, be issued to regiments and thence to troops to be carried in the kitchen trucks, or when directed by the regimental commander issued to and carried by the individual men. While neither this ration, nor any other, is termed an "emergency" ration, still it is regarded in practically the same light in which we used to regard the "iron ration."

Type D ration consists of three four-ounce bars of prepared chocolate. This ration is issued, carried and consumed similarly to the Type C.

In the case of our regiment under the situation assumed, S-4 should recommend to the regimental commander that one Type C and one Type D ration for each man and officer of the regiment be procured from the division quartermaster and carried on the troop kitchen trucks. If this is done we find that the regiment will depart at daylight tomorrow (Tuesday) morning (after breakfast) with:

Type B rations to include Wednesday's lunch.

Type C and D rations sufficient for two additional days if conditions require their use.

Grain for all animals to include the Wednesday noon feed. Later we will discuss the resupply of these items.

* * *

Class III (gasoline and oils) comes next. How much should we have in the regiment? Each and every vehicle, truck, scout car and motorcycle should have its operating tank filled to capacity. This is assumed to be sufficient to operate the vehicle during one day of normal operation. In addition there is carried on the trucks in ten-gallon containers a sufficient supply to refill the operating tanks of all vehicles in the regiment once. Thus we normally have a sufficient amount on hand to operate all vehicles for two days. All operators of vehicles must be trained to service their vehicles immediately upon completion of a day of operation in order to guard against the possibility of an unexpected movement catching them without a full supply of gasoline and oil. The prudent operator will service his vehicle every time he is near an available supply of gasoline and oil. It is the responsibility of S-4 to insure that vehicles are serviced, and he must be careful that the troop or platoon commanders concerned are promptly notified where the required supplies are available to them. It will be apparent that the regiment will depart tomorrow morning with sufficient gasoline and oil to operate all vehicles during Tuesday and Wednesday.

* * *

Class IV (medical supplies). These consist of many items too numerous to mention. The amount carried is

assumed to be sufficient to care for the needs of the surgeon and veterinarian during a combat action until additional supplies can be made available through the evacuation channels of the division. Those supplies on hand in the regiment are carried in the pack sets provided for that purpose, and some in the pickup trucks of the medical detachment. S-4 normally will not be called upon to obtain these supplies except in emergency. It is his duty, however, to assure himself by inquiry of the surgeon that the required supplies are on hand. This puts S-4 in the position of being able to advise the regimental commander of any phase of supply in the regiment.

* * *

Class V (ammunition). Tables of Basic Allowances prescribe the number of rounds of each kind of ammunition to be on hand within the regiment and where it is to be carried; on the man, with the gun, or in what we used to call the combat train, now known as the ammunition train or trucks. In our tables of organization these trucks are still referred to as combat trucks.

In general terms the amount carried on the man or with the gun is considered to be one day of fire. In our arm it is better expressed as being sufficient to meet the requirements of combat until the replenishment agencies can start to function. In our ammunition (combat) trucks a sufficient amount is carried to replenish once the amount carried on the man or with the gun, except for those weapons which arm the scout cars and trucks. This latter statement is not literally true in that a part of the ammunition listed as to be carried by the combat train is carried on the ammunition packs of the troop headquarters sections of the rifle troops and the machine-gun troop instead of on the combat trucks allocated to those troops. The ammunition carried on scout cars and trucks is estimated to be sufficient to meet the requirements of their weapons for the same period that carried by all means within the regiment will meet the needs of the other weapons. Our regiment will then march with two days' fire for all weapons, or a supply sufficient to meet the needs of combat until the replenishment agencies make a further supply available; express it whichever way you prefer.

Transportation

The transportation of the supplies as outlined above will not serve to tax the cargo capacity of the twenty-one trucks we have for this purpose. But there is all the combat equipment, kitchen equipment, and authorized baggage to be transported. Besides, if there is available capacity on the trucks the regimental commander will order the cantle rolls of all mounted men to be carried on the trucks, thus relieving each riding horse of about nine pounds of weight. In any event the trucks known as combat trucks will be carrying mixed loads consisting of ammunition, tools, chests, grain, baggage, gasoline, oil, cantle rolls and miscellaneous small items. The kitchen trucks should be restricted to carrying the kitchen equipment, rations, and water, with the possible exception of one feed of grain in sacks.

It is unfortunate for us that we do not have a sufficient number of smaller trucks additional to the present number of 2½-ton trucks to transport all the ammunition carried by trucks, separately. At present the combat trucks carrying their miscellaneous items must be carefully loaded in such manner that the ammunition is readily accessible at all times. And in the event of combat which requires a replenishment of ammunition from the rear areas, the loads of equipment must be combined so as to release trucks to haul the resupply. Either that or the equipment must be dumped temporarily or hauled back and forth, thus reducing the cargo space available for ammunition. The writer believes there is no more certain method of losing equipment of a cavalry unit than to dump loads during a cavalry engagement. That method should be reserved exclusively to the units of low mobility. The answer to these difficulties, and they are just that, is to be found in having a sufficient number of small cargo trucks of low silhouette to carry all ammunition. They should be in sufficient number to permit loading with duplicate loads, at least within squadrons, to guard against the destruction or disablement of one truck meaning the complete loss or interruption of ammunition supply for any unit. Of course we can function with our present equipment, and each regiment will have its own method of handling the problem. Some will combine troop loads initially—undesirable—and thus release trucks for carrying ammunition solely. But the number of trucks so released will be small, not sufficient to permit carrying duplicate loads, with the attendant danger of the destruction of one truck proving disastrous. Then there is the added difficulty of issue of ammunition to more than one unit either before or during combat; unnecessary confusion and delay. Other regiments will not combine loads until combat is imminent or actually joined; again unnecessary confusion and delay; while still others will either dump loads or transport equipment back and forth each time a truck makes a trip. And picture in your mind's eye the difference between a train of large 2½-ton trucks with their high silhouettes and cumbersomeness following a regiment and supplying ammunition during combat, and a train of small handy trucks doing the job. Flexibility, mobility, and efficiency all belong to the smaller trucks.

Rifle Troops

But let's get back to how this ammunition is carried without regard to what type of truck is used. In the rifle troops there is but one combat truck; therefore all the truck-carried ammunition will be on that one truck. Each troop has one cavalry type bandoleer for each rifleman in the troop. These bandoleers are loaded by troop personnel and the loaded bandoleers are car-

ried in the ammunition truck. Each bandoleer has 88 rounds of rifle ammunition and seven rounds of pistol ammunition. When combat is imminent or probable the bandoleers, upon direction of the regimental commander, are issued to riflemen. They can be carried either around the horse's neck or slung across the shoulder of the individual. When so issued each rifleman will have 176 rounds of rifle ammunition and 28 rounds of pistol ammunition. In each rifle troop headquarters section there are two ammunition packs. They are each loaded with 1,800 rounds of machine-gun ammunition in belts, a total of 3,600 rounds. Like the bandoleers these ammunition pack loads may be carried in the truck, being transferred to the pack animals at the same time and under the same conditions which cause the issue of bandoleers to riflemen. Or in some regiments it is habitual to carry these loads in pack at all times. Take your choice. All other ammunition carried on the trucks will be in boxes.

Machine Gun and Special Weapons Troop

In the machine-gun and special weapons troop there are two combat trucks each. It is a matter of regimental practice whether all ammunition to be carried on trucks is loaded on one truck and all equipment on the other, or whether the ammunition is divided into duplicate loads with each truck carrying a part of the equipment and baggage. The writer learns to duplicate loading to guard against possible complete destruction and to gain flexibility, but there will be the attendant difficulty of combining loads when replenishment becomes necessary. This can be avoided by loading all ammunition on one truck and all equipment on the other. Again, take your choice.

In the machine-gun troop alone there are in the troop headquarters section twelve ammunition packs. Each pack load consists of 1,500 rounds of machine-gun ammunition, belt-loaded, a total of 18,000 rounds. As in the rifle troops, this ammunition may be carried on the trucks until the need for its transportation in pack is evident, or habitually carried in pack, according to regimental practice. The balance of ammunition carried in the trucks should be carried loaded in belts or bandoleers according to its purpose.

In the special weapons troop there are no ammunition packs assigned to the troop headquarters section; therefore all the ammunition not on the man or with the gun is carried in the trucks. The same conditions affect the loading of the two trucks as apply to the machine-gun troop. The ammunition for the caliber .50 machine guns should all be belt-loaded; it will be issued in this manner, and the mortar ammunition will be issued in bundles which can be easily transported by pack. That for use of riflemen should be in bandoleers.

Headquarters and Service Troops

In the headquarters and service troop the amount of ammunition carried in the combat truck is negligible under present tables. That so transported should, however, be carried prepared for use according to its purpose insofar as equipment will permit.

* * *

Expressed in general terms, it all totals up to the fact that when the regiment marches it will have two days of supply of all needed items, except for hay, equal in mobility to itself. Hay can usually be obtained locally wherever the regiment may find itself, either by purchase or requisition. Or it may be supplied from the rear, either by division transportation or transported in our own trucks. If for any reason hay cannot be obtained as required, grazing will help, and S-4 will have to "bust a button" to secure a substitute for long forage. But we should not assume this condition will exist, as S-4 in planning for the supply of his regiment will have consulted the division G-4 and the Quartermaster, and those officers will see to it that the division supply agencies do their part.

* * *

The discussion of the supply of the regiment during its advance and in a combat situation will be continued in a subsequent number of The Cavalry Journal. *It is during these phases of operations that we find the difficulties of supply. To meet these difficulties and overcome them to the end that the regiment is adequately supplied at all times requires the ability of a resourceful, energetic and able S-4.*

The Armored Force

War Department's Official Language

"The armored force is the assembly under a single head of all mechanized troops in the United States Army, and combines the infantry tanks with the mechanized cavalry. In modern warfare it is the heavy cavalry of a motorized and mechanized army.

"The form of action of the armored divisions is offensive and aggressive. It sustains surprise by the speed and drive of its tactical movement. It uses its mobility to choose the most favorable directions of attack to reach vital enemy rear areas.

"Its defense is elastic and mobile and characterized by the counter-attack. It does not seek to attack the strong place of the enemy. It places its strength in the weakest place in order to break through and penetrate the rear areas of the enemy.

"Once into these rear areas it fans out to cut communications and supply, and then, by dual development, drive the enemy up into the holding force of the infantry. In this maneuver the enemy has no alternative to save him from destruction.

"The only course left to him is to retreat, yet, in so doing he leaves his flanks unprotected and subsequently his forces vulnerable to destruction."

* * *

While studies have been completed looking toward the establishment of an Armored Corps as a separate arm of the Service, it is quite unlikely that the War Department will ask for any legislation along that line for some time. General George C. Marshall, Chief of Staff, stated recently that while the present arrangement is a temporary one and some permanent set-up will have to be devised eventually, he feels that development can proceed more rapidly under existing arrangements. He said that a statutory change in the arrangement would, of necessity, take some time to establish and the channels would be changed. With the Force expanding into four divisions instead of the present two, he feels that matters will be better expedited by continuing the existing procedure.

* * *

Armored Force Board

A War Department circular issued this week publishes instructions pertaining to the Armored Force Board. Actually the Board was established early last summer. Lt. Col. John D. Kelly, Cav., is president of the Board, and Maj. George W. Read, Jr., Cav., recorder. Under the direction of the Commanding General of the Force, the board has been functioning for some time. Upon its establishment, the Board took over the library, files and studies of the Mechanized Cavalry Board, of Ft. Knox, and the Infantry Tank Board, Ft. Benning, which were turned over to it by the Chief of Cavalry and the Chief of Infantry, respectively. The instructions issued this week state: "1. Station.—The Armored Force Board will have permanent station at Ft. Knox, Ky. 2. Purpose—The purpose of the Armored Force Board is to investigate, consider, and report on such subjects as may be referred to it by the Chief of the Armored Force, and to originate and submit to the Chief of the Armored Force recommendations for the improvement of the Armored Force. 3. Composition—The Armored Force Board will consist of not less than nine nor more than twelve officers of the Regular Army permanently assigned to that duty, and such others as may be temporarily assigned by the War Department or the Chief of the Armored Force from time to time. 4. President and recorder—The Chief of the Armored Force will designate the president of the board. The president of the board will designate the recorder. 5. Control and direction—The Armored Force Board will function under the direct control of the Chief of the Armored Force. 6. Correspondence—Correspondence between the board and the Chief of the Armored Force will be direct."

* * *

1st Armored Division Sets Mileage Record

The 1st Armored Division established a mileage record in the execution of its training program during the month of November, it was announced recently by Major General Bruce Magruder, Division Commander, upon completion of a study of mileage reports.

The Division operated 1,217 vehicles including tanks, scout cars, motorcycles, trucks, a total of 476,056 miles during the month or an average of 18.3 trips around the World. Each vehicle traveled an average of 381.1 miles during the month.

* * *

2nd Armored Division to Receive Portion of Benning's 8,000 Selectees

Approximately 8,000 selective service men are due to arrive at Fort Benning during January for assignment to regular army units at the post. Most will go to the Second Armored Division and the 24th Infantry, large increments for Fort Benning's Fourth Division not being due until early in February.

The Second Armored Division and the 24th Infantry will operate temporary replacement centers, at which the new arrivals will receive thirteen weeks of basic training, largely individual, before joining the units to which they are assigned.

Medium Tank has a radius of 130 miles, with a normal speed of 30 miles per hour

The replacement center of the Second Armored Division will be located in newly constructed buildings in its Cusseta Highway cantonment. There will be a training company for each 162 trainees. Each of these companies will have five officers and 36 regular army enlisted men as its training cadre.

* * *

Personnel for the Armored Force

No change will be made in existing policies with respect to the detail of Regular Army officers to the Armored Force. Regular Army officers who desire to serve with the Armored Force may indicate such preference on the annual statement of preferences or by a separate communication addressed to the chief of the arm or service. Such preferences will not be referred to the chief of the Armored Force, but will be utilized by the chief of the arm or service concerned in connection with recommendations for assignment of Regular Army officers to the units of the Armored Force. Insofar as practicable, chiefs of arms or services will continue to give preference in recommending assignments to the Armored Force to those officers who have had mechanized, motorized, or armored vehicle experience and to those officers who have expressed a preference for such assignment. The War Department states that chiefs of arms and services which are represented in the Armored Force and those charged with the maintenance of Regular Army commissioned personnel for the armored regiments will maintain with the units of the Armored Force the same percentage of officers in the various grades, of officers of comparative efficiency and of graduates of special and general service schools, as are maintained with other troop units of their arm or service stationed within the continental limits of the United States.

Editorial Comment

Cavalry Character

1941 finds nearly all of our national guard cavalry inducted into federal service. Of the approximately 30,000 reserve officers now on extended active duty, approximately 900 are cavalrymen. Thus, the amalgamation of the three components of our peace-time army (Regular, National Guard, and Reserve) has resulted in a coalescent cavalry arm—*the Cavalry of the Army of the United States.* We wear the identical cavalry insignia—our armorial crest. This unity should likewise apply to our training, our thought, our mutual relationship, our character and our personal conduct. Mutual confidence and respect are essential to the successful accomplishment of any coöperative undertaking. Our cavalry of tomorrow depends on what we, individually and collectively, make of it today. Let us be conscious of our cavalry tradition and heritage.

From that period of history known as the Dark Ages, there emerged the Age of Chivalry which was characterized by the revival of high standards of personal honor and integrity. Military men who demonstrated ability as leaders in war, men of upright character and high ideas—courageous, honest, unselfish, loyal and chivalrous men, as exemplified by those whose preëminence in these qualities was recognized by elevation to knighthood—became the leaders in civil and political affairs of that time, and left their imprint of achievement in the traditions and customs which so greatly influenced the conduct of succeeding generations.

Through the centuries since the Age of Chivalry the military profession has cherished and preserved the finest and best of the ideals of that period. The traditions and customs which merited approbation as standards of personal conduct, "an officer and a gentleman," have survived in what is known as "Customs of the Service," which is largely an unwritten code of honor, of ethical standards to which the military leader must rigidly adhere to merit the confidence of his superiors and to command the respect, loyalty and obedience of his subordinates.

As a natural consequence of scrupulous adherence to the highest standards of personal integrity, commissioned officers as a class enjoy an esteem not generally accorded to other persons until the latter have individually demonstrated that it is merited. The word of a commissioned officer is counted as good as his bond. This tradition has so persistently existed in the military service that it is now recognized in regulations and law. The written certificate of a commissioned officer is accepted in military administration in lieu of statements which other persons are required to subscribe to under oath.

For the good of the service and for the protection of the reputation of our cavalry it, therefore, becomes the duty of *every* cavalryman to guard well and perpetuate our cavalry character. By our own high ethical standard of personal conduct and loyalty, only, can we preserve our cavalry trinity—*our duty, our honor, our country!*

★★★

The Journal's Star Contributor

In response to the query, "The article I liked BEST in recent journals was . . . .," on the 1941 proxy cards, a tally indicates that "General Hawkins' Notes" ranks first in popularity.

General Hawkins

General Hamilton S. Hawkins, Retired, is an officer of extensive cavalry experience and sound reasoning, as his valuable contributions consistently have indicated. The Cavalry Association deeply appreciates General Hawkins' interest and coöperation.

Our Chief of Cavalry, Major General J. K. Herr had the highest score for a single article; his "A Survey of Our Cavalry."

The majority of cards merely stated that "All" or "Nearly all" were good. The general and human interest articles were popular.

Nearly every article in recent JOURNALS, however, was mentioned by some as "Best," which proves that we are trying to give all of our readers what they wish. Those in the seven National Guard Horse-Mechanized Regiments, now in the process of reorganization, have requested articles that will be of assistance to them. Similarly, members assigned to horse cavalry and armored regiments are especially interested in their respective fields.

Please write and tell us what you want and send a screed of your own authorship.

Note deadline date on page 1.

* * *

Staff Qualifications

"Untiring industry, helpfulness, self-sacrifice, and self-effacement are the foundation stones of efficient staff service. The staff officer, as such, gives no orders in his own name. He seeks no credit for success gained by his commander on his advice; and conceals his nonconcurrence in plans that have brought disaster. He foregoes opportunities for personal distinction to devote himself to the interests of his commander and comrades; yet, when exposure is demanded, so bears himself that his motives in the former case are beyond question. Tact, good temper, forbearance, alertness, willingness to accept responsibility, reserve, good judgment, and straight thinking not to mention personal valor, would be the conspicuous characteristics of the perfect staff officer."

* * *

To this quotation may well be added: he must possess broad vision, yet be attentive to details; he must be able to coöperate and coördinate; he must have initiative and be progressive; he must be thorough and accurate; he must appreciate the reason for a staff, and have faith in the system.

Annual Meeting

In accordance with the call of the President of the United States Cavalry Association, the fifty-second annual meeting of the association was held at the Army and Navy Club, Washington, D. C., at 8:00 PM, December 13, 1941.

A quorum was present, in person or by written proxy, for the transaction of business.

Parenthetically, of interest, in addition to our present Chief of Cavalry, two former Chiefs of Cavalry were present; namely, Major General Guy V. Henry and Major General Leon B. Kromer.

The Secretary-Treasurer presented and read his annual, previously audited, report and financial statement, which was duly approved. The report indicated that the affairs of the Association are in very satisfactory condition.

The next order of business was the election of officers for the ensuing year.

The following were elected:

President: Major General John K. Herr, Chief of Cavalry.

Vice-President: Brigadier General Hamilton S. Hawkins, USA Ret'd.

Secretary-Treasurer: Lt. Colonel Fenton S. Jacobs, Cavalry.

Executive Council: Brigadier General Walter B. Pyron, 56th Cav. Brig.; Colonel William W. Gordon, 3rd Cavalry; Colonel Karl S. Bradford, Cavalry; Colonel Kenneth Buchanan, 106th Cavalry (H-Mecz); Lt. Colonel Eugene A. Regnier, (Cav.) G. S.; Lt. Colonel Homer E. Carrico, 311th Cavalry; Lt. Colonel Herbert H. Frost, 302nd Cavalry; Major Verne D. Mudge, (Cav.) G. S.; Captain Paul D. Harkins, 3rd Cavalry.

After this, the order of business enthusiastically turned to the affairs and interests of the Cavalry Association with remarks by the Chief of Cavalry.

The Executive Council appointed Lt. Colonel Fenton S. Jacobs, Cavalry, Editor of The CAVALRY JOURNAL for the calendar year, 1941, or until relieved during the ensuing year.

The meeting then adjourned and refreshments were served.

* * *

Cavalry Guidon

It has been suggested that, inasmuch as our distinguishing color is yellow, our cavalry guidon should be changed to one having a solid yellow field with blue letters and numerals.

It is claimed that our present guidon so closely resembles several of the other arms and services that at a distance it is easily confused. It further is claimed that a test disclosed that yellow can be seen more clearly in fog or night than red and white.

It would be interesting to know the consensus of cavalry opinion on this subject.

Cover Design

Numerous letters from our readers clearly indicate that sentiment is for continuing with the cover design of The CAVALRY JOURNAL substantially as it has appeared in recent issues. In other words, the Remington drawing suggests our historical background, while at his feet there is a symbolical parade of modern cavalry as we have it today. So be it!

In this regard, it is believed that the following letter is of interest:

Gentlemen:

Check for $3.00 herewith for The CAVALRY JOURNAL *for 1941.*

By all means NEVER change the cover or remove Fred Remington's famous painting of the U. S. Cavalryman, which is an inspiration to all horse lovers and brings back memories of pioneer days, Indian fights, Pony Express, stage coach—typical American plainsman rough and ready, when soldiering was real work and hardship.

I personally served with Troop "H," 14th U. S. Cavalry, Dept. of Mindanao, P. I. October, 1903-May, 1905, and Moro Campaigns, where the horse was supreme.

General Hawkins' accounts and comments are good; also articles on maneuvers.

Very truly yours,

Signed: JOSEPH J. ROHLK.

Cadence

In reviewing the articles written by the various newspapermen, who recently were given a personally conducted tour of our principal army posts, by the War Department, the following paragraph manifests an interesting reaction:

> "It was the caliber of the raw human material, however, and the spirit of all concerned—officers, veteran noncoms and recruits—which impressed the observers most. For there were noticeable defects, not only shortages of modern weapons but evidence that the units were not fully trained. The soldiers, husky specimens as they were, were not all in step and lines sometimes straggled."

The units were not fully trained . . . The soldiers were not all in step.

Question: Is being in step the outward and visible sign, indicative of the degree of training?

There are two opposing schools of thought in this regard.

(1) "We allow only fifteen minutes a day for close order drill. . . . There is so much else for the men to learn in the modern army. We must have discipline, but discipline that means alertness of mind and muscles, not just parade-ground snap."

(2) "Marching in step is an important morale factor; it promotes timing and teamwork; it radiates a feeling of unity and strength—coördinated effort."

It is suggested that there is something far more fundamental than that which is expressed in either of the foregoing statements.

Those who have marched, dismounted, great distances under trying conditions, know that the rythmic flow of marching in cadence is restful to the fatigued mind and body. The visible concordant swaying of the shoulders and the cadent tread of the feet is harmonious: it is soothing to strained nerves. It gives a tired outfit a refreshing "lift," especially when accompanied by melody—be it song or martial music. It is comparable to horse-leading after a long period in the saddle; or a change of gait that has been excessively long. Many can remember on occasion how one "dumb-John" being *out of step* in a tired unit became so discordant and irritating that personal antipathy toward that particular individual was inherently general.

Marching in step, like dancing, serves a practical purpose. Those who are athletically or musically inclined instinctively feel cadence; others can acquire it by practice. Whether in rank or not, men, therefore, should form the habit of walking in step. This obviously is worthy of the consideration also of hiking clubs and semi-military organizations whose members include prospective trainees. It is a military training factor.

Cadence is a military differential.

General Gets a Horse to Keep Up With Tanks

By the Associated Press.

BROWNWOOD, Tex., Jan. 8.—So the general may keep up, the motorized 36th Division has ordered him a horse.

An official announcement said private mounts had been purchased for Major General Claude V. Birkhead, commanding officer, and his chief of staff, Colonel George Sears—so they could follow training activities "in difficult terrain."

Saluting

CHANGES IN AR 600-25

Pending the printing of changes in AR 600-25, November 11, 1933, paragraph 1*a* of those regulations is changed as follows:

1*a. When the national anthem is played.*—Whenever or wherever the national anthem is played or "To the Color" (Standard) sounded, at the first note thereof all dismounted officers and enlisted men present but not in formation will stand at "attention," facing the music, and render the prescribed salute (see par. 6), except that at "Escort of the Color" or at "Retreat" they will face toward the color or flag. The position of salute will be retained until the last note of the music is sounded. Those mounted on animals will halt and

render the salute mounted. Vehicles in motion will be brought to a halt. *Persons riding in passenger cars or on motorcycles will dismount and salute as directed above. Occupants of other types of military vehicles will remain seated in vehicle at "attention," the person in charge of the vehicle dismounting and rendering the hand salute (tank commanders salute from the vehicle).* Individuals leading animals or standing to horse will stand at "attention" but will not salute.

* * *

When will our Cavalry Bands produce an appropriate cavalry battle song?

* * *

Cavalry Chow

We, all of us, know that the axiom, "An army marches on its belly," is metaphorically as sound today as it was in Napoleon's time. And cavalrymen generally agree that any supply system for cavalry must be elastic, comparable to a rubber-band; it may be stretched to its limit of elasticity, and when it finally breaks—the cavalry *lives off the country*. Yes, literally lives off the country! There is ample historical proof of this. For a comparatively recent example, in Palestine on the 25th of September, 1918, after the Turkish Front was shattered, three British cavalry divisions were launched in pursuit toward Damascus. The start was made with only the rations and forage carried by trooper and mount; after that was exhausted the cavalry divisions resorting to local procurement and foraging managed to accomplish their missions without the normal flow of supply from rear to front. They lived off the country for a considerable period of time.

So much for the metaphors and the theoretical system, but what of our *battle chow* service before the breakdown of the supply system?

While all of this so-called streamlining is going on, why not *stream line our field ration?* This item is probably of more importance to horse cavalry in the field than to any other arm of the army. There has been little if any improvement in the kitchen equipment and food service in our horse cavalry troops since the Civil War.

Because of its extreme battlefield maneuverability, it is more usual than unusual, especially near our southern frontier, for horse cavalry at messing time during active field operations, to be in rough country far removed from arterial roads of supply. The units frequently are widely separated, in areas where there is little if any drinking water or fuel.

* * *

Remember? "Breakfast before daylight, sandwich for lunch—marching and maneuvering, dusty, tired, and hungry—getting dark, wind blowing clouds of sand. Bivouac! In *enemy* territory, no lights or smoke—animals first, water in a small brackish creek, groom, feed grain—find a spot in a dry creek-bed to flop—and oh! for a pan of good hot eats! The mess sergeant forages about and after what seems an interminable delay miraculously turns out some *slumgullion* (mixed with sand and a bug or two for flavor), bread crust and a cup of lye-tasting Java. Good, too! And, what about that platoon on outpost?" Remember? Oh, well, *the cavalry can take it.* To be sure! But that is not the point!

* * *

Since those Civil War days, great advancement has been made in canning food. It obviously would be an improvement in efficiency and more sanitary to provide horse cavalry, when in campaign, with five gallon drums, hermetically sealed, containing *prepared,* edible slum, stew, coffee, bread, etc. *ready to serve;* instead of all of those miscellaneous small cans and packages that are so hard to pack, prepare contents without suitable water and fuel, and serve. One could go on and on with this discussion and enumerate the infinite number of advantages such a system would provide. How simple it would be upon reaching bivouac in the desert to heat a container, using solidified alcohol or other smokeless heat-producing element, and let them "come and get it." How simple to send a drum or two containing a prepared meal and a can of "heat" to that platoon on outpost—or to supply prepared rations to isolated units by airplane or autogiro from a central plant.

Your CAVALRY JOURNAL is interested in publishing constructive discussions of this and similar subjects relative to improving cavalry supply during battle. *Spark up, cavalrymen!*

Deadline, next issue, March tenth.

* * *

Army Remount Service is Ahead of Schedule

The War Department announced that the Remount Service of the Quartermaster Corps of the Army, is well ahead of its schedule covering procurement, its 1941 breeding-system plans, and in the training of officers in all phases of remount work.

Twenty stallions, some of them sired by members of turfdom's "hall of fame" including some sired by Sun Beau and Man O'War, have been purchased this year and sent to Army remount stations for use in breeding.

On the procurement program, 19,000 animals already have been purchased and shipped to the three remount depots at Front Royal, Virginia; Fort Reno, Oklahoma; and Fort Robinson, Nebraska. Of this number, 7,500 have been processed and shipped to the Cavalry and Field Artillery. No further requirements are anticipated for at least three months.

High standards of flesh, health, and suitability of horses have not been relaxed, even though the program was rushed to meet the needs of the rapidly expanding Army. The general grade of the horses has been higher than in previous years. In the fiscal year of 1939, 32.2 per cent of the animals were graded "excellent." In 1940, 41.0 per cent were "excellent," while so far this year, 45.5 per cent have been in the "excellent" class.

In the time remaining before additional purchases must be made, many reserve officers will go through an intensive course to train them for duty with remount troops in the field or as replacements for Regular Army officers at depots.

The additional stallions purchased bring to more than 700 the number of horses being used in the breeding plan. They are loaned to breeders throughout the country, who must maintain and keep them in good condition. However, there is no obligation for the Remount Service to buy any of the animals produced, nor do the owners of the mares have to sell their colts to the service. Under the plan, about 12,000 foals are born each year, and approximately 75 per cent of the Army purchases are made from them. The plan has been in operation since 1921.

* * *

Editor's Mail
. . . *a spark plug*

Dear Ed:

I read the Chief's article in your November-December issue and I got a lift from it. I read again his Genghis Khan paragraph and found it good. I reflected on what I had been taught and on what I had read about the American idea of the proper employment of cavalry, and I found no conflict with the Chief's writing.

Then I turned to your editorial and found it good.

Then I rolled another smoke and projected the old imagination some months into the future: . . . Plenty of equipment on hand; basic training completed; the men are brown and hard, know their weapons and can ride; horses well conditioned and well trained; motorcycles, scout cars, and radios function; officers know their stuff, imbued with the cavalry spirit, their eyes on the horizon; morale is high. Ready for maneuvers.

Maneuvers? To what end?

Then I call up memories of the past and my heart sinks. For, though there were instances where the cavalry theory was appropriately exploited on the maneuver ground, too many times we fail to play the part for which designed.

Following are extracts from my recollections, each a maneuver experience, each at a different place.

I see cavalry tied to the roads, cooped in by fences, "off limit" land on all sides—cavalry *pretending* to maneuver, *pretending* to scatter at aerial attacks, *pretending* to seek cover, *pretending* to deploy in frontage and in depth. Value: Horse exercise and march discipline for the ranks; a sort of tactical ride for some leaders and staffs.

* * *

Cavalry tied closely to the flanks of infantry. Ignorance of the enemy setup and an apparent unwillingness to let the cavalry go places and find out things.

* * *

Blue force consists of two regiments of infantry and one regiment of cavalry. Enemy situation is nebulous, but it appears to be about time for a fight. So the Blues start their development. Was the cavalry in front, on flanks, in reserve, raiding, or enveloping? No. *All three regiments* were lined up abreast in preparation for an attack.

* * *

Two regiments of cavalry and a reconnaissance (scout car) squadron hand placed along a river line (bridges and fords available). Not allowed to advance or reconnoiter. Infantry brought alongside and sandwiched in the same line. Artillery brought up close behind. *Enemy allowed to reach opposite bank of same stream, and not until then was the cavalry unleased.* For what?—Well, I don't know the answer to that one. But it was a pitiable sight to see embarrassed cavalry moving along beside, behind, and intermixed and generally jumbled up with the doughs (and sometimes with the artillery). It might not have seemed so strange in a disorderly retreat—but this was an *advance!*

* * *

A small degree of these misadventures may have resulted from some commanders' lack of certainty as to the appropriate employment of cavalry; but it is my opinion that, in maneuvers involving combined arms, restrictions contained in the design of the maneuvers constitute the principle cause for the faulty employment of cavalry. I know, of course, that available terrain and available time are factors which the authors of maneuvers have to consider. They probably also give most consideration to the majority of troops to be served, which ordinarily does not include the cavalry. But I suspect that, notwithstanding these matters, if the authors would employ a little more imagination the commanders could more logically employ their cavalry. . . . Basically I would recommend against weakening one side in infantry and padding it up with cavalry, and then giving the side a mission which causes the commander to yearn for more doughboys. When a commander begins to yearn for doughboys, and cavalrymen are conveniently at hand—well, what's your guess? . . . Another thought (admittedly a bit cruel): Don't make a free gift to opposing commanders of so much information about each other. Let them earn it at the expense of a little horse sweat. . . . Also, if there is a sizable piece of ground on which to set the stage, don't clutter it *all* up with preconceived dispositions—leave a little elbow room for maneuvers . . . etc., etc.

Do I step out of bounds, Ed? Do I appear to be more critical than is my right? Such is not my intention.

I love and believe in the cavalry, both the hay and gas varieties. I have spent many years being taught and teaching. I think I have absorbed the doctrine and I believe in it. Ed, what I especially want to know is—when are we going to have an opportunity to practice what we preach?

So long, Ed, and a happy New Year.

C. B. Cox,
Lt. Col., Cav.

Notes From the Chief of Cavalry

Expansion of Cavalry School

In order to meet Cavalry expansion in the 1941 Military program, new courses have been introduced into the Cavalry School, and personnel, both student and instructional, have been radically increased.

During the past several years, the average student attendance at the Cavalry School has been roughly 85 officers and 150 enlisted men each year. Under current plans, there will occur a 10-fold increase in officers with 185 officers going through some course at the school every three months. For enlisted personnel, there has been an 8-fold increase; 400 men are now pursuing the several courses in every quarter. Instructional personnel is being expanded to meet these needs, and for the greater part, reserve officers are being incorporated into the faculty.

With the varied types of units to be found now in the cavalry, there is a greater need than ever for enlisted specialists. In order to meet this need, the Chief of Cavalry has introduced a motors course and communications course for enlisted personnel. These courses, aimed particularly at the mechanized elements of the cavalry, will assist considerably in furnishing men in that important sphere. But, at the same time, the necessary expansion has been made in the Horseshoers and Saddlers courses. The latter courses are considered of especial importance particularly with respect to corps reconnaissance regiments now being inducted into active service.

The following chart affords a summarized picture of the number of students in attendance at courses now being conducted at the Cavalry School:

NUMBER OF STUDENTS IN ATTENDANCE AT COURSES
THE CAVALRY SCHOOL, FORT RILEY, KANSAS

Basic Horse & Mechanized Course
December 16-March 8:

Regular Army Officers	23
Reserve Officers	21
National Guard Officers	71
	115

Motors Course
December 16-March 8:

Regular Army Officers	1
Reserve Officers	17
National Guard Officers	2
	20

Communications Course
December 16-March 8:

Regular Army Officers	3
Reserve Officers	14
National Guard Officers	2
	19

Noncommissioned Officers' Course
December 16-March 8:

Regular Army N.C.O's	63
National Guard N.C.O's	12
	75

Horseshoers' and Saddlers' Course
January 6-March 15:
Numbers and personnel furnished at the discretion of the Commandant for the units at the post of Fort Riley, Kansas.

Cavalry Replacement Center

The Cavalry Replacement Center is fast transpiring from a planning stage to one of reality. Two thousand workmen are busy on Republican Flats at Fort Riley, and late reports indicate rapid and satisfactory progress in the construction of buildings of all types; messes, barracks, stables, garages, etc.

Lieutenant Colonel Wayland B. Augur, executive officer, and Major Alexander George, plans and training officer, have been on the ground at Fort Riley for the past month and are rapidly pushing to completion all preliminary plans; training schedules, requisition for supplies, organization of personnel, and all other pertinent questions are being whipped into shape.

In the Replacement Center, there will be a total of 169 officers; 10 regular and 159 reserve. Practically the entire quota of regular officers has arrived, and they are working on details pertinent to the jobs on which they have been assigned. All reserve officers reported for duty on January 20. Under the coöperative supervision of Colonel Harry D. Chamberlin and Lieutenant Colonel John T. Cole, both 2nd Cavalry, the advance detachment of reserve officers were put through an intensive course of equitation.

According to latest War Department announcements, the first quota of selective trainees for the Cavalry Replacement Center will total approximately 5,300. As there is only one Cavalry Replacement Center, Cavalry trainees will come from every Corps Area in the country. Upon arrival, they will be assigned to one of the 28 training troops specified and will either receive basic training for horse units or mechanized units of the Cavalry. An enlisted cadre of over 900 men has been designated and will be present by February 15 for advanced preparations to receive trainees. The first group of trainees is expected at Fort Riley on or about March 15, 1941.

General Hawkins' Notes

Observations of a British Staff Officer

WE are so prone to jump to conclusions. The events of a single campaign as reported, rightly or wrongly, by various observers, military or civilian, astute or stupid, are taken as conclusive evidence that all the old forms and principles are wrong and that everything new is right and permanent. We wish to rush to new forms because they were successful, apparently, in some special case. The observations of civilian critics have too much influence on military minds. They are sometimes right, but they should be accepted with caution and only after weighing carefully all the factors which have brought success or failure in any campaign. Military critics, also, are liable to error, although they have more fundamental knowledge on which to base their conclusions. We should listen to all such criticism and try to separate the chaff from the wheat; but we should restrain our own inclinations to rush to conclusions.

There is, nevertheless, very much in the military profession with which to find fault. I believe that in the American army we are very conscious of our faults and very ready to listen to criticism, especially civilian criticism.

The recent campaign in France has illustrated many virtues in the German army and many faults in the French army. We in the American army recognize many faults in the French army that we ourselves possess; but we should not overrate the new things developed in the German army. Their chief virtue was in their understanding of the faults and weaknesses in the equipment, organization and training of their opponents, and their ability to take advantage of the special situation that thus confronted them. The Germans are apparently wise enough not to believe that the tactical methods and arms that brought them such success in Poland and France will be successful again without modification or complete change to meet the next military situation with which they may have to deal.

The principal fault with the Poles and the French, and to some degree the British, was in lack of imagination and failure to realize what the new equipment in the German army meant and how it was going to be used. Insufficient and wrong training for open warfare, and inadequate weapons to combat the new German equipment, was the result of this failure.

Discussion of Diary

In the *Saturday Evening Post* of December 7th and December 14th, 1940, there were published some extracts from the diary of a British staff officer written in France during the recent campaign. Diaries, written on the spot and at the very time of the various occurrences, are the most valuable of military records. This officer seems to have been particularly astute in his inferences and conclusions. No doubt, many officers have read this diary. Some of the entries, however, are so important to us now in building our new army that they deserve to be extracted and emphasized for study. They are here quoted in part and followed by pertinent remarks.

(1)★ *"May 10, 1940—The contrast between the real thing and the opening phase of an exercise is very forcible. In theory, the messages flow in thick and fast. Intelligence summary trumps intelligence summary. There is not a second to spare. And now the fact, the real thing in practice. There is no news of our own troops or aircraft. No messages, no intelligence summaries, no telephone."*

This confirms our own experience and shows how impractical and misleading our command post exercises are.

(2) *"May 13, 1940—The only dark feature is a threat to the French Seventh Army's left by a German mechanized column. This column is reported to be twelve miles long, closely spaced, and is now passing through Breda. The Bomber Command sees in this a useful target and is about to deal with it."*

The Bomber Command, however, did not deal with it. Nor did they even delay it. Only an extremely large bomber force could have stopped it, and the bombers were off somewhere else on their own. This not only shows the necessity for having air forces subject to command by commanding generals of ground forces, but, also, the indispensability of large cavalry forces equipped with squadrons of antitank guns. It would have been too risky to have sent motorized infantry on this mission. They would have been outflanked and their parked motor trucks probably captured.

Writing about the German break-through near Sedan:

(3) *"May 14—Not so very long ago I went right through the fortifications on this front and estimated that a well-organized and determined resistance would cost the Germans half a million casualties if they were to break through. And what has happened? The Germans have walked through five miles of fortifications in depth with a loss of probably 500 men. It appears*

———.

★Quotations numbered for convenience in summarizing.

that, as the Sedan sector was considered so strong, the most inferior of the French divisions were posted there to hold it. They were mostly Parisians and their morale was of the lowest order. When the dive bombers came down on them, they stood the noise (there were hardly any casualties) for only two hours, and then they bolted with their hands over their ears."

This shows that only well trained and well disciplined troops can be trusted in modern war. Our one year enlistment is too short. By the time a recruit is only fairly well trained and disciplined he goes out and we get no service from him. We have trained him for nothing unless he reënlists. He renders no service. He is merely trained to render service.

(4) *"May 16—While the German army is pouring through France, the bombers direct their effort on Essen. The bombing of Essen will not stop the German onrush in France. The maximum effort of the Bomber Command should be directed to concentrating on the major crossings of the Meuse and on breaking up the recklessly unorthodox formations, the close-packed columns pouring down every main road leading from east to west."*

This shows again the lack of wisdom in having a separate air force not under control of the army commander.

(5) *"May 17—The fog of war grows thicker, but nonetheless there emerges the gloomy bulk of the fact that many units of the French armies are not really fighting. The German armored divisions are too much for them. It is Poland over again."*

This loss of morale was due to lack of adequate numbers of antitank guns organized in separate battalions, and lack of training for open warfare.

(6) *"May 18—News of the sort we had expected from the first came in today in a series of messages from various sources. The French have turned on the Germans. General Giraud, for example, states, in a message just received, 'Am attacked by fifty light and fifty heavy German tanks. Am destroying them progressively.' Now, this is the language of the old days. It is characteristic of the type of officer on whom we had relied to hold up the German advance."*

This shows that with proper ideas of open warfare and reliance on guns properly used and courageously manned, the German tanks could be stopped even though the French did not have adequate numbers of antitank guns of large enough caliber. The idea that has spread over the world that mechanized forces are invincible is absurd. Proper guns properly organized is the answer to tanks. The Germans know this.

(7) *"The French tanks have been fought magnificently. The mechanized cavalry have certainly shown great dash and daring, but the heavier-armored German tanks have been too much for them, and they have been shot to pieces."*

This shows that mechanized troops cannot stop or even delay the enemy stronger mechanized forces. Only cavalry equipped with antitank guns can delay enemy mechanization long enough to enable our infantry, itself equipped with antitank guns, to establish itself in position to resist an enemy mechanized attack. Our artillery can certainly assist in repulsing enemy mechanized attacks. Our own mechanization is not very effective to stop enemy mechanization unless we have a great superiority in numbers of tanks. Without this superiority, the most effective use of our own mechanization is for the counterattack after the antitank guns of our infantry, or cavalry, have crippled the enemy tanks.

Our British officer goes on with:

(8) *"Personally, I am amazed that more heroic measures have not been taken. A few .75's shoved into every road in the path of the Panzers and to the flanks, firing point-blank, would blow them to kingdom come."*

This would have required the initiative developed only by training for open warfare. It was not possessed by an army trained only for defensive warfare in accordance with the advice of certain French soldiers and certain pseudo-experts in England.

(9) *"May 19—The Germans have taken every risk—criminally foolish risks—and they have gotten away with it. They have laid themselves open to destruction from the air in close columns; they have laid themselves open to attack from exposed flanks; they have made themselves vulnerable by allowing their mechanized units to outstrip, by far too great a distance, their main body; they have done everything that should not be done by orthodox book-trained, stereotyped soldiers, and they have made no mistake. The French General Staff has been paralyzed by this unorthodox war of movement."*

The fact is that there was nothing unorthodox, except to the French and those who followed the French doctrine, about the German war of movement. Audacity is orthodox, especially when your opponent is inert. The French army, with no cavalry except mechanized cavalry, with no antitank guns worthy of the name, and imbued only with the spirit of the defensive, was an open victim to just such audacious and vigorous attacks. The Germans knew this full well. It is a credit to their intelligence that they took advantage of these conditions. The Poles had cavalry, but it was improperly armed, and they had no antitank guns to speak of in their infantry. The French might have observed these defects, but they contented themselves with the idea that overwhelming numbers of the German army was the only reason for the Polish defeat. The French were touted as the finest army in Europe, and they were very complacent about it. They had their political troubles, but there was no excuse for their military blindness. There will be no excuse for us if we continue to imitate the German method and organization which was designed for a special situation in France and would undoubtedly be changed for new situations. The Germans did not use cavalry extensively, but they did not need to do so in the absence of French and British

cavalry and the lack of opposition to the Panzer Divisions. To the contrary, we in the Western Hemisphere will always need large forces of cavalry in addition to mechanized forces and motorized infantry and much "marching" infantry.

The British officer again comments on the wrong idea of their air forces—the same idea that prevailed at that time in our air force. His diary continues:

(10) *"May 20—This is a soldier's point of view and this is a soldier's battle, but our airmen do not, perhaps, see this phase through soldiers' eyes. To us they seem to be wasting their efforts and will be likely to lose the bases through which they operate, as a result of this inability to spare air craft for close-in coöperation with the army in this, its very desperate hour of need."*

This is just further evidence that all air forces, except the German, failed to see that their most important mission was the support of the army as long as an army was operating in the field.

(11) *"May 21—France lacks imagination. There has been no effort to mine and bomb with grenades the Panzer columns on their line of march. There have been no improvised bottle bombs wrapped in blankets that burst into flames and wrap themselves round the tank tracks. There have been no enterprise and no show of initiative by junior officers and men. They have become Maginot minded; a false sense of security has robbed them of initiative."*

Thus the Panzer divisions had little or no opposition. Nothing to test them against real resistance.

(12) *"May 22—Still no French counterattack to pierce the bulge. Precious opportunities have been thrown away. General Georges was asked point blank why the promised counterattack had not been delivered. His liaison officer spoke for him and answered that the General could not give orders so far in advance of the inclinations of the divisions. This was an eye-opener, and it is only now that it is brought home to me that the formation of soldiers' committees, regularized in the French army in 1936 by Blum's regime, have so far undermined discipline."*

Here is indeed an eye-opener to those in our country who encourage socialism.

(13) *"Our own one and only armored division was landed in France yesterday, and is to set off from Rouen to try to deal with the German tanks. They will be very unfairly matched, alas."*

Another example of the improper use of armored units when the army is on the defensive.

(14) *"The German efficiency is well illustrated by the following wireless interception—this message was sent in the clear by the Germans. It says, 'All bombers to Cambrai.' Again at 14:00 hours (2:00 P.M.) today, 'All fighters to Arras,' and at 14:10 hours we intercepted the reply; it read, 'All fighters on the way.'"*

"This record is a reflection on Allied procedure. How do we send out our messages? How do we send out our executive orders by wireless? As far as I know, it has never been in the clear. The Allies send out orders calling for immediate action, but they send them in code, and this means that by the time the message is coded by the sender and decoded by the recipient some hours will have elapsed and the fleeting-opportunity target will no longer present itself for attack. It will be too late."

Certainly, our officers with experience will sympathize with this statement.

(15) *"May 23—General Georges has just explained that three French light motorized divisions are moving north from the line of the Seine at Paris to the sea, with the intention of taking up positions on the south bank of the Somme to stop up the southern side of the bottleneck. The Belgians are detaching one or two divisions to move in on the pocket from the north and northeast. In this way it is hoped to pen in the Panzer divisions. The whole of the Allied bombers are to go in during the day and try to smash the Panzers. Our own armored division is moving onto the Somme and will go into the pocket after the aerial bombardments and clear up the mess. This is the plan, but the duty allocated to our armored division appears to me a hopeless task."*

Here again we see the idea of trapping the Panzer divisions by infantry divisions without antitank guns in any numbers and by attacking the German tanks with a single armored division which is sure to be wasted. Airplane bombing against the mechanized Panzer divisions after the latter were deployed and no longer massed on the roads could do little good. A large cavalry force with their antitank guns, and backed up by the armored British division, moving in between the Panzer divisions and the German main bodies which were well in rear, could have done something to delay the German movement, interrupt communications and give more time for other French divisions to be brought up for the attack against the German motorized and marching infantry divisions. No mechanized or other troops could do this so well; but to attack the Panzer divisions by using infantry without antitank guns was a hopeless task. There was no coöperation however, and the attempt was called off. Thus the hope of converting the situation from a defeat into a major victory for the Allies went glimmering, and with it all hope for France.

The remaining entries in the diary are very interesting but contain no tactical conclusions which might be used for the purposes of this article.

Summary

To summarize the implications of these notations:

(1) The unreality of Command Post Exercises.

(2) Necessity for cavalry to guard flanks in addition to airplanes, mechanized or motorized forces.

(3) Only well trained and disciplined troops are trust-worthy.

(4) Necessity for air force being subject to orders by commander of ground forces.

(5) Loss of morale due to lack of antitank guns and lack of training for open warfare.

(6) Good troops can improvise some defense against tanks even without adequate numbers of antitank guns.

(7) Mechanized troops cannot fight delaying actions against superior mechanized forces without total sacrifice. Only cavalry equipped with antitank squadrons can do that.

(8) Initiative is developed only by training for open warfare.

(9) The apparent reckless audacity of the Germans was justified by the situation. Nothing unorthodox about that.

(10) The real mission of air force with an army in the field is tactical coöperation.

(11) No imagination in French army. Panzer divisions had no real test.

(12) Dangers to the army of any country given to socialism.

(13) Another example of improper use of mechanized troops.

(14) Only simple and brief orders are necessary to issue to commanders who know their business. Rigid regulations against sending radio messages in the clear are foolish.

(15) Futility of attempts to attack mechanized troops without proper weapons, and necessity for cavalry in effort to cut off enemy detachments that are too far advanced without support.

* * *

Finally, all reports from the campaign in France emphasize the necessity for one supreme commander, for discipline and obedience to orders under all circumstances, and for initiative on the part of subordinate commanders of units large and small.

Initiative does not mean disobedience of orders. On the contrary it means carrying out of orders in the face of unforeseen difficulties. Faith in one's commander means not only faith in his wisdom but also the belief that, if one does his best in carrying out the spirit of his orders, any failures will be understood and excused.

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"We have accustomed ourselves to looking upon our armaments as a heavy burden, borne unwillingly, forgetting thereby that the army is the well from which our people constantly draw afresh strength, self-sacrificing spirit, and patriotism. In the hour of danger we shall have to pay in blood for what we have neglected in peace, from want of willingness to make some sacrifice.

"But we have to reckon with all these circumstances as given factors. The enmities surrounding us cannot be exercised by diplomacy. Armaments, under modern conditions, cannot be improvised at will the moment they are wanted. It seems impossible to get ahead of our rivals in matters technical. So much more, therefore, must we take care of maintaining spiritual superiority in case of war, and of making good, by will-power on the one hand, and by the skill of our operations on the other, the superiority in matériel and personnel possessed by our likely adversaries.

"The more we study the nature of the art of war, and the more fully the army is alive to what is essential in war in general, and in the conduct of modern war in particular, the more uniformly and to the point will every portion of our army coöperate in war, and the greater will be the mental and moral superiority we shall gain over our enemies."

—*On War of Today,* VON BERNHARDI.

Post Headquarters and Academic Building

RILEY IS BOOMING

By Major Albert Whipple Morse, Jr., Cavalry

INTENSE construction activity is in progress at Fort Riley. More than 8,500 men are employed by civilian contractors on six major projects, Camp Funston, the Replacement Center on Republican Flats, a hospital site at Camp Whitside, a warehouse area on Pawnee Flats, expansion of facilities on Marshall Field, and a student center for The Cavalry School at the west end of Engineer Bridge, with an ultimate capacity of 630 men.

Brigadier General Robert C. Rodgers, Commanding General of the Post of Fort Riley and Commandant of The Cavalry School, is placing all schooling and training activity on an intensified basis. Expansion of training facilities is being conducted to meet the requirements of future contingencies.

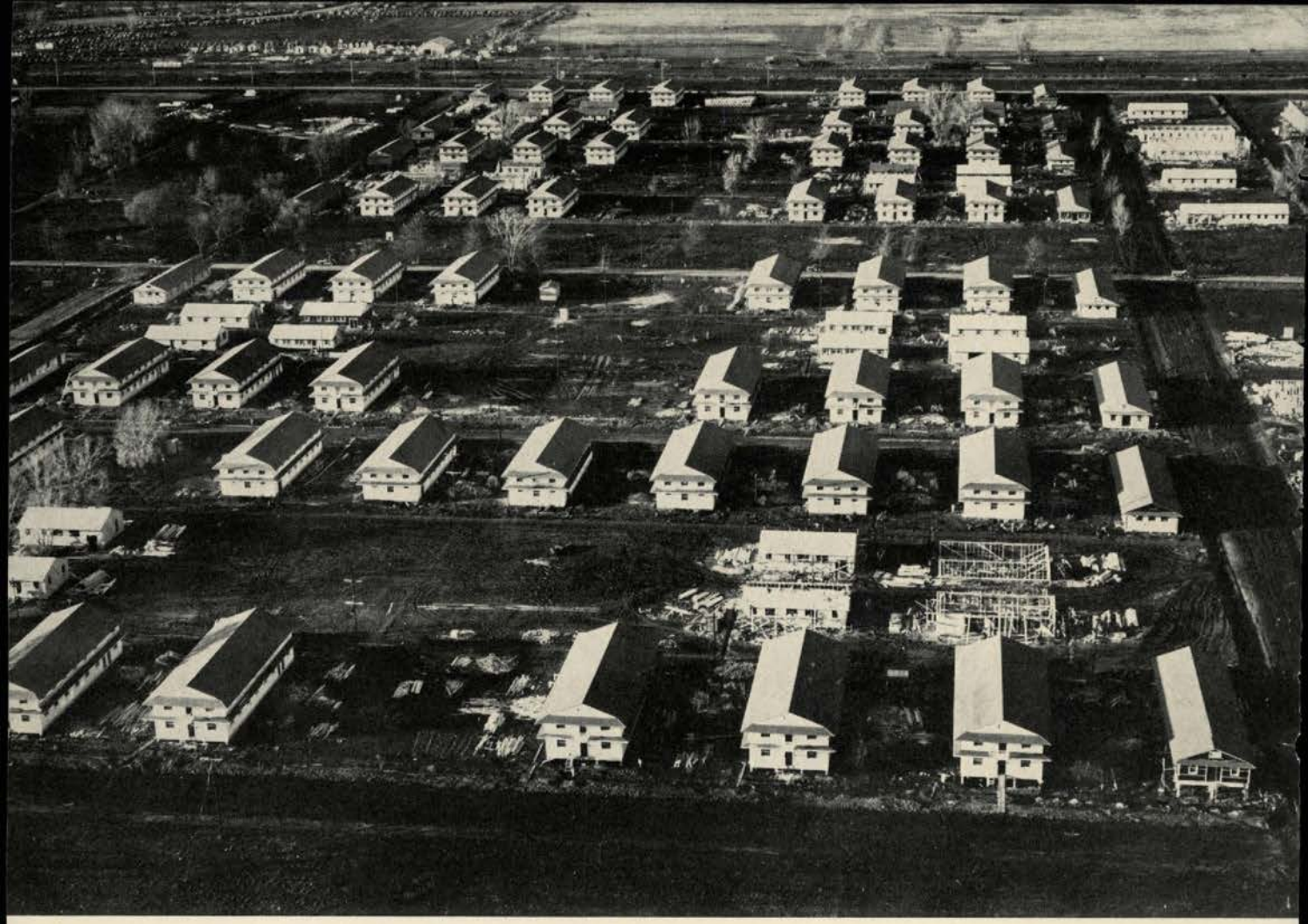
With historical significance known to all cavalry officers who have served at Fort Riley during the past two decades, Funston again meets an emergency. To quarter the 2d Cavalry Division, today there are in the flesh 120 barracks, 40 mess halls, 40 stables, and such other auxiliary buildings as recreation buildings, infirmaries, blacksmith shops, post exchanges and a theatre.

On the Republican Flats, just north of the Washington Street Bridge in Junction City, is the new Cavalry Replacement Center, where selective service men will receive their training preliminary to assignment to active units throughout the Army.

Marshall Field, occupied by the 1st Observation Squadron, Air Corps, is rapidly expanding to take care of its increased personnel. Nine new barracks are now under construction which will provide for the immediate needs of this organization.

Site of summer Reserve Officer and National Guard

Top—Cavalry Replacement Center on Republican Flats. Bottom—Hospital Area at Camp Whitside.



Portion of Camp Funston

encampments for many years, Whitside is the location of a 500-bed hospital being constructed to augment the facilities of the Fort Riley Station Hospital.

This construction is being rushed to completion by the employment of the "swing-shift" system, arranged in such a way that some part of the work is being done 24 hours a day and seven days a week. Night work consists of operating heavy machinery for grading purposes and various other jobs that can be accomplished as efficiently by dark as by daylight. A sufficient number of employees are on the payrolls to insure that none of them work more than the number of hours per week permitted by law.

* * *

Four thousand eighty horses are scheduled to arrive at Fort Riley in the period February 1st to April 15th.

* * *

When the Cavalry Replacement Center opens next month for operation, there will come into being an activity of considerable magnitude within the arm. The peak load which this Replacement Center will carry amounts to 7,000 which includes also the overhead training personnel required. Actually, there will be 6,085 trainees to go through the intensive training envisaged for this period of their year's duty with the Army.

Complete detailed preparations will have been completed prior to receipt of trainees. Advance training is being given to the overhead cadres which in turn will be taken in proportionate numbers from all regular units. The bulk of administrative and training duties will fall upon the shoulders of Reserve Officers who will be especially selected for this duty. From tentative figures, it appears that approximately 158 Reserve Officers will eventually be involved in this work.

* * *

Marshall Field, dedicated to Colonel Francis C. Marshall, Cavalry, is now the home station of a Base Detachment of the First Observation Squadron, formed on January 7th in a reorganization of the old squadron into a Base Detachment, commanded by Captain Gerry L. Mason, Air Corps, and the newly constituted First Observation Squadron, which is Headquarters and Headquarters Squadron of the 47th Group. Captain C. Thomas Mower commands the Air Corps Station at Marshall Field, and commands the First Observation Squadron.

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New Moving Target Range at the Cavalry School

F+ Riley

By Major C. D. Silverthorne, Cavalry

THE CAVALRY SCHOOL has used a gravity range for moving target firing for a number of years. This range is a narrow gauge railway track in the Morris Hill area, the center of the reservation.

It was satisfactory during the period of small classes and a relatively small garrison. However, the advent of the 37-mm. antitank gun, the increased size of the classes, the large increase in the garrison, and the need of all available space for maneuver area and combat ranges have made necessary the construction of a new moving target range. The old range will be left intact for occasional use.

Old Range

The gravity range is slow in its operation. The cars are released from a ramp at the upper end. Speed depends upon wind, condition of the wheels and bearings of the particular car, and on the temperature. On very cold mornings the thinnest grease on the wheels is so stiff that they will hardly move. Under good conditions, a speed of 30 miles per hour is obtained.

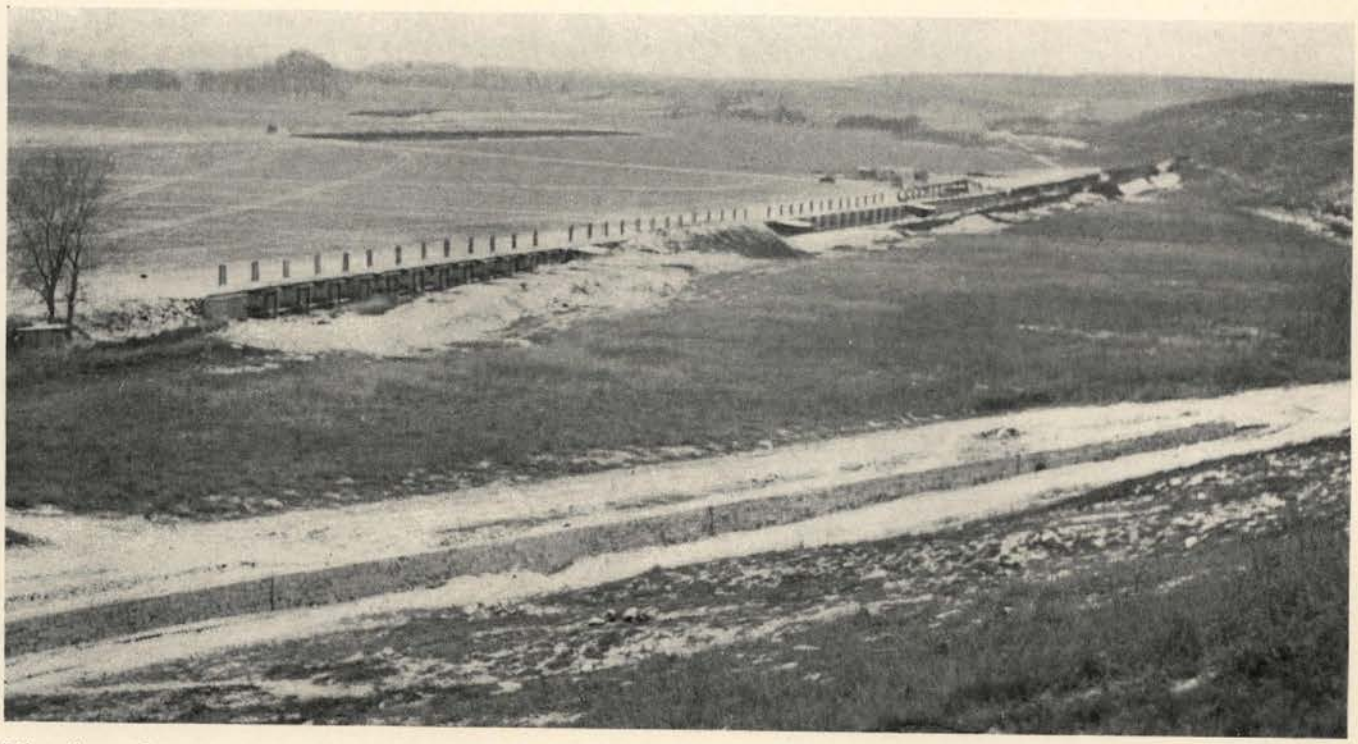
The track has to be protected by a rock wall. Very often shots striking this wall cause rocks to land on the track and throw the cars off. The 37-mm. antitank gun was fired against only three targets. It was too hard on the wall, and threw all its three cars off the track. Continued firing with this gun would ruin this particular range.

Target details are in dugouts. After the run, they must come out, mark the target, and switch the car to a sidetrack. When a car jumps the track, there may be a ten minute delay in getting it back.

The ramp holds only fourteen cars. Under good conditions, a run is made in five minutes. Allowing for normal delays, the fourteen cars are run in about one hour and thirty minutes. As it requires at least forty-five minutes to haul them back up to the ramp by truck, and push them into place by hand, it is difficult to get a double run in less than four hours. It is decidedly not a "production" range.

New Range

The new moving target range is located just east of the known distance target range, and will not interfere



View from the rear of the National Range. In foreground is the beginning of the stone wall to protect the new moving target track. On the far end of the target butts is the extension to increase the capacity of this range from 50 to 150 targets.

with the operation of that range. Due to the excellent backstop, a danger area of only two thousand yards beyond the target will be required. It is one of the few places on the reservation where it is really safe to fire the powerful antitank gun.

The range is designed for speed work, being motor driven over a straight track nearly 400 yards long. Taking out the space required for shelter, and for stopping the car, it will have a good clear run of a little over 300 yards. At a speed of 20 miles per hour, the firing time will be about 30 seconds, a very convenient time for caliber .30 and caliber .50 firing.

The target will be removed from the car at the end of the run, and a fresh one put on. The old target can be scored and pasted during the next run. Under good conditions, at least twenty runs per hour will be possible. Using two targets at a time, this will give a capacity of 40 targets per hour fired in two directions.

The track runs diagonally to the line of fire. Although the majority of firing will be done at ranges of 400 to 600 yards, firing points up to 1,100 yards are available for special work.

This range is patterned after the very successful range at Fort Knox. Although originally designed for a continuous steel cable driven by a gasoline motor, as in the Knox range, negotiations are now under way for an electrically driven car, which would greatly reduce lost time due to normal gasoline engine failures.

It is expected that the greater part of the firing will be done by Caliber .30 and Caliber .50 guns. However, the range is also designed for the antitank gun. Taking advantage of the experience with this gun on the old range, the protecting wall of the track is heavily rocked, and the rock is protected by a twelve-foot parapet of earth to avoid the shattering effect of the high power gun.

It is expected that this range will be completed in the spring of 1941.

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Former students of The Cavalry School will note two important changes from the days when they were here. First, firing goes on in all kinds of weather. Second, the advent of the M-1 Rifle returns students to the known distance range for a thorough study of this important weapon.

THE THOUSAND INCH RANGE AT THE CAVALRY SCHOOL

By Lieutenant Colonel Vennard Wilson, Cavalry

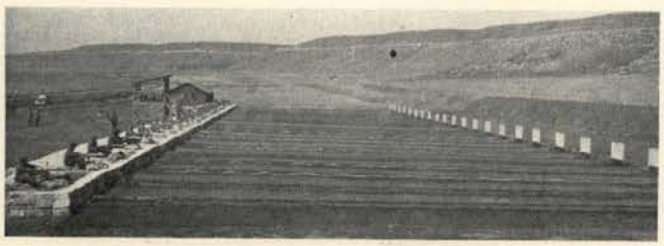
THE utilization of 1,000 inch firing facilities becomes of paramount importance in these days of THOUSAND INCH Range at The Cavalry School mass training of troops. Reservations which were entirely adequate for their garrisons last year are now crowded. Maneuver ground and firing areas are at a premium.

The 1,000 inch range has the advantage of giving a great amount of training value on a comparatively small area of ground. This article deals with the more important features of its construction and operation, and a discussion of its value and place in our scheme of gunnery training.

At The Cavalry School last year we could easily take care of the entire garrison on the twenty-four firing point range shown in the accompanying photograph. Next year, with the Academic Division, the 2d Cavalry Division, and the Cavalry Replacement Center, we shall require some 150 firing points. Those of you who know the Fort Riley Reservation and the small ranges under the steep bank north of the Pump House Road may expect to see quite a change on your return. That entire area from the Hippodrome to Republican Point, will be almost a continuous line of firing points. It will include both stationary and moving targets at 1,000 inches, and a group of firing points for dismounted pistol work.

The Construction of a 1,000 Inch Range

The 1,000″ range has the merit of being easily constructed and requires but little area, provided a suitable back-stop is available. In choosing a site for a caliber .50 range, be wary of a close back-stop unless it is given a good tryout. In hard ground, caliber .50 bullets have a tendency to bounce backward and drop disconcertingly near the firing point. It is safer to try out a number of places and observe for any return of the bullets. In certain types of ground, a distance from firing point to back-stop of as much as two hundred yards may be required.



Academic division range (24 tracks)

The Academic Division 1,000″ Range represents almost an ideal installation, but is more elaborate than would be required for troop training. It was installed primarily for Academic Division purposes, with the addition of tracks and rolling carriages for use by the troops, as will be explained later.

The school requires a highly efficient range for the reason that schedules are prepared well in advance and its firing time is very limited. Timing is by the hour, not by the halfday. Its firing point must be usable in all types of weather and must have a control tower from which the instructor can observe the entire firing line. Targets must be quickly changeable. Twenty firing points are normally used, with a few extra guns for "alibi" runs. Although the school fires qualification courses, they are primarily for instructional rather than record purposes.

The firing point was therefore built up of stone, filled in with dirt, and a light coating of fine rock applied. The back-stop is part of the butts of an old rifle range of the 1917 days.

A quick-change target is required. We normally use three target frames per firing point, and each frame will be used at least four times per three hour period. The old method of pasting targets to a frame has long since passed. Some form of clamp to hold the paper to the target is essential for speed work. Our frames are carefully made and fitted with a clamping stick along each edge. The paper target is put in place, the four sticks are placed on each edge, and the turning of wing nuts locks these in place. Another very satisfactory form is to make a hinged lid, open in the center. Closing the lid over the paper target and clamping the two lower corners will hold the paper in place.

The target house is a convenient storage place for the targets and frames, and a work place for preparing them.

Academic Division vs. Troop Training on the 1,000″ Range

The objective of the Academic Division is to get the maximum training value from a limited time. The objective of a troop commander is to get the maximum training value from his ammunition allowance and to

qualify the greatest number of so-called "experts." He can usually allot at least four full morning periods to the training of a small group, and has time for plenty of "dry-runs" and "shooting the corners," which are the essence of high qualifications. He rarely uses more than four guns at a time and, by selection of best men, can have a well qualified coach at each gun. The troopers get a great deal of high grade individual supervision.

The Academic Division fires twenty guns simultaneously, with groups of sixty students. It does not have as many as twenty high grade coaches. For its objective, there is an advantage in the "coach and pupil" method. With the HMG, the firing must be completed in two periods, and only one period is allotted to the LMG. However, its students have had some previous firing experience and their training is cumulative from one weapon to the other.

In the case of the HMG, the first period is only two hours (school hours), actually about one and a quarter hours firing time. This is devoted principally to instruction in setting the tripod, adjusting the gun to group properly, setting the adjusting plate of the sight to the zero of the barrel, and the effect of proper and improper holding. Only a small amount of manipulation firing is done in this period. This important phase (initial adjustment of the gun for firing) is often done only by the first group in troop training, as their guns are left in position as much as possible.

The second instructional period is of three hours, about two hours and fifteen minutes being firing time. The guns are partially adjusted prior to the arrival of the class, and firing is taken up where it left off in the previous period.

The first order fires by command from the control tower. The loudspeaker is a great asset in this control and permits any necessary instructions to be given individual guns. The control officer can see when the whole line is ready, and when it is clear.

The first target is fired without time limit. While the first order is on the gun, the second order is acting as coach and the third order is ready with a fresh target and ammunition for the next firing. Upon completion, and upon order from the control tower, No. 1 rushes out to remove his target frame, No. 3 brings out the fresh target, and No. 2 gets ready to fire. The change is made very rapidly.

The second target is fired against time as a "preliminary record." The third target is for "record." Targets are scored in rear of the firing point. The fourth target is fired only by those who had trouble with the guns or who did not fire satisfactorily.

These two systems are described because they represent two extremes in training methods. With the greater number of men in our expanded army and the consequent load upon our facilities, our former leisurely type of unit training must give way to mass production methods. The Academic Division system described herein is mass production of a type, although obviously not the best for recruits. It has the merit that its objective is to teach men to handle an automatic weapon rather than to concentrate on making high scores. Some intermediate between these two methods will be required.

Use of Tracks on a 1,000″ Range

When the entire line fires simultaneously, it is quicker to carry the targets out than to bring the carriages in. The tracks have their greatest value when a number of small units, firing independently and using three to six targets each, are on the range. The tracks then permit changing individual targets without holding up the entire line.

Facilities for a 1,000″ Range

The minimum facilities for a range are a fairly level firing point and some stakes driven in the ground at a distance of 83 feet 4 inches (1,000 inches) to hold the target frames. A lateral distance of 5 yards per gun is desirable, although 4 yards per gun will suffice. Guns placed closer than this will not permit adequate supervision.

The principal advantage of a built-up firing point is adequate drainage. Its height is governed by the relative elevation of the target frames. The gun should be approximately level when pointed at the center of the target frame.

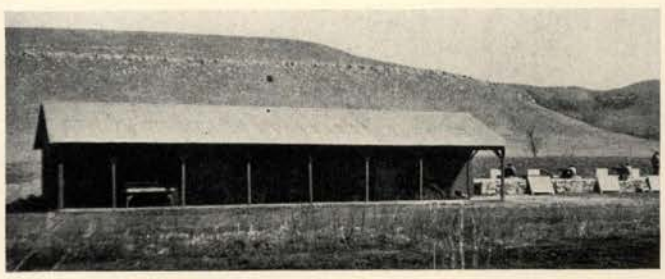
If tracks are to be used, it should be perfectly satisfactory to use one track per 2 guns, rigging the carriage to hold two target frames.

A back-stop is not essential. Its primary purpose is to limit the danger area and make terrain available for other purposes.

A direction of fire to the north is preferable for all-day work on the range, giving best average target illumination throughout the day. The old machine gunners used to prefer to fire east, working in the mornings only. This illuminated the shot holes and made it easier to adjust on the strike. Present courses emphasize laying by sight, and illumination of the front face of the target is of greater importance.

Value of 1,000 Inch Firing

Thousand inch firing has long been the realm of the machine gunner. Until about 1930, he fired a quali-



Range house

fication course involving a score at 1,000 inches and a score against field targets. Later he dropped the field targets.

The light machine gunner, who came into prominence about 1932, started with a qualification course using both the 1,000 inch and the field targets. Having a little difficulty in making good scores on his field targets, he followed the lead of the heavy machine gunner and dropped them. Commencing in the fall of 1940, his qualification course consists of two scores on the 1,000 inch range. Both light and heavy machine gunners use field firing for "instructional purposes," but not for "record."

The rifleman has always preferred the known distance range. Many years ago, he included a form of field firing known as the "skirmish run" in his qualification course, but soon abandoned it. About 1938 he became interested in 1,000 inch firing, and introduced a few rounds for instructional purposes. This was retained with the advent of the M-1 Rifle, and a still further step was the introduction of a complete qualification course to be fired at 1,000 inches in cases where other range facilities were not available. A recent change eliminates the 1,000 inch work for the rifleman.

The caliber .50 machine gunner has developed a combined qualification course, using a 1,000 inch target, some known distance firing, and field firing against both stationary and moving targets. This course has not yet been fired for "qualification." It is the most comprehensive of all, and it will be interesting to follow in its future development.

Here we have the picture of the "field target" coming into and disappearing from all qualification courses (except for the New Caliber .50, as yet not fully tried). The machine gunner is staying with his 1,000 inch work and the rifleman with his known distance firing. What is the answer?

The answer is that a good field target is not a good precision target, and cannot easily be rated for "qualification" purposes. Furthermore, the ammunition expended in field firing will pay greater dividends in training value when used for group rather than for individual training. This is especially true for the machine gunner, where the squad must act as a team for the gun. The justification for the combined course of the Caliber .50 Machine Gunner is that his is a precision weapon, not an area weapon, and his course fits his special type of work.

Thousand inch firing has come into disrepute among a number of officers. They considered that too much emphasis was placed upon it. This criticism is largely justified. The emphasis, however, is due to attaching too much importance to "expert qualifications," which is true of all our firing.

The real objective of 1,000 inch firing is to teach a thorough understanding of the idiosyncracies of the weapon, and to train men in its handling and mastery. This training is more from a mechanical standpoint. The man trained only on the 1,000 inch range is an expert manipulator, sight setter, mechanic. He knows the effect of various tripod settings, headspace adjustments, barrel packings, those parts which should be loose and those which should be tight. He is trained in the use of his hands to give him the greatest speed in manipulation and the most accurate bursts. He is fully competent to get a gun into and keep it in action. He is individually qualified and is ready to learn to fire at field targets as part of a gun crew or team.

This is the end of his "qualification," but not of his training. An additional ammunition allowance is provided for instruction in field firing. Whether or not this extra ammunition is included in his "qualification" is not half so important as is the manner in which it is expended to give the maximum training value.

The most difficult part of machine gun firing is the observation of strike. If the strike is on dusty ground and easily observed, the manipulation of the gun to bring it on the target is a simple mechanical procedure, which the gunner has already learned. When the ground is damp and the grass is high, the location of the strike is not so obvious, often impossible to see. Therefore this field training should be conducted from the standpoint of squad rather than individual training. Every man should estimate the range to the target and observe every round fired, just as though it were his individual problem. The mechanics of laying and manipulating the gun and pulling the trigger are simple when compared with the problems of range estimation, target designation, fire orders, fire control, observation and adjustment.

Unfortunately, this latter and most important phase is too often overshadowed by the importance attached to "qualifications." The system is sound; its application needs attention. Many of us would prefer to devote a greater proportion of our total ammunition allowance to field firing than is prescribed at present.

There are many reasons why the machine gunner likes the 1,000 inch range. With a limited area, and without large target details, he can reproduce the exact firing effect that he would obtain at long range. The answer is given immediately; the location of the "misses" is shown as well as the hits. The gunner can be shown why the "misses" are made; the effect of various adjustments is clearly apparent. If the firing were done at long range, the location of the stray shots would be lost.

Beyond question, 1,000 inch firing has a very valuable place in our scheme of gunner training. However, it must be regarded as a means to an end, not as an ultimate objective. It is an important phase of preliminary training, the ultimate objective of which is efficient combat firing by a well trained team.

Notes From the Cavalry Board

"The Cavalry Board invites any individual, whether or not a cavalryman, to submit for consideration constructive suggestions or ideas relating to new equipment, improvement of standard equipment, or to any problem or project under study by the Board. The Board will also welcome suggestions as to new problems that may properly be considered. Communications should be addressed to the President, Cavalry Board, Fort Riley, Kansas."

Bantam Cars:—Four ¼-ton Bantam cars have been received by the Cavalry Board for service test. These cars are designed to carry four passengers including the driver, or a pay load of six hundred pounds. Each car is equipped with four wheel drive and one car is equipped with four wheel steer. The power unit consists of a four cylinder, 45 horse power water-cooled motor, and the transmission has six speeds forward. The car has great cross-country mobility over all types of terrain and develops a fair speed on highways. Tests are being conducted to determine the pratical needs for such car in the cavalry.

New Type Message Book:—A new type message book was recently received by the Cavalry Board for service test. This book differs mainly from the present type book in that each message written has two carbon copies made without any effort by the writer. This will always assure the writer of a carbon copy of each message written. The book is slightly larger and contains less blank messages than the present book.

New Manuals:—During the past two months the Cavalry Board has reviewed a number of manuals being prepared for publication or for revision.

Other projects before the board are:

Antitank weapon (37-mm. Antitank Gun, M3).

Pull-type single shot auto-fire trigger mechanism for Browning Machine Gun, Caliber .50, M2, HB.

Chains, Tire, Kwik-on Rod.

Small bore practice in Caliber .50 Machine Gun Training.

Gun Elevator for Machine Gun, Caliber .30 Tripod Mount, M1917A1.

Rifle, U.S. Caliber .30, M1, Sectionalized.

Horseshoers' Tools.

Airplanes for Short-range Liaison.

Bullet Seal Inner Tubes.

Improvised Emergency Machine Gun Mount for Train Defense for Use Pending Development of Standard Mount.

Low Quarter Shoes.

Over-the-shoe Boots.

Kits, First-Aid, Aeronautic, Improved.

Modification of Horse Equipment (Bridles, Bits, Horse Covers, Stirups, and Stirrup Straps).

Study on Frequency Modulation versus Amplitude Modulation.

Radio Needs for Cavalry.

Textiles for Uniforms.

Looking at Both Sides:—Probably not a day goes by during these times of defense expansion that there does not appear in the press accounts of recriminations dealing with the question of equipment being obsolete or inadequate in type, needed changes, standardization, and so on. As we very well know, much of this is inevitable due to the speed of progress along some lines, especially that directly associated with mechanization. However, we cannot gainsay the fact that an unduly large percentage of the "bugs" which sooner or later are recognized in organization, doctrine, technique or types of equipment are bred and fostered by the well meaning though nevertheless unqualified individuals who jump at conclusions with little, if anything, more to justify these than their pet theories and special prejudices. We are quite prone to accept methods simply because "they have always been done that way," or, on the other hand, be quick to discard others that have been tried and tested over generations. A healthy skepticism is to be encouraged, but changes, or the introduction of new things should be preceded by a scientific laboratory test of *experience*. Many mistakes are made by premature judgment due to the lack of time or facilities for proper test. When time is an important factor short cuts are a necessary evil, but in no case should there be a lack of money, labor and zeal in an honest effort to reach a conclusion which must, above all, be practicable and realistic.

There is hardly a new project placed before the Cavalry Board which is not directly related to some previous projects, reports of which are on file. In studying these reports, it is interesting to note instances wherein, during the course of years and changes of regime, the conclusions of a number of projects relative to one piece of equipment have gone a complete cycle. We recall for instance, the case of watering tanks for cavalry units. About twenty years or so ago enthusiasm was packed behind the adoption of the canvas watering trough, M1918, in preference to larger tanks of various design. But since then *experience* has advised return to the circular tank holding about 250 gallons. A few years ago when the subject of changing the position of carrying the saber on the horse came up, a cavalry colonel, who was noted for his equanimity, remarked some-

what as follows: "Don't let it worry you, gentlemen. Since I have been in the service the saber has been hung in turn, on each of the four corners of the horse—it is now merely making another round." (Saber since discarded by our cavalry.)

There are, of course, as there must always be, aspects of our profession which can, by argument, as readily be proven to be black as white. For instance, in a recent survey of some of our best thought on the subject, we found there are about as many horsemen who advocate the use of the Pelham type of bit for general cavalry use as there are backing the bit and bridoon—and each side uses the same points in argument to support their claims! Much of the trouble lies in lack of experience in some cases, inability to analyze the effects of bits so that they attribute to the type of bit faults which originate from some other cause or which are only partially attributable to the bit—or because "it has always been done that way." Similarly there are time-honored customs of caring for horses, such as keeping blankets on after unsaddling, slapping or rubbing backs, etc., which may or may not be of value but probably never will be conclusively proven one way or the other.

It takes many years of peace-time soldiering to produce ten cents worth of experience, and some of our oldest officers and some who talk the loudest have had the least of that valuable treatment.

The plea is for more of the fruits of *experience*. The note under the heading of this section invites your suggestions, yet seldom do we receive the valuable suggestions from the personnel who are operating in the field with regiments. Many a soldier and officer gripes about some impracticable wrinkle in equipment, or in current methods, yet, though many useful bits of information might be gleaned from these sources they hesitate to sound off. This is a direct invitation to *individuals* to share in construction of more and more practicability and common sense in cavalry operations. Your confidences will not be betrayed; your ideas will be carefully weighed.

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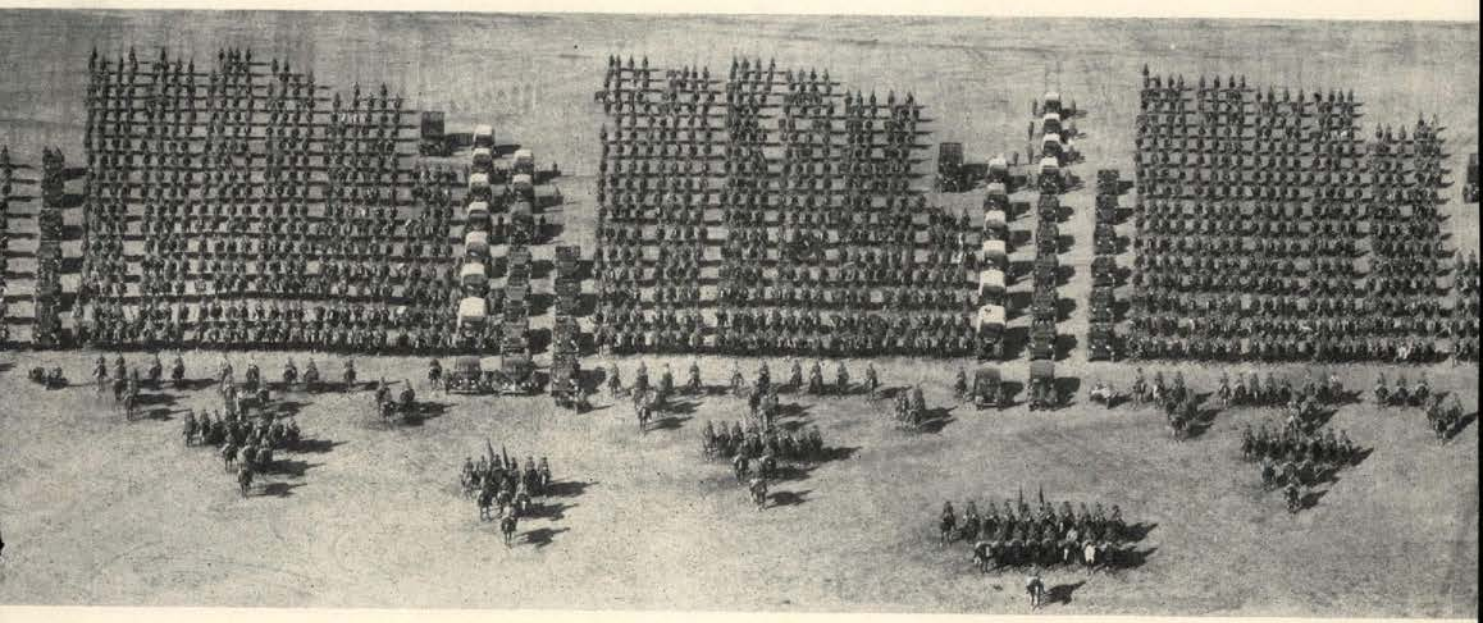
ONCE AGAIN, WE ASK

WHY NOT ACTIVATE—

15th Cavalry? 16th Cavalry? 17th Cavalry?



Foreign Reviews

Combats by German Cavalry Regiments in the East and West*

TAKEN literally, the above title is incorrect. It should really be: "Excerpts from the experiences by reconnaissance units, being integral parts of an organized Cavalry regiment"; because the regiment had been divided into several divisional reconnaissance detachments for the army in the field, and which detachments were assigned to all fronts. Nevertheless, the in peace time engrafted esprit-de-corps and intimate good fellowship sufficed to span the separation and to make the parts conscious that they were still belonging to the regiment. Such a reconnaissance unit—consisting of horsemen, bicyclists, and motorized details—constitutes the van of a division. It furnishes the division commander with information about the enemy and the terrain; on occasions it is charged to engage in combats ahead of the front. In a sense, the reconnaissance unit actually "combs" the terrain with horse, bicycle, and motorized scouting parties. Equipped with light and heavy machine guns, with grenade mortars, and Cavalry arms, it is, at times, able *per se* to break down the enemy's resistance. With this (secondary) armament, combined with its mobility, such a reconnaissance force is also well suited in protecting exposed flanks, in closing gaps, and to overtake in pursuits.

In the East

How was it in Poland? Every one of these reconnaissance units followed its own destiny. One advanced in the North through the corridor and East Prussia to Grodno. The second fought its way from Silesia and, passing Lodz, to the region between Weichsel and Bzura. The third, starting from Slovakia, thrust through to beyond the San.

From the large number of greater and smaller engagements, especially characteristic episodes are selected.

On September 16th the Polish forces in the region between Przemysl and Lemberg were to be attacked on three sides by German units. The reconnaissance party was marching about 20 kilometers ahead of its division advancing from the South toward the highway Przemysl-Lemberg. Three scout detachments are in the lead, one of them as the advance guard. The latter flashes the report that it was about to overtake, and could take by surprise, a column of Polish reserves in a village. Shortly later, two scouts brought back over 70 Polish prisoners. In a little while, the same scout detachment reports strong resistance from the next village, Dabrowa. A detachment from the mounted squadron gallops to the front. It also runs into heavy fire at the outskirts of the village. The scouting party had already entered Dabrowa. The enemy, apparently surprised, is being reënforced.

The unit commander decides upon a characteristic Cavalry attack. Supported by the Cavalry contingent with its secondary armament, frontal attack is made with two parties. The bicycle squadron and a mounted detachment, veering to the right, are thrust into the deep flank of the enemy. Lieutenant R, who had pushed farthest to the right with his mounted command, surprises a Polish ammunition column. One horseman brings back 150 prisoners. Dabrowa is in flames. Forced by the attack on two sides the Poles in the village surrender. The remainder flees into the woods to the West.

Lieutenant R with his command forming a new point, is sent forward to the next village. After reaching the objective he gallops, accompanied by one man, toward the brow of a nearby hill. From there, after carefully concealed approach, he spots two Polish batteries. One of them had its guns pointing West, the other was in the act of changing position. On instant impulse the lieutenant rides to the top of the hill. With a few pistol shots he surprises a group of officers wholly unsuspecting German Cavalry in their rear, so that they obeyed the command to lay down their arms. When the detachment reached the village shortly after, the march columns of the two captured batteries were found standing there.

The booty taken by the detachment on that day consisted of: 8 field pieces (10.5 & 15 centimeter) 28 machine guns, 520 small arms, 640 prisoners, 170 horses, 2 harnessed ammunition columns.

The action is a leaf out of the book of fame of Cavalry—sudden and energetic onset and seizure led to

. . War Experience . .

*From Deutsche Kavallerie-Zeitung.

great success over a far superior enemy. The jubilation over the feat was dimmed by the sorrow over 6 comrades, who gave their lives in the engagement at Dabrowa.

German Cavalry

After long marches interrupted by many affrays and skirmishes in the course of which it was favored on September 12th to take decisive part in closing a gap, also preventing the breaking through by the Polish Army encircled in the region surrounding Kutno, another reconnaissance party was leading the way toward the Weichsel on September 18th.

Hundreds of soldiers of the disintegrating army had surrendered to this force both in villages and even in the open country. The tail of the mounted squadron which constituted the advance guard had barely entered the hamlet Zaluskow, when the squadron was suddenly assaulted from all sides with musketry and machine gun fire. The Pole fired from the grounds of an estate, from houses and gardens, from the edges of nearby woods and low hills. While incurring losses the the lead horses found cover behind strawstacks. The fire by the Poles was so devastating it prevented the deployment of the squadron. Even the bicycle squadron had to stay impotent under the enemy's machine gun and Artillery fire.

However, although attacked from three sides, the horsemen did not surrender. One machine gun after another of the leading unit was silenced. Finally Lieutenant H personally operated a machine gun. Later he was found shot down behind the piece, its belts emptied.

The fight had lasted from early dawn until into the afternoon. Not until night did the Poles retire under heavy Artillery fire. A few comrades who had fallen into the enemy's hands, could be recovered. Many dead, including 2 officers, numerous wounded, all of them troopers of the 5th Squadron, strewed the field of battle.

Here, under most desperate circumstances, the morale of the regiment had proved itself—alone and unsupported in an open field and pitted against heavy odds, the squadron does not yield an inch, in order to enable its division to continue its advance the next day. One man after another goes down, yet the squadron stands fast. For it there is no retreat, even though the mounted impetus has been frustrated, but only bulldog and bitter tenacity, to the last cartridge, to the last man.

Thus, Zaluskow becomes the by word for the most illustrious feat by the Zieten-riders (troopers) in the Polish campaign, even though its effects were not as striking there as they were on other occasions.

In the West

In the West the horsemen, far in advance of their main positions, were required to make and maintain contact with the enemy. As on September 9th a French scouting party approached the post of such a detachment, the commander of the latter decides upon a counter stroke. After a few machine gun bursts by the Germans the enemy falls back to a small village. Without hesitation Lieutenant V. D. pursues with two men and a machine gun. At the first building he is met by machine gun fire. Cover behind the first house, a short fire duel, a dash to the next house and toward the enemy who tries to cut off the three Germans, and a few hand grenades thrown into the French position. As the dust settled a few Frenchmen were seen running back. Carefully advancing, the formerly occupied house is reached. The hand grenades had done their work. Three prisoners, two of them wounded, can be brought back. They are the first ones captured by the division.

Successful were two other undertakings by the same squadron on that same day. It so happened that the prisoners brought in then by the mounted detail belonged to the French Hussar regiment No. 3.

A few days later a scouting party from the same squadron located an enemy's outpost or observation station. 1st Lieutenant H decided on October 2nd to dislodge the enemy with a view of taking prisoners. Before dawn three shock squads fall-in equipped with machine guns and hand grenades. Unobserved they come within about 75 meters upon the enemy. The outpost, taken by surprise, was captured with hand grenades, machine guns, and pistols. Still another nest was lost by the French after a brief fight. This time, however, heavy machine gun fire broke out from positions farther back. The combat had to be broken off.

In this manner troopers took instant advantage, wherever opportunity beckoned, to carry out individual undertakings on their own initiative. Here also, they proved their mettle in attack.

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Tank Action in France

NO detailed actions of the First World War have been so minutely studied as those in which tanks took part. By the end of the war and through the two decades that followed it, the military authorities of all armies realized that the tank had brought a new and powerful means of ground combat to modern warfare. But tank action in the First World War was limited. It is true that Cambrai and Amiens each saw several hundred tanks in action. These tanks, however, were practically of trial types. The mechanical improvement that followed the war was so great that in spite of the attempt of many writers on tank tactics to "prove" their suggested doctrines from what happened in 1917-18, the more serious student of infantry-tank warfare could see that the "lessons" of tank fighting in the First World War could not be taken as definitive, but only as indicating what place the tank might have in wars of the future. The uses of tanks in China, Ethiopia, and Spain, were also limited, although here it was possible to observe more modern types. Thus we have had to wait until the Battle of France to see fast modern tanks used wholesale against any kind of serious opposition. Only now are detailed accounts of tank action becoming available to American military readers.

In the British magazine *The Tank* for October are several such accounts, two of which follow. The first, by Second Lieutenant V. D. C. York, describes an action at the bridgehead of Courcelles:

On the afternoon of June 8, 1940, the battalion (a battalion of the Royal Tank Regiment) crossed the River Seine between Courcelles and Gaillon.

At about midnight orders were received from battalion headquarters to the effect that Captain Carey-Thomas and three tanks of B Squadron would proceed to the Courcelles bridgehead and would hold it, at all costs, until it was either blown up by the French or until he was relieved. One scout car and the B Squadron liaison agent were attached to this force for the purpose of reconnaissance and to facilitate intercommunication between the French and ourselves.

It was anticipated that the Germans would attack and attempt to force a crossing at dawn on the following day (June 9) and, with this fact in view, Captain Carey-Thomas and his composite troop, consisting of one Cruiser Mark I and two Cruisers Mark III, were ordered to be in position on the bridge by 3:00 AM.

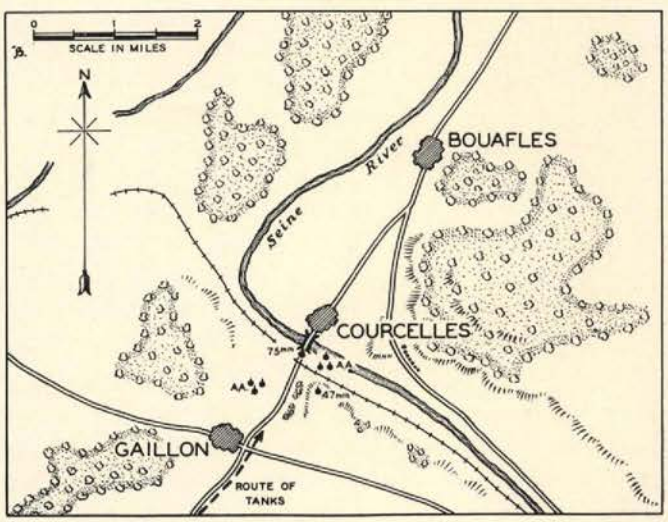
At 2:30 AM Captain Carey-Thomas ordered his force to advance, but having gone some 500 yards towards Gaillon, the A Squadron cruiser (commanded by Sergeant Urry) became a casualty owing to a mechanical breakdown.

The road from Gaillon village to the bridge itself was blocked by every conceivable type of vehicle—refugee carts, cars and lorries, French Army lorries, and French troops, who were retreating over the Seine. Our drivers, already tired out, performed the seemingly impossible as they wound in and out of this struggling, mobile mass. We arrived at the bridgehead about 2:45 AM, and after getting the tanks under cover from the air, Captain Carey-Thomas and myself went forward to "liase" with the French officer in charge of the demolition party and bridge defenses. This officer was a lieutenant in the artillery. He had under his command one 75-mm. field gun (later reinforced by another one of the same caliber), one 47-mm. AT gun, and a battery of dual purpose light AA-AT guns. The 75-mm. was dug in extremely well on the bridge itself, covering the approaches to it from the northern bank, whilst the AT gun enfiladed the bridge and its approaches from an excellent position on the right of the bridge. The AA battery was split in half—three guns being mounted immediately right of the bridge, and three more situated about three-quarters of a mile back towards Gaillon in a field on the left of the road.

The French officer asked Captain Carey-Thomas to get into a position from which he could cover the bridgehead and support the detachment there.

We made our way back to the tanks through the mass of refugees that was still pouring over the river, and Captain Carey-Thomas gave his orders. I was to take my tank, a Cruiser Mark III, forward to a line of trees some 500 yards behind the bridge on the right of the road, and to cover and support the French position. He himself was going to take up a position on the same side of the road about 400 yards behind me, from whence he could support us. Both tanks were in position at 3:00 AM. Now began a long period of waiting for a dawn attack which never materialized.

The road from Gaillon to Courcelles was almost dead straight and there was little or no cover on either side with the exception of the two belts of trees in which we had our positions. Some 400 yards in front of the forward belt of trees a railway line ran parallel to the river, and in front of this a row of houses flanked the road almost up to the river and on either side of the bridge.



It was in the last of these houses on the right that the French officer had his HQ. Between the railway line and the line of the river, flanking the road, were two deserted factory buildings. All around, on our bank, the ground was very flat and featureless and fairly boggy within 50 yards of the Seine. On the opposite bank a cluster of houses around the bridge marked Courcelles itself, while a densely wooded ridge above entirely commanded our positions. To the right of the ridge a line of about six or seven houses stretched away, ending in a lone flagpole.

The morning passed slowly and we found time to wash and shave, and also to eat some stew from the container that we had brought with us. This worked wonders, and we eventually managed to get a few moments of sleep by working a system of reliefs on the gun and in the driver's seat. The men, though nearly worn out after three days and nights on the move, were in the best of form and determined to stop Jerry.

By 1:00 o'clock our number had increased by four, for some lost and weary British soldiers had been gathered together by Captain Carey-Thomas. About this time Captain Carey-Thomas and I went forward to the bridge to find out from the French what news they had of the enemy advance. While we were talking to the lieutenant, orders arrived by hand line for him to close the bridge to all traffic. This made us much happier, for it meant we could sight our guns to defend the obstacle without the fear of having to fire into the mass of refugees should the enemy attack. But for an hour after this order the line of people was still moving along the road—faster now, for we had been bombed twice that morning, and the enemy's forward elements were reported to be only seven kilometers away.

At 3:05 PM an enemy armored car pushed its way boldly up to the bridgehead and was promptly put out of action by the "75" on the bridge. A volunteer picket of six artillerymen armed with rifles, which had been posted on the northern side of the bridge and whose task it was to spot and report any advance by forward elements, sent back a message to say that they had seen some enemy tanks advancing towards them. At 3:15 PM the bridge was blown, and this picket (their numbers now reduced to four) volunteered to remain on the German side until they could hold out no longer, when they would attempt to swim back to us across the Seine. This gallant little band was not seen again.

As soon as the bridge was blown the French officer in charge signalled us up to him. On reaching his rendezvous he told us that, as far as he knew, the Germans had established some machine-gun posts on the left and right of the bridge itself—both in Courcelles and on the wooded ridge above it. He told us also that some infantry had swum across the river and were endeavoring to work around his flanks under cover of the factory buildings. This very gallant officer, armed only with his revolver, directed operations from a most exposed position on the river bank throughout the action.

Captain Carey-Thomas made up his plan rapidly. As the enemy appeared to be established on both sides of the bridge, we were to adopt independent tactics—he would take the right and I the left.

The enemy infantry that had got across to our side of the river were by now around on each flank—they did not apparently expect us, for they were not making a great attempt to conceal themselves. Machine-gun fire from Captain Carey-Thomas's tank quickly mopped them up. While this was going on his tank had been moving off the road to the right and getting into a position by the French HQ. As the nose of the tank swung to face the bridge again Captain Carey-Thomas saw an enemy light tank in a stationary position on the bridge. Its crew were dismounted and apparently making an inspection of the damage done to the culverts, etc., of the bridge. This tank he put out of action with one round of two-pounder, machine-gunned the crew, and then destroyed the tank with another round of two-pounder. Immediately after dealing with this tank he spotted another one (medium or heavy) approaching the bridge from amongst the trees which lined the road. Three two-pounder shells hit it like a machine gun and the crew tried to get out, but were dealt with.

In the meantime my tank had advanced up the road towards the edge of the break in the bridge and, having got within 50 feet of it, had been fired on by a heavy machine gun, which appeared to be in position in a house on the left of the road across the break. The gunner silenced this with three bursts from his co-ax gun, and almost immediately afterwards another heavy machine gun opened up on the troop commander from the region of the flagpole on the ridge above. He replied to this with all three machine guns and my tank reserved until it could also bring fire to bear on this target and supported him until the machine gun sheered its recoil pin and jammed. While the loader tried to repair this and improvise a pin I ran into a field on the left of the bridge and endeavored to pick up another target. It was not long before we found one.

Moving from left to right across our front and apparently seeking cover in the trees that flanked the shore there appeared what was probably the other half of the enemy section of tanks—a medium (or heavy) and a light. The gunner took the big one first and hit it with five two-pounder shells—no one got out of it. One more two-pounder stopped the light and two more finished the job completely. Again we were fired on by a machine gun from amongst the trees. As my co-ax was out of action I could only use the quick-firing gun, and the first shell fell slightly left and minus. An anxious few minutes followed, for we got three shells in quick succession which would not allow the breech mechanism to close, owing to slight enlargement of the cartridge cases. As the loader was getting rid of these, machine-gun fire from our right rear made me look sharply around, and I saw that our scout car had come up from the rear and was supporting us with his Bren gun. The

gunner, who was a trooper in a cavalry regiment, was one of the worn-out men we had gathered around us that morning. Despite his condition he kept the gun going all the time—raking the factory building in front and mopping up the remaining Germans on our side. A good round was now in the breech of the two-pounder and this time the gunner was dead on. Three shells completely silenced the machine-gun nest and three more demolished one side of the factory wall.

The enemy had now opened up on Captain Carey-Thomas with HE mortar. He put the mortar out of action with a round of two-pounder and then his hull guns settled the matter.

We on the left were suddenly subjected to this fire as well, and in addition the Germans had got either a field gun or an infantry gun somewhere on the heights above us and were searching for us with that also. Running to and from the bridge to the far side of the field we plastered the mortar and put it out of action, but during this shoot the boggy ground caused the near-side track to run half off the sprocket, so that it was travelling around a portion of the final drive box. The driver, by very fine driving, kept the tank going throughout the whole of the rest of the action. The infantry gun was still shelling us, and so, moving very slowly and cautiously, we went back towards the road. I told the gunner to put maximum range on his drum and to rake the top of the ridge with his two-pounder. This he did, and after the seventh shot that gun stopped firing, so we put another five shells into the same place, and as he did not open again we ran straight back on to the road in time to see Captain Carey-Thomas completely smothering another heavy machine-gun post, which had opened up on him. While he was doing this I demolished the wall of a suspicious-looking house in Courcelles which the French said held an AT rifle.

After this last salvo quiet reigned everywhere, and the French officer led some of his spare numbers down to the river banks to reconnoiter. He came back to say that the enemy appeared to have withdrawn from the bridgehead completely, and that he was now going to try to reorganize his own defenses and await reinforcements. So, down to the last of our ammunition and with repairs to be carried out, we went back to the nearest of our two original positions.

At about 6:00 PM we withdrew to try and find the battalion and rejoin it.

During the action both tanks were hit by heavy machine-gun and (it is thought) AT-rifle fire, but no ill effects were observed on the armor.

The second personal experience of tank action, given below, is written from the viewpoint of a tank soldier, Trooper Bennett. The action he describes took place near the Somme River and tells vividly what happened within his own tank when it was disabled during combat:

During the advance we encountered rather stiff opposition from the top of the high ground just north of Moyenville. This ridge was practically bare of cover except for a few stacks of hay standing about and a small clump of trees at the top. Everything appeared to be working out well, and the gunner soon put a machine-gun nest out of action. On advancing farther up the slope we saw what appeared to be the roof of an ordinary car, and while the tank commander was examining it through his binoculars two AT guns opened fire at other tanks on either side of us. We advanced within about 100 yards of these two guns when a third gun opened fire at us. His first shot struck our tank in front of the radiator, severely wounding the tank commander, Second Lieutenant Ewart. Unfortunately, we knew nothing of this until he collapsed partly across the guns and between the pedestal and the hull of the tank. This jammed the turret with the guns pointing upwards. I shouted to the driver to make for cover, which he did. While we were turning, the tank was hit again by the driver's compartment, making short work of the Pyrene. After turning around another shot struck the rear suspension, but did very little damage. The driver reached the cover of one of the stacks without any further damage.

Thinking we were fairly safe behind the stack we dressed the tank commander's wound while Jerry still kept firing at the stack till finally I noticed nothing was left that could give us any cover. Then we decided to get down the hill a bit farther, gaining what cover the brow of the hill afforded. As soon as we started to move again we seemed to draw more fire, but managed by taking a zig-zag course to avoid any further damage.

As soon as we were out of sight of the enemy we stopped and got the tank commander out of the tank. This proved to be a difficult job, as he was a big man and jammed awkwardly in the turret. We managed to get him through the driver's compartment and lay him on the ground beside the tank. Very soon a French medical officer came up, but was too late, as he had just died.

As the French were supposed to be holding this position we were ordered to leave it to be recovered later. Later on these French troops withdrew to the bottom of the hill and we were told to go with them. We carried the tank commander's body to a French armored car standing near and this took it to the next village, ourselves riding on some French motorcycle combinations. There the body was transferred to one of our own light tanks, we riding on another to the rendezvous. It was there put in an English ambulance and taken away. The following day we were taken farther behind the line to join the remainder of the squadron. Our tank was later salved and brought to Aigneville.

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German Cavalry Doctrine

(EDITOR'S NOTE: During 1940, under the able guidance of Major General J. K. Herr, Chief of United States Cavalry, our cavalry arm made great strides in modern development, organization, and efficiency. Thus, as we begin the year, 1941, we pause to compare our cavalry doctrine with that of other major nations, and singularly we find that the present German Cavalry doctrine is almost an absolute parallel—as indicated by the following excerpt from *The Book of the Army* published under the direction and supervision of the German Army, by the German Government, 1940.)

* * *

The Horse Cavalry Regiment

THE introduction of motorized organizations has caused much discussion, relative to the employment of horse cavalry. The introduction of the machine gun and motors has restricted horse cavalry in theaters of operations in middle and western Europe. The cavalry problem has been solved in different countries in various ways. Connected with these solutions are the theater of operations, particularly its extent, the terrain, roadnet, the climate, the season of the year, and supply and communication possibilities. Another important consideration has been whether or not the country is primarily an industrial one and therefore, during peace times, is concerned with the development and operation of motors, or, if it is an agricultural land, which lends itself to the use and development of the horse. The progressive development of tactics, resulting from new discoveries and increasing potentialities of weapons, brought about earnest study to determine how the horse cavalry would fit into the changing conditions on the battle field. All of the new discoveries and the development of tactics have not, in any respect, changed the fact that the most important asset of the cavalry is the horse.

Germany cannot rely entirely upon horse or upon motorized cavalry because of its geographical position and the military-political situation. Modern cavalry is somewhat changed from the cavalry of the World War, and the great mass charge previously employed belongs to the past.

Since the appearance of the motors in the theaters of operations, airplanes and armored reconnaissance units have assumed the former reconnaissance missions heretofore a responsibility of the horse cavalry. These many reconnaissance missions tended to dissipate the strength of the horse cavalry. Today its maximum combat strength can be mustered for its most important rôle: employment in the battle itself. In this connection, the army cavalry participates in the battle *en masse,* whereas only small groups are now organically assigned to organizations such as infantry regiments, to perform local reconnaissance.

The army cavalry is an independent force. It consists of horse cavalry regiments, which are combined in cavalry divisions, and the latter are further organized into corps organizations consisting of from two to three such divisions. The cavalry division is, from a combat viewpoint, similar to the infantry division and inhibits similar independent and self-contained action on the battle field.

Speed, mobility and tremendous fire-power adapt the army cavalry to many missions, and render it temporarily superior to a numerically stronger, but less mobile opponent. The battle field (cross-country) mobility of the cavalry is an important asset and remains its greatest advantage over motorized units. In the West, one finds numerous gardens, fields and meadows surrounded by wire fences which increase the difficulties when cavalry units attempt cross-country movement and, on the other hand, the excellent roadnet favors motorized units. The crossing of streams, the ability to advance via small paths and unimproved trails are definite advantages. In the East, where the cross-country ability of the animal can be much better exploited and also where the roads, particularly in the spring and fall and often in the winter for long periods of time are impassable to bicycle and motorized units, horse cavalry is of great importance. Another advantage which the cavalry has over the infantry is the capacity to quickly mount on its horses, to maneuver and thereby increase the opportunity for surprising the enemy. The attack is, as a rule, launched from movement in order that the rapid approach on the enemy, with its attendant surprise, may be fully exploited. From the development, the troops launch forth directly to battle. In this manner, they seize the initiative and maintain it. Rear elements can rapidly advance into areas available for employment as the situation develops. Elements of the command are held out during the battle, to provide reconnaissance and security on the flanks. As the situation develops, they may be employed in the pursuit of the enemy or, if the withdrawal is necessary, to cover a withdrawal. The cavalry is usually employed to attack as do foot troops against the flank and rear of the enemy. Because of its mobility, it is particularly adapted to encircling maneuvers. Further, it can quickly effect a double envelopment of a withdrawing enemy or of a

less mobile one. It is better able than the infantry to engage in battle or to avoid it, and once engaged, can more easily break off the action. Pursuit and retreat are the two most important forms of maneuver in which cavalry may be profitably employed. In the pursuit, one must reckon with numerous road demolitions which delimit or restrict entirely the operations of motorized and mechanized troops. In a retreat, the battle must be quickly broken off and troops enabled to disappear entirely. The breaking off initially occurs over a broad front, and the cavalry, because of its greater cross-country mobility, can do so and assemble far to the rear, whereas infantry or motor elements are practically restricted to roads.

In the initial stages of the World War, various successful uses of the cavalry as army reserve were made. It is much better adapted than other arms, to attack isolated or distant positions. Modern army cavalry exploits, to the fullest degree, its mobility and firepower, from the moment it arrives on the battle field. It is, therefore, immediately available to attack. It cannot only attack, but thanks to its weapons, with numerous heavy infantry weapons and artillery, and to its mobility, can effectively block a very broad front. As a result of these capabilities, it has important use as army reserve. Both characteristics, the attack and the blocking of a broad front, give the commander who has cavalry as army reserve, a means which is very flexible on the battle field. The cavalry is not tied down by inflexible lines of communication to the rear. The cavalry is seldom employed in depth upon a small front, but in areas which do not restrict its mobility and movement. Exploitation of a favorable turn in the situation is important. This often requires strong enveloping forces operating on a broad front with little depth and practically no reserves. The infantry, on the other hand, must retain a strong reserve and, usually, depth in its formations to provide for any contingency. Further, once the infantry becomes engaged in combat, it must follow it through, because it is so difficult to break off hostilities, whereas the cavalry, because of greater mobility, can very quickly break off.

The cavalry can, without excessive fatigue, negotiate longer and faster marches than foot troops. It can very easily depart from the usual march rate. For these reasons, the element of surprise is more easily accomplished by cavalry. Mobility and speed do not alone create conditions which render victory more probable. Success in battle is generally determined by the proper use of weapons. The mobility of the cavalry makes it possible to move weapons quickly to unexpected points and to the more vulnerable areas of the hostile position. Mobility and speed in difficult terrain, without sacrificing battle strength, are the important means through which cavalry accomplishes surprise. Without overexertion and overemphasis on rapidity, all tactical concept of the cavalry must be based upon speed and mobility. Most of the missions assigned to the cavalry make full use of its great mobility, particularly cross-country, and its speed. The cavalry is not so restricted as the infantry in the selection of the attack direction and the base of maneuver. It frequently attacks from broad assembly areas and from different directions. The more restricted the cavalry mission is, the more its mobility and combat employment will resemble the infantry. There is not a great deal of difference between infantry and cavalry, when the horses are assembled at considerable distance from the riders, particularly if it is attacking a prepared defensive position, or engaged with a superior enemy, both of which would require narrow zones of action and employment in depth. The employment of large groups of cavalry, mounted on their horses, seldom occurs on the modern battle field. Small groups, particularly on reconnaissance and also in the pursuit, may feasibly operate on the horses. Every cavalryman must be convinced that greater success will result by utilizing the mobility of his horse and riding to battle as closely as possible rather than dismounting upon the first contact, and sacrificing his ability to outmaneuver the enemy. Further, against an enemy whose morale has been shattered, a mounted attack may enjoy unusual success.

A thorough knowledge of the infantry battle technique provides principles and a background for the conduct of cavalry engagements. The individual cavalryman fights when he is dismounted, exactly as an infantryman fights. The differences between the two occurred before the man dismounted from his horse. Both arms have the same training regulations for combat. Fire and movement are important to cavalry tactics exactly as they are to all the other arms. However, other arms, being less mobile, mobility does not play the important rôle it does in the cavalry. Cavalry units do not dismount in the initial stages of combat, if it is possible to continue forward. They ride on until the hostile fire compels them to dismount. It can so happen that the adjacent unit has already been compelled to dismount and fight while it may be possible that a particular unit can remain mounted and advance. The action of cavalry fighting exists in the rapid employment of mobility and fire. Closest coördination of these two accelerates the advance. The cavalry advances against the objective in order to bring effective fire at the proper time, and must shoot well in order that it can again ride; which means in order that it can again exploit its mobility. The formations on the battle field, when dismounted, correspond partly to those adopted on foot. The march formation is usually with two riders abreast, followed by the others in column to facilitate the use of cover and concealment both, against ground or air. In riding upon narrow passes, through woods, etc., the riders break into single column. To cross a flat open stretch of terrain quickly, or when contact with the enemy is imminent, formations are undertaken to minimize casualties. As a rule only part of the force develops initially, while the remainder is retained in closer for-

mation, awaiting developments. The cavalrymen deploy to the right and left of their leader, generally upon order of their commander. If depth and broad front are required by the situation, the deployment should be in wedge formation. One should not believe that a good horse suffices in modern cavalry. The advance over all types of terrain over various obstacles, which is today required of reconnaissance units and also marching in large organizations require great stamina and excellent riding ability on the part of the men, unless one expects to have a large number of horses and riders falling out. It is senseless to believe that the value of training for horse and man has diminished because the cavalry now actually fights dismounted.

In order to avoid hostile obstacles and fire, full use of rapidity is necessary. In battle one must leave the roads and operate rapidly over diverse terrain and in order to do this, it is essential that both horses and riders be in excellent condition and well-trained. A good rider estimates the capacity of his horse. He must conserve the strength of his animal on long marches. The most important requirement for long marches in the cavalry is a well-trained rider. It is a well-known fact that a horse properly ridden will outlast a horse of similar stamina but poorly ridden. Another advantage of thorough training both for men and animals, is that an experienced rider and trained horse do not become so tired on unusually long marches. The long ride is, however, not the most important part of the cavalry's work; the important job is the fighting which follows the long march. The fresher the dismounted cavalryman enters the battle, the better his opportunity for success. In order that the mobility of the cavalry is not too inferior to that of motorized troops, forced marches are of special value in training. The successful conduct of such marches requires careful attention to the horses. For short stretches the cavalry can march at very fast rates. The average speed of cavalry upon long marches, without including long rests, amounts to 7½ kilometers per hour (4½ miles per hour). At this rate the cavalry can, without overtaxing the animals, cover very long distances. The horse holders must also be carefully trained for they play an important rôle in exploiting the mobility of cavalry units in battle.

It is essential that cover and concealment be provided for the horses being held, while the riders are engaged in combat. In order to accomplish this, it may be necessary to dismount quite far to the rear. Inasmuch as led horses may be trotted or even galloped forward to their riders, the fact that they are well to the rear should not be a great disadvantage. The mounted regiment is organized into two half-regiments and each half-regiment consists of a staff, communications platoon and from three to four rifle troops, one heavy machine-gun troop, which also includes heavy mortars, one heavy troop which includes a platoon of pack-supported cannon, a platoon of antitank guns, an engineer platoon and a platoon of armored cars. The rifle troop consists of the headquarters group, three to four platoons and the combat trains. A platoon consists of platoon headquarters with from three to four groups, and each group is divided into three cavalry sections, each consisting of four cavalrymen. The armament of the cavalry is exactly the same as the infantry. What the infantryman requires in battle is also required by the cavalryman; rifles, bayonets, light and heavy machine-guns, infantry cannon and mortars are all exactly the same as the infantry, except that provisions are made for their transportation upon animals. The light machine-gun is carried upon a pack animal. Further, each troop includes a group of pack animals carrying ammunition. Medical supplies are also carried upon pack animals. The combat trains are drawn by four animals per vehicle. The heavy weapons are also drawn by four animals which enables them to follow closely the units they are supporting.

The communications platoon includes radio and telephone groups and has the mission of maintaining communication between the staff and the next higher echelon and with the half-regiments. Communications equipment is partly carried on animals. The most important mission of the engineers with the cavalry includes the building of crossings over obstacles which cannot be avoided, and the bridging of streams, the removal of artificial obstacles and effecting demolitions. For the construction of small crossings and for limited demolition work, the engineer company carries the required equipment on horses. Often it will not suffice and material must be obtained from nearby sources or higher units. The training of replacements to include the riders, riding instructors and the animals is a responsibility of the troop commander. The training of animals from the Army Remount Depots lasts two years and is conducted in keeping with the regulations covering same. The training period is also influenced somewhat by the age of the animal, to insure that the horse is not injured in any way. The strenuous requirements upon both the riders and the horses in the modern army suggests continuous training and conditioning of both during the entire year. *Hunting is an excellent means of training for cross-country employment.* Independent action, flexibility, mobility and speed are the characteristics of the cavalry. Field Marshal von Moltke said, "The successful operations of cavalry are dependent upon speed, however, only upon speed in recognizing and understanding the situation, speed in arriving at a decision, and finally, speed in carrying out the decision."

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Cavalry Motorcycle Troop

By Captain C. P. Bixel, 6th Cavalry

QUESTIONS have doubtless arisen in the minds of CAVALRY JOURNAL readers as to just what a motorcycle troop is and how it is employed. New as the organization is, several of them have been or are in the process of being organized in the Cavalry and allied arms. This article is intended to give a picture of the motorcycle troop as organized and employed in the 6th Cavalry (H&M), one of our two Regular Army Corps Reconnaissance regiments. The organization of other such troops is the same, their employment may and probably will vary, depending on the type of unit of which they are a part.

As a background it might be well to review sketchily the organization of the 6th Cavalry. It consists of two squadrons, a Headquarters and a Service Troop. The 1st Squadron, Horse Portée has three normal rifle troops, "A," "B," and "C." The 2nd Squadron (Mecz) has two scout car troops "E" and "F" and a motorcycle troop designated "G," the subject of our discussion. Henceforth, in this article, organizations will be referred to by their letter designations for ready identification.

Let us consider G troop from the standpoint of (1) Organization and Equipment, and (2) Tactical Employment. It must be remembered that the troop as constituted, and the 6th Cavalry as now organized have been in existence only a year, that equipment, organization and tactical doctrine have been highly experimental. Experience in the Army maneuvers and a Corps maneuver in 1940 has crystallized some points, but others are and will continue to be subject to change.

ORGANIZATION AND EQUIPMENT

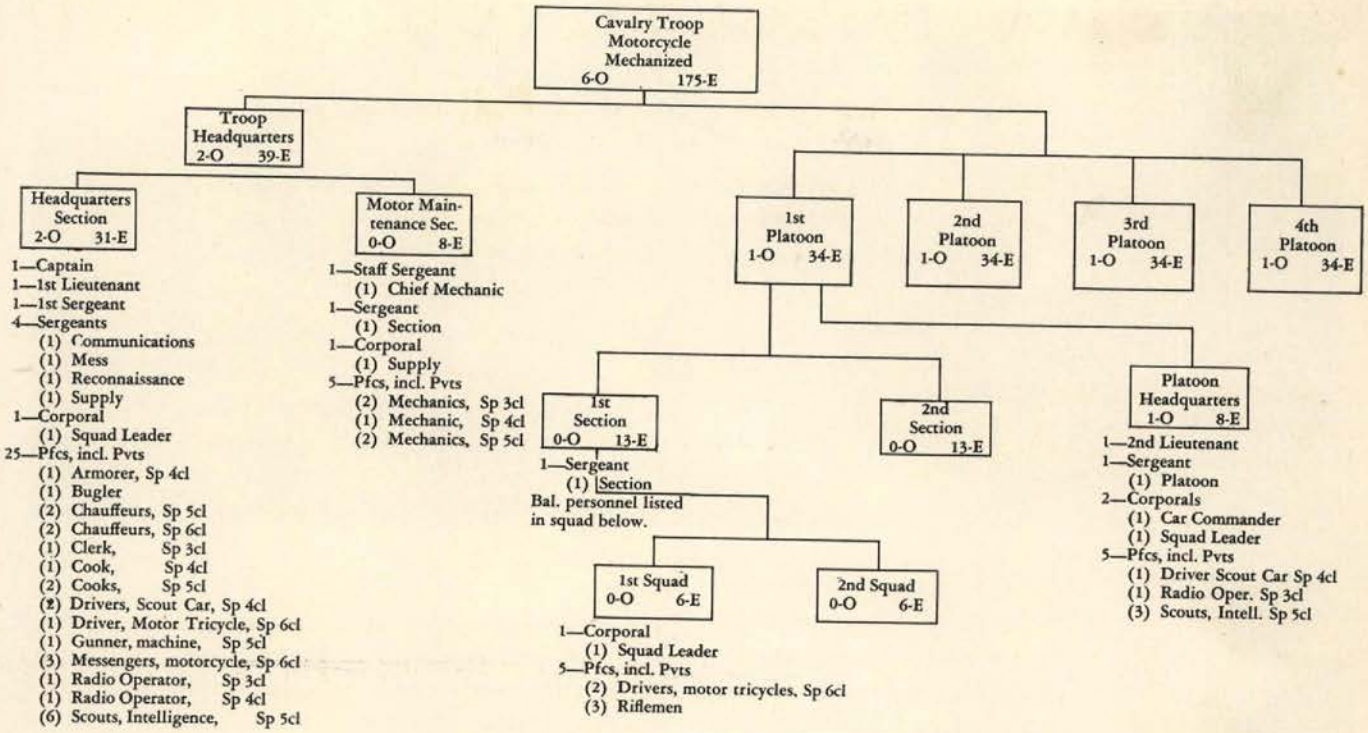
In the belief that the old Chinese maxim that "a picture is worth a thousand words" still holds, there follows a chart showing the Organization of the Motorcycle Troop down to and including the squad. The personnel of section, platoon and troop headquarters are listed according to job, rating and rank. A study of this chart will be helpful.

In amplification of what otherwise might seem cold rectangles and figures let us see what the chart indicates in terms of fighting men, vehicles, arms, communications, and supply.

The squad, the basic unit, is mounted on two side car motorcycles in lieu of motor tricycles, one man riding behind each driver on a tandem, on "buddy" seat. The section, the equivalent of an infantry squad in man-power, is commanded by a sergeant who rides a solo motorcycle. The platoon headquarters except for the scout corporal and three intelligence scouts who ride solo motorcycles, are mounted in an M3A1 type scout car.

Troop Headquarters is divided into a forward and rear echelon. The forward echelon consists of the command agencies listed in the chart, mounted in two scout cars and on thirteen motorcycles, solo and side car. The rear echelon consists of the maintenance section and the mess, supply and clerical setup normal in any troop. Four 2½ ton 6 x 6 GMC trucks, a ½ ton Command reconnaissance car and three motorcycles with side car are provided for the rear echelon.

Each officer and man in the troop is equipped with the service pistol. Solo cyclists are armed with the M-1 rifle, caliber .30 in lieu of the submachine gun, caliber .45. Drivers of the motorcycle with side car are equipped with the submachine gun, caliber .45, while other members of motorcycle squads use the M-1 rifle. All scout cars are armed with two heavy machine guns, caliber .30 in lieu of the light machine gun and in addition carry one machine gun, caliber .50 and a sub-machine gun, caliber .45. They are equipped with the SCR-245 radio. In this regiment further armament is provided by six antitank mines in each scout car and

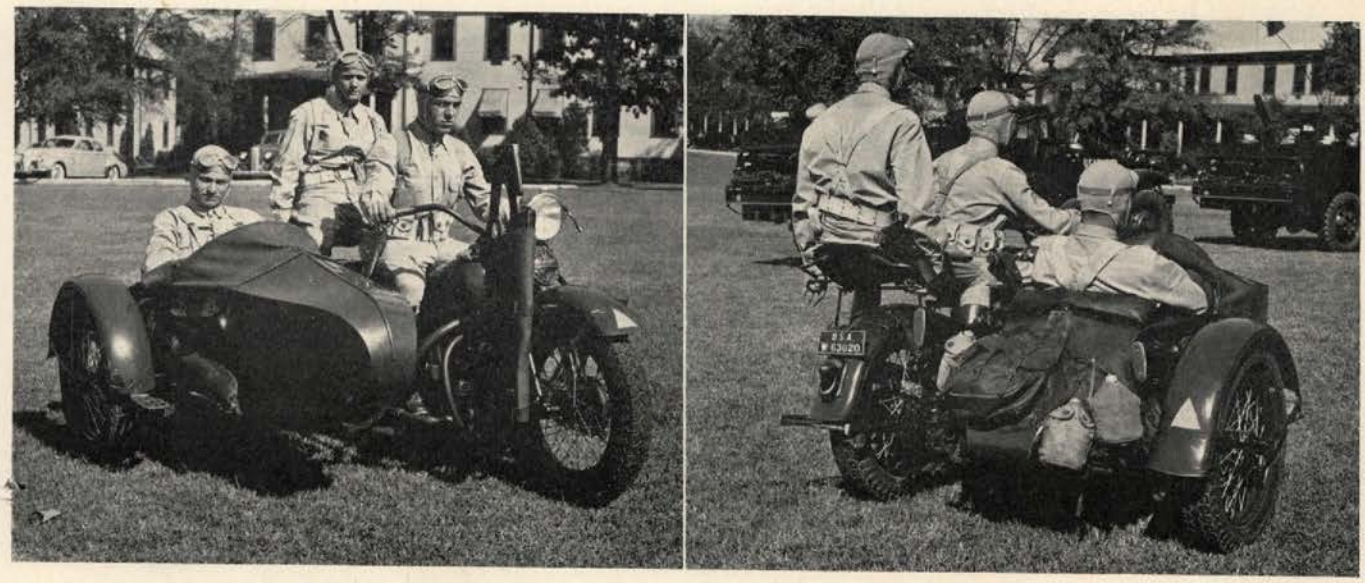


one in each side car motorcycle. At present these mines are in dummy form only. Three of the trucks carry a light machine gun while the fourth mounts a machine gun, caliber .50 for train defense.

Personal equipment of the individual soldier is carried in saddle bags and in a modified roll which are fastened to the motorcycles and carried in the scout cars by members of their crews. Troop equipment of course is carried in the cargo trucks which are assigned on the basis of two combat, one kitchen, and one maintenance, the latter being equipped with a winch in front for mobilizing stalled vehicles.

A résumé of the organizational and equipment setup within the troop gives us in brief four combat platoons, each with its own reconnaissance and communication agencies controlled by a headquarters able to reconnoiter on its own if necessary, to communicate with, supply, feed and maintain any and all of its platoons. In addition troop headquarters can communicate with higher headquarters. Normally the troop commander's radio set operates in the net of the higher unit while the executive's set controls the troop net.

Before leaving the "means" and proceeding to the "method" let us dwell for a moment on administrative marching. The normal march formation is troop headquarters preceded by the section of intelligence scouts who act as traffic guards, followed by platoons in column in the order prescribed, the rear being brought up by the troop maintenance section, its truck, side cars and crew. Other trucks march normally under squad-



One-half squad Troop G, 6th Cavalry fully equipped. (Front and rear view)

One Platoon of Troop G, 6th Cavalry, on the road

ron or regimental control. Command cars lead their platoon, soloists ride in pairs where practicable, (in echelon where not), side cars move in column. Distances are normally prescribed by higher authority, but it is practicable to march with less than 100 yards between platoons and a bare minimum between cycles depending on the speed and the skill of the drivers. Drivers become skillful at road marching in a remarkably short time and, to digress for a moment, it is a spectacular sight to see a complete motorcycle troop rolling along at forty to forty-five miles an hour as uniform as a pattern on the highway.

Surveillance of the column is obtained by having the motor officer ride at the tail of the column and by the other officers supervising the march from side cars or solo motorcycles.

Halts are made at the end of the first hour and thereafter every two hours, except that a gas halt must be made about every 90 miles due to the limited cruising range of the motorcycles.

With skilled drivers the troop can cruise by itself on a paved highway at 50 miles per hour for limited periods, but as a part of a larger unit 35 miles per hour is definitely a better speed for all concerned.

Tactical Employment

The use made of G Troop depends directly on the use made of the regiment. This regiment's most likely missions are Reconnaissance and Delaying Action, hence this discussion of the troop's employment will center around those two forms of action.

Whatever the mission, let me emphasize here that G Troop should *not* be broken up into small groups attached to other units for use as motorcycle messengers, tempting though such employment may at times appear, especially when the radio goes out and regular messenger service appears to have slowed down.

The motorcycle troop is a combat unit, a fast moving reserve of fire power capable of being moved great distances in an incredibly short time given a favorable road net, and possessed of limited cross country mobility in dry weather on its vehicles. It is the only unit in the mechanized squadron capable of carrying on dismounted combat, without which serious resistance cannot be overcome. It is in effect a horse troop mounted on motorcycles instead of horses, and possesses a great many of its capabilities when dismounted.

The regiment has several options in the execution of a reconnaissance mission for an advancing Corps. Two methods stand out as most feasible. One employs the scout car troops for distant reconnaissance and holds the horse squadron portée in rear moving along the main axis until contact calls for detailed reconnaissance, when it is unloaded and operates in the zone as horse cavalry. The other may be called the "team" method and employs scout car—norse portée teams of varying sizes to gain the required information. What of the motorcycle troop?

Consider the first method. Here G Troop or the bulk of it should be held by the Regimental Commander along the axis with the Command Group until information indicates that scout cars are held up. At this point the troop or part of it should be dispatched to reduce the resistance if required or to punch through a soft spot and relieve the pressure on the beleaguered cars. In most cases this can be done best by dismounted action at a critical point, for which action G Troop is eminently suited.

A variant of this method is to attach a platoon of motorcycles to one or both of the reconnaissance troops retaining a scout car platoon or two for the reserve. This has the advantage of giving the reconnaissance troop some dismounted combat power but it also has the disadvantage of reducing its reconnaissance capabilities by the scout car platoon detached. It is believed that the first employment is preferable as a rule.

Now consider the second or "team" method. Here again G Troop should be the Regimental Commander's

mobile reserve ready to fly to the assistance of a detachment held up. In this form of reconnaissance, however, a motorcycle platoon may prove quite useful to a combined detachment for clearing up local resistance, for maintaining liaison between the scout cars and the portée element of the detachment, and for protecting the horse unit while portée and before it detrucks.

As a reconnaissance agency in itself the motorcycle troop is not believed to be as efficacious as other organizations of the regiment and can be better employed on the missions for which its means suit it. However the use of motorcycles in limited numbers for reconnaissance of trails and secondary roads over which scout cars can not go due to the narrowness of the trails or weakness of bridges and culverts has some merit.

A regimental mission of delay, opens up a wide field for the employment of the motorcycle troop. With antitank guns attached it is an effective unit for the establishment of road blocks. For delay in successive position it can remain on any given position until the last and still get away provided terrain is suitable for the operation of its vehicles. But here again acting under the Regimental Commander as a harassing force against the hostile flanks and rear while other units delay the heads of columns it is believed most valuable. Its great mobility and considerable fire power make it a valuable force if employed in this manner—never forgetting the necessity for reasonably good roads to make this mobility practicable.

For security missions the troop has reasonable capabilities. Its flexibility makes it suitable for furnishing the advance guard, rear guard or flank guard for the regiment when the occasion requires it. On such duty it operates on the same principle as a horse unit performing similar functions for a horse regiment. On terrain where the road net permits the troop is ideal for outpost duty due principally to its road speed, man and fire power, thus saving horse flesh and the more cumbersome mechanized equipment of the regiment.

Summary

To sum up—the motorcycle troop, unique in our army, has been tested for a year. Some of its equipment appears to be adequate, some inadequate. It is basically a body of fire power—fast moving on roads—approaching the mobility of the foot soldier cross country. It replaces nothing, but with possible changes in equipment seems destined to take its own place in *The Combat Team*.

Editor's Note: It is highly probable that the Quarter-ton Trucks now under field service tests soon will replace the tricycle (and motorcycle with side car) in the Motorcycle Troop.

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Motor Equipment of Motorcycle Troop

2½-Ton Cargo Truck; ½-Ton Pick-Up Truck; Scout Car; Motorcycle with Sidecar; and Motorcycle Solo.

"Air Power" for Horse-Mechanized Cavalry

By Lieutenant Elwin T. Knight, 6th Cavalry

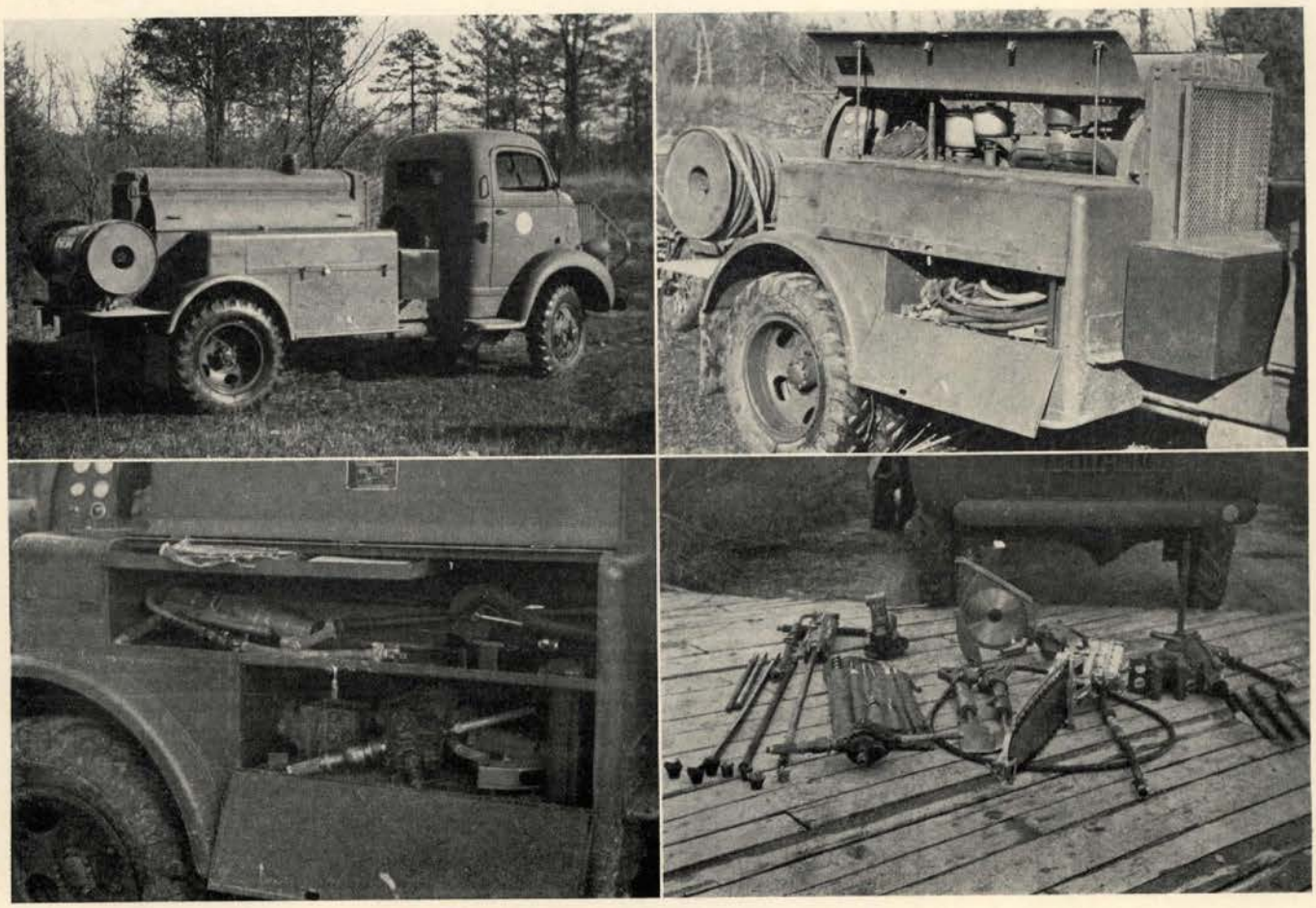
THE Cavalry, too, is developing its air power; not aerial warfare, but to speed the work of its Pioneer and Demolition platoons. When the new Horse-Mechanized regiments were formed, the old P & D Section blossomed into a full platoon, but with the same old equipment. Gradually this equipment has been modernized to fit the new tempo and requirements of the regiments.

In May of 1940 the P & D Platoon of the Sixth Cavalry took over from an Engineer Battalion an air compressor mounted on a two wheel, narrow tread trailer. This compressor was satisfactory except for two serious drawbacks. Firstly, the center of gravity was considerably above the axle, and, with the narrow tread, gave the trailer a tendency to try to slide along on its back or side rather than on its two wheels. This characteristic illustrated itself literally within two hours after the compressor had been assigned to the Platoon. Secondly, the weight of the compressor was so great that it ruined the rear differential of the two scout cars which alternated in pulling it.

In October of 1940 this old air compressor was taken in and a new one, more suited to the needs of the regiment, was received. This new compressor is a complete unit in itself. Mounted on a Ford cab-over-engine chasis, modified by Marmon-Harrington for four wheel drive and auxiliary transmission, it can go anywhere the scout cars can go.

General Description

The compressor itself is a Sullivan Portable. Powered by a Buda four cylinder engine, with a separate two-



The air compressor and tools

Methods of use

cylinder air pump, the compression cylinders build up and maintain an air pressure in the storage tank of 100 lbs. per square inch. This pressure is maintained automatically with no attention from the operator. The motor automatically speeds up to run the compression cylinders when pressure drops off, and idles down when proper pressure is reached. Safety blow-off valves are set for 110 lbs. per sq. in. The compressor is equipped with a clutch to engage or disengage the air compression cylinders so that the motor may be warmed up properly before the load is thrown in, or so that the load may be taken from the motor if the tools are not in continuous use. There are two reels of hose connected with the storage tank, from which two separate tools may be worked at the same time.

The working tools of the compressor consist of a buster, digger, driller, borer, circular saw, and a large chain saw. These are to be described separately in the following paragraphs.

The buster is a heavy weight breaker, with tools to break concrete, hard pan, and frozen ground. These tools come in various shapes and sizes, such as moil points, chisels, asphalt cutters, etc. In addition there is an attachment to convert this buster into a light weight

pile driver for driving 2″, 2½″, or 3″ thick wood piling. The force of the buster is applied straight down with no rotation.

The digger is a light weight spade used for loosening clay and other hard earth. It is also used to smooth or slope the sides of ditches, trenches, etc. The power of the digger is also applied straight down.

The driller, probably the most useful of all the tools for use on a demolition project, is used for drilling in concrete, masonry, rock, and other such surfaces, for holes in which to place explosive charges. The driller is a two speed, dry type. The power impulse is downward and to the left. That is to say, the drill rotates as it pounds down. In the center of the shank and bit there is an air hole for air blasting the loosened rock fragments from the hole. Shanks come in lengths from two feet to eight feet. Drills come in various sizes up to include one that bores a hole large enough to take a block of TNT without the cover removed. These drills screw onto the shank and are easily detachable. The largest drill will bore a hole through limestone rock at the rate of ½ foot per minute.

The borer is simply a power wood auger, with clockwise boring action and reverse. Bits come in sizes from ¾ inches to 2 inches in diameter and from 12 inches to 30 inches in length. By substituting steel bits this auger will drill through steel. Used primarily for boring holes for internal charges of explosives in trees and wooden bridge pilings, it also may be used to bore holes for pegs in light structures when spikes or nails are not available.

The circular saw is capable of cutting through 4 inch planks. If the plank is too heavy to move conveniently the saw may be "moved through" it. For larger boards and for splitting logs much too large for the saw, a groove 4 inches deep may be made down the length of the plank or log and by using axes as wedges the plank or log may be split fairly evenly.

The large chain saw is 2½ feet long and is capable of cutting down almost any size tree or through any plank. If the tree is too large for it to go straight down, the saw is simply "walked around" the tree until only a small center section remains uncut. The tree may also be "notched" with the saw to control the direction in which it falls.

Wooden bridges may be quickly removed by sawing through stringers and supports. Concrete bridges on log pilings may be destroyed by cutting out the piling supports.

The compressor is so compact, so simple of operation, and its tools so light, that its crew of two men can easily keep two tools working simultaneously. In view of the fact that compression may be built up and maintained while the vehicle is in motion no time is wasted after the project is reached. Use of air power means more work, in less time, and with less labor.

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Scout Cars, ever ready for low flying aircraft

Cavalry in the Army Maneuvers

By Captain Henry M. Zeller, 14th Cavalry

THE experience gained by the 1st Squadron, 14th Cavalry, on the Second Army Maneuvers at Camp McCoy, Wisconsin, last August, was interesting particularly in that it taught us considerable concerning the uses for, and the vicissitudes of, a small cavalry unit attached to larger bodies of troops. The squadron, for the period of the maneuvers, was assigned to the Corps Troops of the VI Corps but in practice was attached to different units of the corps for various combat missions.

The Squadron left Fort Sheridan by rail on August 6, 1940, arriving at Camp McCoy the same day. The period from August 6 to August 18 was devoted to unit training, and the period August 19 to August 26 to three maneuver exercises. We remained at Camp McCoy while the National Guard units were being cleared for their home stations, and then we, ourselves, left for Fort Sheridan on September 3, by rail.

Conclusions

The maneuvers didn't bring out anything entirely new but they did give us several valuable object lessons. In the first place, as to the commander of a cavalry unit, particularly of a small one, he must be forward where he is personally in touch with the situation as it develops. He should personally inspect the disposition of his troops, when there is time for this, such as in the occupation of critical terrain when the enemy is not in immediate contact. He cannot expend valuable time in composing and issuing five paragraph field orders; his orders must be oral or even fragmentary if a situation develops rapidly. Wherever contact with the enemy is imminent, his subordinate commanders should be assembled near him where they become acquainted progressively with the situation, and so that the issuance of orders becomes a matter merely of seconds.

A small body of cavalry attached to an infantry division or larger unit must constantly remember that it is tied to the mission of the unit to which it is attached. It cannot go off on any tangents of its own, but must, often unromantically, avoid involvements at variance with its assigned mission. It must constantly keep the headquarters of the unit to which it is attached informed of its location and local situation. It must do this both for the convenience of the higher headquarters, and also to remind the latter that it is still present for duty, as it is quite possible that a green staff under the stress of battle will completely forget small attached units.

Common sense is demanded in the assignment of missions to cavalry. A small cavalry unit should not be asked, for instance, to seize critical terrain over a wide front, hold it over a considerable period involving loss of sleep for most of the command, and then to go to a further mission involving strenuous effort. If attached cavalry is expected to exert itself prior to battle, and if it is desired to use this cavalry to exploit victory or to cover defeat, then the cavalry should get a rest during battle. Men and horses will stand just so much, and although in case of emergency cavalry may of course be given missions where it will expend itself, this should never be allowed to happen just through ignorance and poor planning.

As to communication, we found that there is no true substitute for the messenger, particularly if there is motor transportation available for him. There is apparently something about the country at McCoy which interferes with the operation of radio equipment, and this method of communication proved unsatisfactory throughout the maneuvers. The squadron kept an officer busy constantly maintaining liaison with higher headquarters; and communication with our scout cars was all by motorcycle.

For the period of the maneuvers the squadron borrowed three command cars from the 5th Division. One of these was used as a squadron command and messenger car. This car and a sidecar motorcycle we already had, proved themselves invaluable for communications purposes, both within the squadron and to the rear. The other two borrowed command cars were used to reenforce the scout car section already attached to the squadron from Headquarters Troop, 14th Cavalry, thus forming a platoon of four cars and a solo motorcycle. This platoon proved a great help, for although the scout cars cannot go everywhere across country, they can certainly reconnoiter the roads, and where the squadron was spread over a wide front they were able to cover the gaps and flanks, thus saving the horses which otherwise must have been used on patrols.

During the second exercise we had a motorized infantry company attached to us. This proved a valuable reënforcement, and brought out the fact that where there are any roads at all, motorized infantry often can be used to build up cavalry strength where the situation requires it, for although it does not possess cavalry cross-country mobility, it has plenty of road speed, and can be used for outpost duty, to execute holding attacks, etc. It is not a substitute for cavalry by any means, but it can be very useful to a cavalry commander.

Traffic Control For Administrative Marches

By Captain Kelso G. Clow, 6th Cavalry

Traffic control chief

AMONG the several problems that have been presented to the Sixth Cavalry (Horse and Mechanized), is that of traffic control for the regimental column during administrative marches. The solution to the problem was approached by considering two fundamental questions:

(1) What means are available?

(2) What method shall we adopt?

Consider first the means: We have vehicles; and we have personnel to man the vehicles. The high degree of road mobility and maneuverability of the motorcycle make that vehicle the uncontested choice over the reconnaissance truck, the scout car, the cargo truck and the semi-trailer. The traffic control group, which precedes the regimental column, then, is made up of six solo motorcycles and one motorcycle with side car. The six solo motorcyclists include the four intelligence scouts of the regimental staff section and two solo messengers drafted from the tactical platoons of Headquarters Troop. The motorcycle with side car is driven by the messenger assigned to the staff section. His side car passenger is the traffic control chief. Under the present Tables of Organization, a sergeant bugler is provided, and it has been the practice in the Sixth Cavalry to use him as traffic control chief. Under the new Tables of Organization, no sergeant bugler is provided; further, there is no separate intelligence sergeant provided. It is believed that the new tables should be modified to include an intelligence sergeant (third grade), whose normal duties would be traffic control chief on the march, assistant to the operations sergeant during tactical situations and section sergeant for the staff section.

Besides vehicles and personnel which are closely related because of the individualistic character of the vehicles involved, our means should be considered from the point of view of communications. The three means that have the broadest application are: word of mouth, motorcycle messenger, and radio. Word of mouth is used before the march starts and at halts, when the Regimental Commander gives instructions to the traffic control chief. Motorcycle messengers are used en route, from traffic control group back to the Regimental Commander's car and vice versa. The third means, radio, has not been as satisfactory as the other two. An SCR-195 radio set ("Walkie-Talkie"), was carried in the traffic control chief's side car for the purpose of maintaining voice radio contact with the Regimental Commander by means of another like set installed in the latter's scout car. The results have been erratic—sometimes good, sometimes bad; this particular set is not to be depended upon for inter-vehicular communication. It is believed that the "Type IV-A" radio set, now under development for the Armored Force, would be a suitable and acceptable set for the purpose.

Other means of communication, of limited application, have been used: pre-arranged siren and horn signals and arm signals from front to rear in emergencies.

Now, let us consider the methods.

A few minutes before the hour of departure, the traffic control chief reports to the Regimental Commander, who issues instructions as to the route to be followed, rate of march, halts to be made, destination and any other special instructions he desires. The traffic control chief marks the route on his own map and makes appropriate notes. He then assembles his motorcyclists and transmits the information he has just received.

The traffic control chief rides at the head of the traffic control group, which precedes the head of the regimental column (the Regimental Commander's scout car) by at least three hundred yards. This distance may vary up to three miles, in order to allow sufficient time interval for the chief to confer with the police of cities and towns on the route, to warn them of the approach of the regiment, and to make satisfactory cooperative arrangements with the police with a view to controlling traffic during the passage of the regiment. As the traffic control group moves along, the chief spots solo motorcyclists at the various critical points on the route of march, to protect civilian traffic and to insure the safe passage of the regimental column. Critical points include intersections, narrow bridges and defiles, sharp

corners, railroad crossings, underpasses, road construction and sections of road requiring alternate one-way traffic. The motorcyclist traffic guards posted at critical points also act as route markers for the vehicles in the main column.

A motorcyclist posted at a critical point remains there only until the tail of Headquarters Troop (which is the leading march unit) has cleared his position; he then mounts his vehicle and regains his place in advance of the head of the column as rapidly as he can safely. However, his departure from a critical point is practically coincident with the arrival of the motorcycle traffic control group of the march unit (the troop) next in column; a solo motorcyclist from this group takes his place at the critical point. This system is carried on throughout the column: a motorcyclist posted at a critical point leaves it as soon as the tail of his own troop passes it, and his place is taken by a member of the next succeeding traffic control group.

The above described method of operation has been adopted as standard procedure in the Sixth Cavalry, after many weeks and hundreds of miles of experience. It is a simple method for executing an important job. Men selected for traffic control duty must be alert and careful but bold motorcyclists, endowed with initiative, force, an understanding of why a critical point is critical, and an appreciation of the responsibility of his job.

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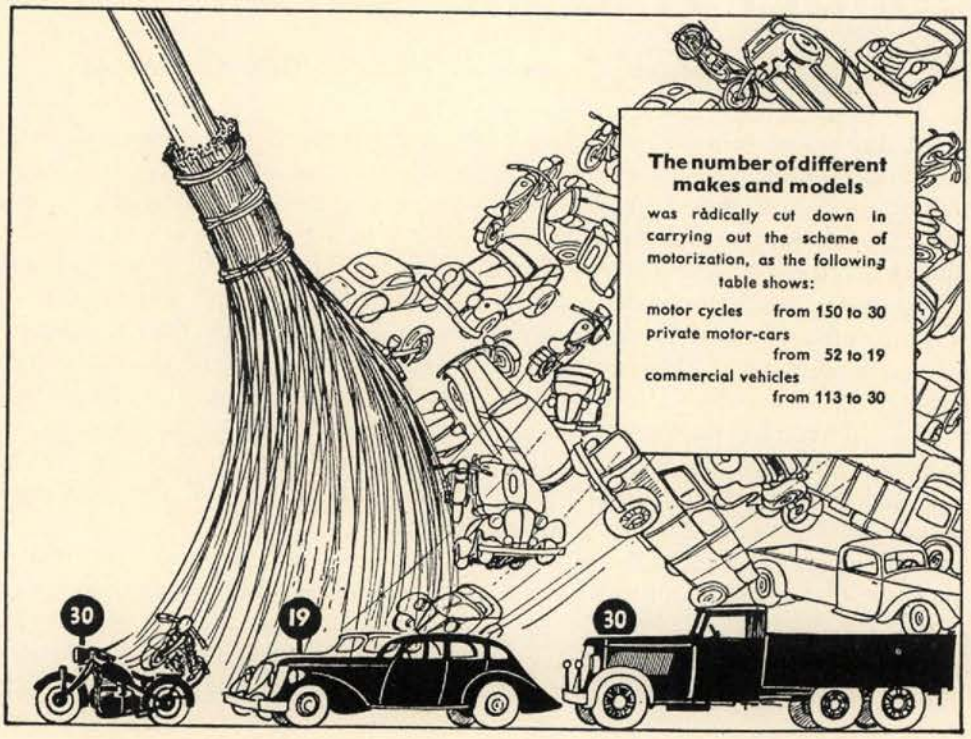
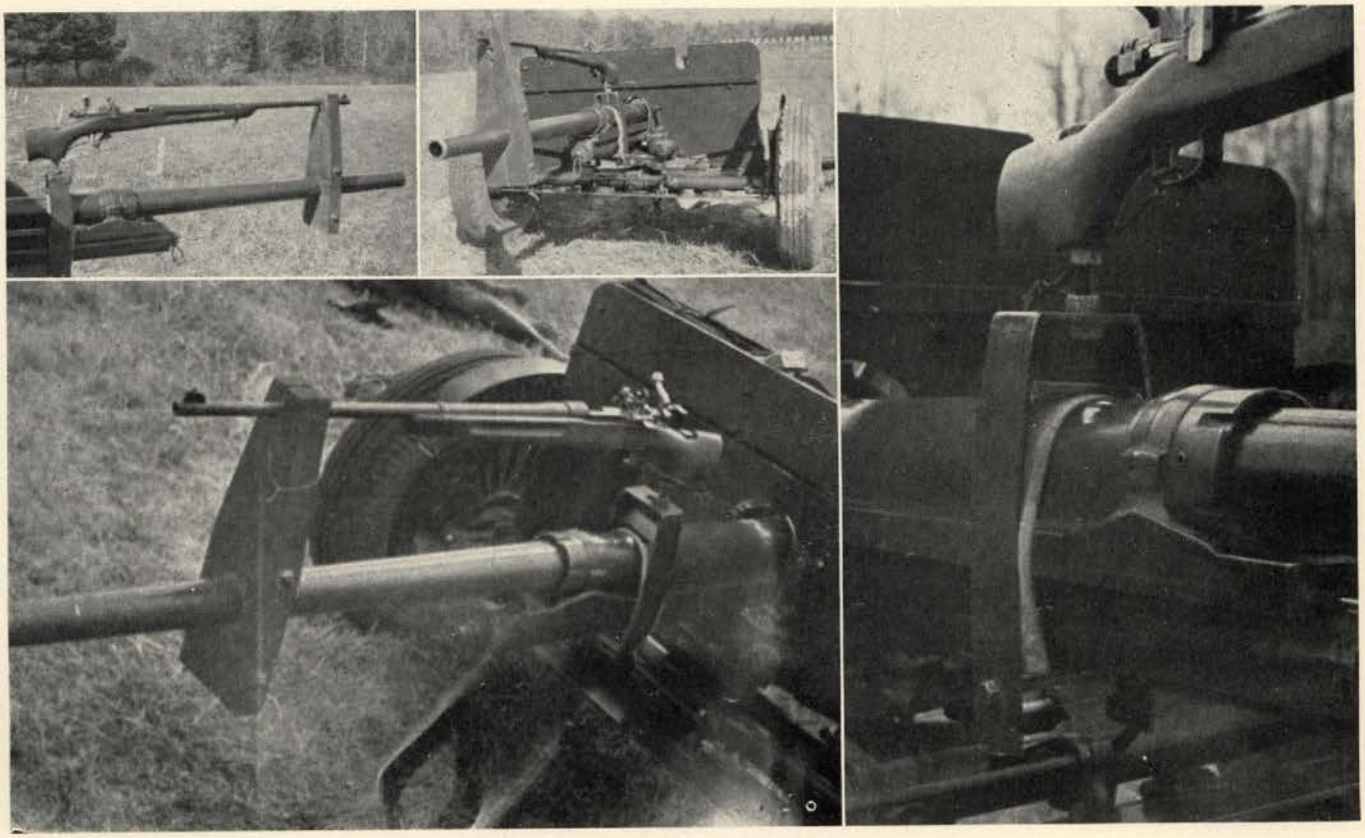
Germany Has Standardized Types of Motor Vehicles





Views of sub-caliber attachment

Sub-Caliber Mount for 37-MM. Gun

By Lieutenant James R. Roane, 6th Cavalry

IN view of the limited ammunition for 37-mm. firing, and limited range facilities of a small Army Post, a sub-caliber mount for the 37-mm. gun is highly desirable. The thing that we felt was needed was not only a sub-caliber mount that could be used on the 1,000″ range, but more important, one that would actually allow us to simulate 37-mm. firing at moderate field ranges. Our Regimental Commander, Lieutenant Colonel Considine, recommended that the .22 caliber rifle be used for this work. To receive the desired results and to simulate more accurately the firing of the 37-mm., it was essential to have a mount that would allow both horizontal and vertical adjustments. Considering the horizontal and vertical adjustment idea, we constructed a mount that proved very satisfactory.

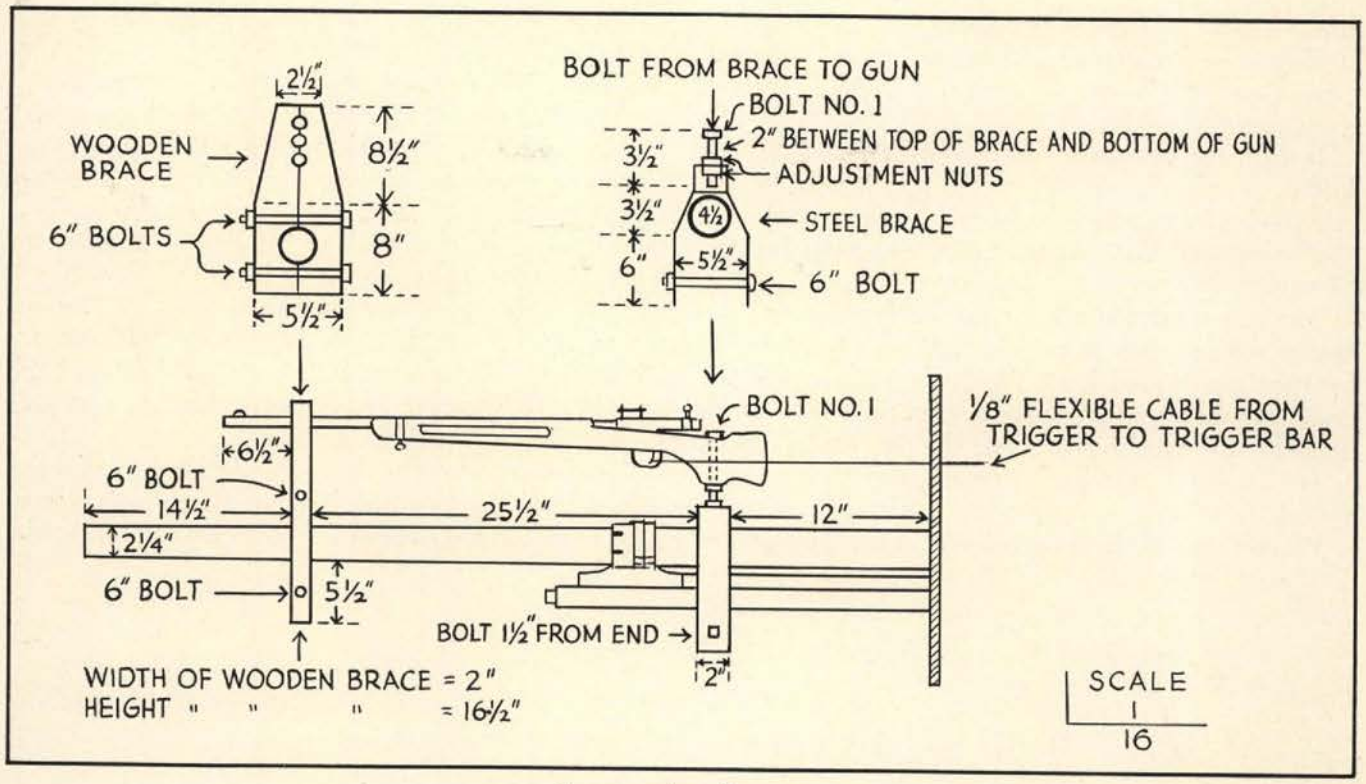
Construction

The accompanying diagram and pictures show the detailed construction of the mount much better than words can describe it, with the exception of one detail. Bolt No. 1, used for vertical and horizontal adjustments, passes through a rectangular slot in the top cross member of the mount. The bolt has adjustable nuts on each side of the cross member. In making vertical adjustments, the lower nut is loosened and by turning the top nut left, depresses the muzzle of the .22. By turning the nut to the right the muzzle is elevated, for horizontal adjustments, the lower is loosened and the bolt slid to the right or left in the slot, as necessary.

When the telescopic sight of the 37-mm. M3A1 is used it is necessary to zero the rifle with the sight. To do this, we targeted the .22 caliber rifle, following the usual procedure as in "sighting in" for ordinary range practice. We then set the telescopic sight on a spotter in the target, and using the adjustment on the sub-caliber mount, aligned the rifle sights on the same spotter.

In a test to determine the accuracy of the .22 caliber and the stability of the sub-caliber mount, we fired 20 rounds in a "3" inch group at 100 yards; 20 rounds in a 3½″ group at 200 yards; and 20 rounds in a 5″ group at 300 yards. In this test we did not change the adjustments after firing the first shot in each group.

After trying a few "dry runs" on moving targets, we found the 37-mm. to be unbalanced due to the fact that the .22 rifle was mounted on the barrel, thus throwing unusual pressure on the elevating mechanism. This caused the gun to be unusually hard to elevate and



Construction of mount

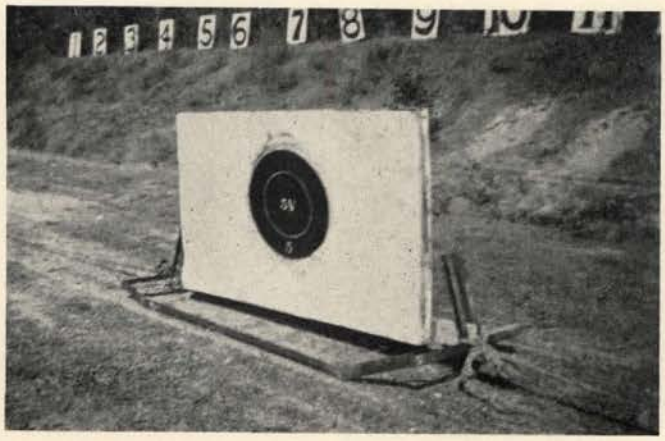
depress; also it caused the traversing mechanism to be sticky. To overcome this, we placed a 13 pound sand bag 12″ from breech of the 37-mm. on the recoil guard.

Target

Because of the short distance the target had to travel, we used a small target 3 feet by 4 feet, drawn at 10 miles per hour. By this means we simulated a scout car or tank traveling at approximately 40 miles per hour. The target was constructed in the following manner: for runners, a salvage bed was used, with about one foot on either end turned up 30 degrees; two uprights 12″ long, 2″ apart welded on the cross member on either end to support the target. For a target, a frame 3 feet by 4 feet covered with target cloth was made, on the bottom of which was nailed a 2″ x 4″ x 6′. This 2″ x 4″ x 6′ fits into the upright on the runners and keeps the target in position.

Practice

We have endeavored in all our firing of the sub-caliber to practice in the same manner as if we were firing the 37-mm. The crew functions in the same manner,



Target

Sub-caliber practice

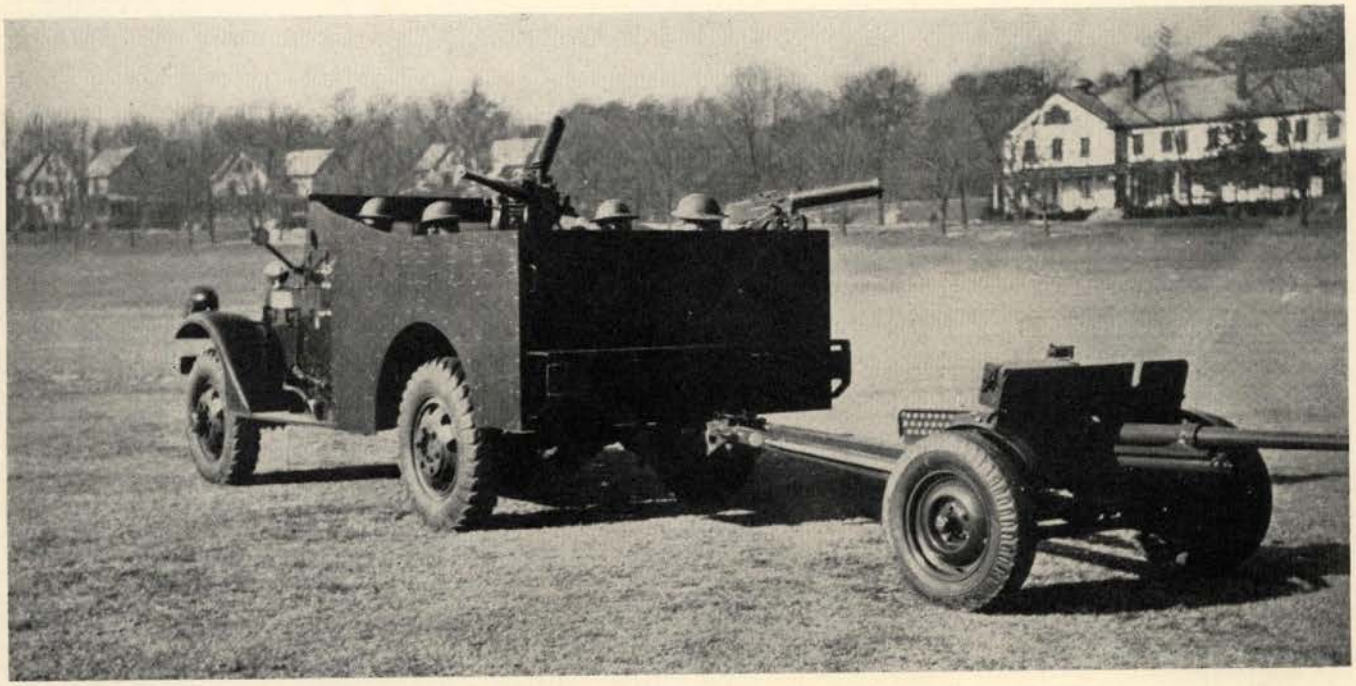
using dummy 37-mm. ammunition. The carrier passes shells to the assistant gunner who loads the 37-mm., and calls "Ready" to notify the gunner that his weapon is ready to fire.

In turn the gunner tracks the target during all the loading operations. As soon as the gun is ready to fire and the sights are aligned properly, the gunner presses the trigger actuator firing the .22 and snapping the 37-mm.

The gun commander loads the .22 by operating the bolt as soon as each shot is fired. This procedure follows for each round fired. With the members of the crew alternating positions they learn the duties of all members and how to coördinate the different duties so as to function as an efficient team rather than as individuals.

Whether we are fighting a rapidly retreating force or facing a Blitzkrieg, we undoubtedly need to be proficient in the operation of the 37-mm.; the only way to become proficient is through practice—practice makes perfect. We here at Fort Oglethorpe, the home of the Fighting 6th Cavalry, feel that the sub-caliber is very efficient for training at short ranges, not only that it eliminates the wear on the expensive equipment and the expenditure of the more expensive ammunition. The .22 caliber sub-caliber may be fired 4 days at less expense to the Army than one round of 37-mm. ammunition, .22 ammunition cost 17 cents per 50 rounds, while the 37-mm. ammunition is $131.50 per 50 rounds, or 77 times more expensive than .22 ammunition.

We have adopted the .30 caliber Garand rifle for the sub-caliber. We have not been able to give it a thorough trial, however, it is very accurate up to 1,000 yards.



37-mm. guns, trailed by scout cars

1940 Leadership Test

2d Squadron, 12th Cavalry

By Captain Chandler P. Robbins, 12th Cavalry

"SEMPER PARATUS" was no idle jest when the squadron received word it was to hold the Leadership Test for Small Units this year. The squadron was embroiled in the training of remounts and recruits and the additional task of training three competition platoons loomed large.

However, volunteers were many and the task became more one of weeding them out than of finding them. All lieutenants competed for the platoons, and the men, especially the non-commissioned officers were anxious to have a chance at the competition and its rewards.

In drafting the conditions governing the test every effort was made to require the platoons to function under actual war conditions.

The missions assigned, as well as the situations and conditions presented were normal and logical for Cavalry. Even the terrain and weather favored the Board in its efforts to tax the brain and brawn of a "Soldier or Soldier Saint."

Individual Phase

All reserve and regular officers below the grade of Captain competed in this phase of the test, the three winners being given the three competing platoons from the squadron. Resulting scores showed clearly that all competitors were well qualified. The margin between third and fourth places was only two points.

The actual test was run on November 11, 1940. All contestants drew numbers by lot and were issued the following instructions:

"Considering yourself in enemy territory you will start at the 200 yard firing point following a course marked by white flags. You will travel at the rate of six miles per hour until you arrive at the *Red Flag* on the course. You will then travel ten miles per hour for the remainder of the mounted course.

There are ten jumps on the course, all of which must be taken. There are seven pistol targets, varying in size, representing the enemy. This enemy will be destroyed by firing one shot through each target. You will then return to the starting point, dismount, unsaddle, turn your horse over to your orderly and run to the dismounted pistol course where you will find pistol ammunition and will fire at a pop-bottle until it is broken. You will then proceed to the 1,000 inch range where you will find an M1 rifle and ammunition. Fire this rifle at another pop-bottle. When you break this bottle you will run back to the 200 yard firing point. There a target will be pointed out to you; you will estimate the range, and issue the necessary fire order to your platoon (assuming your platoon is present with you), to open fire upon the enemy. You will then saddle your horse and report to the judges at 200 yard firing point.

PENALTIES: All competitors were credited individually with 500 points. Assessments were made as follows:

1. To forfeit one point for each 10 seconds or fraction over or under time on the mounted phase.

2. To forfeit one point for each target fired at and missed, and ten points for failure to see and fire at any mounted target.

3. Eight minutes are allowed to run from the 200 yard firing point, fire pistol, machine gun, rifle and return to starting point. One point will be deducted for each 15 seconds under time.

4. One point will be deducted for each shot over one, it takes to break the dismounted pistol and rifle targets. Eight points will be deducted for each square missed with the machine gun; one point credit will be given for each square hit.

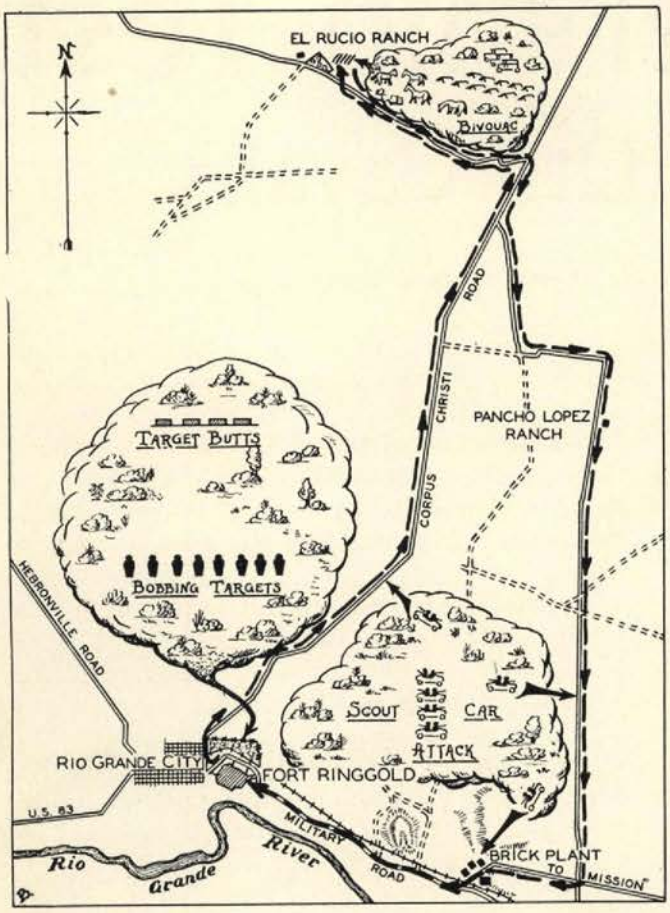
5. One point will be deducted for each 50 yards error in estimating the correct range. Five points will be deducted for failure to issue fire order in proper sequence.

6. Two minutes is allowed for saddling; one point will be credited for each ten seconds under time; ten points will be deducted for failure to saddle properly.

The course is approximately five miles long.

The three Lieutenants with the highest score will be given a platoon to compete in the Cavalry Leadership Test for Small Units. The other Lieutenants will be alternates in the order of ratings in the individual test."

This phase of the test was most interesting in spite of the pithy picture presented by the foregoing discription. The course was tough—as witnessed by the bedraggled condition of the contestants at the finish. A couple of miles of rough brush riding and good stiff obstacles. Well concealed targets at unexpected places and a real work-out on the firing line. Lieutenant Anderson, of Troop "F," with a score of 484 won this phase followed by Lieutenant Lee (473) and Lieutenant Pattie (459) of Troop "E" and "G" respectively. Fourth with a score of (457) was Lieutenant McCroskey who had joined the squadron fresh from Riley a few days before. He was high man on the dismounted phase and would probably have won the event had he not failed to fire on three of the mounted pistol targets. This omission



was entirely excusable since he was going so fast at the time he later confessed—"it was all a blur, sir!"

Many of the contestants were so short of wind when they reached the firing point that they were forced to take a short blow before firing. Hot weather and the unaccustomed foot work were the most common excuses. Pay your money and take your choice. The garrison enjoyed it all.

Leadership Phase

The platoon phase was held on November 23d for Troop "F," November 24th for Troop "G," and November 25th for Troop "E." Platoon leaders drew for the order of starting. Preliminary instructions were issued immediately after this drawing and were as follows:

"1. (a) Approximately 24 hours prior to the test, you will furnish the Board the name and rank of each individual participating in the test together with the number of the horse he is to ride. This test will be conducted under assumed war conditions.

(b) All horses assigned to the platoon will be inspected by the Board 24 hours prior to starting.

(c) Approximately twenty-four hours after the test all horses participating will be inspected by the Board.

(d) Three rounds of .45 caliber ammunition and two loaded M1 clips for each man will be carried in an ammunition box and turned over to the Board at stables. Three clips of .30 caliber blanks will be carried in the belt of each rifle man.

(e) A written warning order accompanied by a suitable marked map, will be issued by the Board approximately twenty-four (24) hours before the test is to commence.

The Board."

On the day before each platoon was to start it was given a map of Fort Ringgold and the following:

Warning Order

"1. Tomorrow, November ———, you will be given a mission which will require you to hold your platoon in readiness at your barracks. This mission will include a march and bivouac.

2. Your horses will be inspected today at 10:00 A.M. at your stables.

3. One day's ration for men and horses will be carried.

4. Hay and drinking water will be delivered to you at your bivouac.

5. No packing of saddles or saddling will be permitted until definite instructions requiring a move are received and your platoon as a whole arrives at stables.

General Tactical Situation

A state of war has existed for several days between two hostile countries separated by the Rio Grande River. Blue—north; Reds—south. Both countries are organized and equipped with modern implements of war. Reds have invaded Blue territory several places from Roma to Laredo. Red troops have also been reported in the vicinity of La Grulla.

The Board."

On November 23, at approximately 1:00 P.M., the Board assembled in the Orderly Room of Troop "F," called the Platoon Leader, issued the following order, and the war was on:

"Red Cavalry estimated to be one regiment camped last night at SALINENO. Ranches were raided last night in the vicinity of ARROYO GRANDE by a force estimated to be the size of one platoon. Small hostile patrols were seen along RIO GRANDE-HEBRONVILLE Road in the vicinity of EL SAUZ at 10:30 this morning. Reliable information indicates a raid is contemplated on EL RUCIO RANCH tonight or early tomorrow morning.

A Blue Regiment of Cavalry, now at TANGUE ALEGRE RANCH, will move South and arrive at EL RUCIO RANCH 2:00 tomorrow. The 12th Cavalry, less 2d Squadron, will arrive at MCALLEN noon today. The 2d Squadron 12th Cavalry will move at 1:00 P.M. today on LA GRULLA." *EXTRACT OF ORDER FROM SQDN C.O., TO C.O., 1ST PLATOON TROOP—*

"March at once to EL RUCIO RANCH via, (see overlay), to protect lives and property of the inhabitants. Rate of march, 6 miles per hour. Remain at EL RUCIO RANCH UNTIL RELIEVED. Our Squadron will move at 1:00 P.M. today on LA GRULLA."

The Platoon Leader called his Platoon Sergeant and with him consulted his map, overlays and order while the Platoon marched to stables and saddled preparatory to moving out.

At 2:00 P.M., after having been inspected by the Board, the Platoon Leader issued his order and the Platoon moved out under the watchful eye of the rest of the Troop who crossed their fingers and wished them luck.

The weather on that first day was hot and sultry. The road was long and rocky and the prospect of a dull 21 mile march was none too cheering and then came the enemy Scout Cars.

The first attack, about 10 miles out, caught the platoon flat-footed because, although they had sent out security patrols, these groups had missed the well concealed cars and the attack came in swiftly and unexpectedly. Dispersion was the only possible defense and the platoon was penalized accordingly.

The second Scout Car ambush occurred on a very narrow, brush enclosed trail, and the rear point gave the platoon ample warning. The result was complete dispersion and rifle fire on the cars.

These attacks slowed the march so much that the platoon arrived at its destination after sundown and their problem was complicated by having to reconnoiter and place their outpost in darkness. This was accomplished and the Board relaxed the imposed war conditions for 1 hour to permit the building of fires to heat coffee and canned rations. This was doubly welcome since evening brought chill winds and the ranch people predicted a "norther" for the next day.

At 1:00 A.M., an alert was sounded and the Platoon Leader was given the following message with overlay:

"A Squadron of Red Cavalry is now in camp at ROMA. Small hostile patrols and Red Scout cars were reported on the west edge of Rio Grande City at 10:00 P.M. last night. Red Troop at LA GRULLA has been destroyed.

Enemy Air & Ground Reconnaissance continue active. 12th Cavalry, less our Squadron, will arrive at Brick Plant at 9:00 A.M. today. Your platoon now relieved from El Rucio Ranch region. Join Squadron at Brick Plant 8:00 A.M. today via the following route.

(SIGNED) CO, 2d Sqdn, 12th Cav."

The resulting night march covered twenty-six and one half miles of the same type of roads and terrain as the previous day. It required the platoon to water and feed men and animals (part of which were on outpost), saddle and move out under "Blackout" conditions.

The gloom was relieved by the appearance of the moon at about 4:00 A.M. Although in its last quarter, it dissipated the darkness and relieved the eye strain of the troopers peering among the shadows in the dense brush.

Smoking was not permitted and extra precautions for maintaining contact coupled with the still-fresh memory of scout car ambushing made for a slow, cautious march.

When the sun rose over the rolling border country, the scout cars struck again but this time warning was ample and the attack was saccessfully met. The platoon continued southward, struck the main highway about two miles east of the Brick Plant with time to spare.

But the fortunes of war frown again—the Brick Plant was occupied not by the squadron but by hostile Scout cars. And so, without further ado, the platoon made a wide and circling movement over exceptionally rough, cactus-infested terrain and attacked the cars from the west.

After very little resistance the enemy waved a white flag and investigation showed they were out of gas and ammunition. However, they proved to be excellent trophies when the Squadron Commander arrived at 8:00 A.M.

The following order was then issued and the platoon moved out on the final 4½ mile leg of the march phase which ended at the east gate of the reservation, near the target range:

"Extract of the Regimental Commander's order follows—

Undetermined number of Red Troops of all arms reported at ROSITA at 7:30 A.M. today, marching toward RIO GRANDE CITY. Our Regiment less your Squadron arrives at Fort Ringgold, 10:00 A.M. today. You will march at once on Fort Ringgold, and delay the advance of Red Troops east of RIO GRANDE CITY. The Squadron C.O. then issued the following order orally to C.O. of the competing Platoon:

"You know the situation. Our Squadron marches at once on FORT RINGGOLD to delay the enemy until the arrival of the Regiment. Lieutenant ————, your platoon will form the advance guard. You will attack the enemy wherever met. Rate of march—5 miles per hour, via. Highway No. 83. I will be at the head of main body. Are there any questions? Move out."

The ensuing combat phase was of necessity, well controlled by the Board. Since the only safe range is a thousand inch one, the combat phase was so cramped and artificial that without this umpire control, the desired picture could not have been presented and danger to adjacent oil well sections would have been inevitable.

The first phase was based on the following brief umpire control:

"When the point of the advance guard arrives inside the east entrance of Reservation it halts under cover, observing what looks to be the point of an advance guard of Red Troops in the vicinity of the Target Range. The Corporal decides to make a mounted attack."

As the point attacked and swept through the targets, it received rifle and LMG fire from the vicinity of the rifle butts. It wheeled by the flank and rejoined the platoon which had moved up into cover. Having ob-

served this action, the platoon leader decided to launch a dismounted attack on the enemy position.

This attack began with the delivery of fire on the scattered targets picked up by the scouts. Other targets (by controlled wires) appeared at various places until the platoon was heavily engaged, whereupon the appearance of another section of enemy targets clearly indicated a withdrawal was essential. During this withdrawal, the combat phase was stopped and the remaining ammunition and score were checked while the platoon moved to stables for the inspection of men, animals and a "show down" of equipment.

Horses were inspected the next day for soundness, and the test was history for Troop "F."

The following day the same procedure was followed for the Troop "G" Platoon. By this time the "norther" had developed and a cold driving rain made the going particularly hard.

This platoon carried simulated land mines which were set out at each halt. They were credited with stopping one scout car attack which, due to a slight error in timing, struck the platoon shortly after it had pulled into a halt and mined the road.

The resulting confusion further threw out the timing and, due to the sparse road net in this country, made the cars late on their second attack. Timely warning on this attempt permitted the platoon to avoid the ambush and proceed without delay.

It arrived at its destination before dark and dispositions for the night were much more quickly and easily made. It had, however, particularly nasty weather to add to its trouble. The "norther" had fully developed and both men and horses suffered from the cold wind and rain. It was "not a fit night out for man or beast."

Yet the platoon made the trip successfully, and about on a par with the previous platoon, until they contacted the scout cars at the Brick Plant. At this point with a little careful reconnaissance they discovered the plight of the enemy and saved the long rough encircling movement.

The rest of their competition was uneventful and the weather improved steadily as they finished.

This excellent weather maintained during the entire period of the "E" Platoon's competition and was no small factor in their eventual success.

They carried hand grenades (simulated) as an additional antimechanization measure and were most successful in their use of them. The first attack, however, caught this platoon from the rear on a section of road hemmed in by a stout wire fence. The flank reconnaissance failed to find the hidden cars which came in between the platoon and its rear point, attacked with all guns firing and literally herded the platoon for a mile when they were able to leave the road and scatter. The next attact was successfully met and the grenades (small sacks of flour) left their marks on the scout cars.

Being speeded up rather than slowed by these attacks, this platoon arrived in bivouac well ahead of sundown and made excellent dispositions for the night.

Their night march was ideal as the moon rode high, the weather was perfect and the only trace of the "norther" of the previous day was the unusual absence of dust.

They also handled the final scout car contact without having to detour and finished at the Brick Plant with men and horses in excellent shape. The finale of the march phase was taken in stride and they did exceptionally well on the combat phase.

Umpiring

The system of umpiring for this competition is worthy of note since it provided a mounted umpire with the platoon at all times during the march and all umpires were present at all halts, contacts with the enemy, and at the bivouac.

This was accomplished as follows: Colonel Palmer and Captain Hasson, the veterinarian, and either Colonel Lafferty or Captain Robbins, rode the local "Jeep," observing the platoon on the march and checking men, horses and tactical dispositions at all halts. They were followed by a horse trailer which carried the horse of either Colonel Lafferty or Captain Robbins, whichever was riding the "Jeep," while the mounted umpire rode with the platoon constantly checking on gaits, the smoothness of changes, the riding of the men, and all the many details covered in the list of penalties.

Horses and riders were changed at the half-way point of each part of the march phase so that each mounted umpire rode equal distances and the same stretch of road with each platoon.

All umpires, of course, were present at all inspections of men and animals—before, during and after the competition.

Comments

There were many interesting phases of this competition. The march phase, consisting of 52 miles, was difficult owing to the rocky roads and heavy brush, yet only three shoes were cast (all were quickly replaced) and no horse suffered seriously from thorn punctures. Men and horses finished strong and were ready for further action as evidenced by the fact that all attended routine drills with their troops the day after finishing. March discipline and gaiting were excellent both day and night.

The methods of handling mechanized attacks varied from the passive—scattering like quail into the brush and presenting an impossible target—to the actual use of simulated land mines and hand grenades as well as rifle and pistol fire. It is believed that both the latter are desirable as the situation permits. Land mines are good when time permits their proper installation. Hand grenades are probably the best all around solution since they can be used by concealed personnel on the ground or thrown from horseback if absolutely necessary. Ample warning is the essence of active defense.

The approach to an occupation of the ranch was worked out differently by each platoon and the methods of covering the road leading in also varied. The "F" Troop platoon made a slow reconnaissance, established march outpost and elected to barricade the road with corral poles covered by rifle fire. The "G" Troop platoon reconnoitered more fully and used their mines on the road while the "E" Troop platoon made a very thorough reconnaissance and swiftly out-posted the road well away from the ranch. All platoons reconnoitered mounted with raised pistols—much to the alarm of the local inhabitants.

All platoons were constantly alert for air observation and attack and the precautions taken by day and night were excellent throughout.

The platoons made a special effort to close all gates along the road to prevent cattle from moving from one ranch to another. A non-commissioned officer was detailed for this purpose and his efforts were duly appreciated by the local ranchers who have great difficulty rounding up stock that wanders in this cactus and brush covered country. Such courtesy and consideration has made the troops welcome wherever they go.

The night march brought out the absolute necessity for special precautions for maintaining contact during darkness and the well known, though often forgotten fact that it is better to slow a little and be sure of your route and location, than to push on blindly. One platoon was "lost" for two hours and as luck would have it, was on the right road, moving in the right direction all the time.

All platoons used the "streamlined pack," written up in the July-August issue of The Cavalry Journal, and were high in their praise of it. The double blanket reduced sore backs, the grain on the cantle was believed to have contributed to the absence of sore withers and the elimination of the cantle roll made quick mounting and dismounting much easier. The position of the curry comb greatly facilitated its use the many times it was necessary to remove stones from the horses feet on the march. The Board, in its report, recommended the adoption of this pack by the entire Cavalry. No difficulty was experienced in carrying the ration in the saddle bags. In fact they were easily shifted to maintain a balanced load.

The enthusiasm, hard work and high morale exhibited by the competing personnel and their parent organizations during the preliminary training period and the actual tests were a source of pride and satisfaction to the entire command.

The non-commissioned officers were without exception, outstandingly alert, capable and enthusiastic. It is with regret that we pass many of them along as Cadres to new organizations.

Colonel Frederick R. Lafferty, our post and squadron Commander presented the winning "E" Troop platoon with their prize money at a formal ceremony just before the holidays and a Merry Christmas was had by all.

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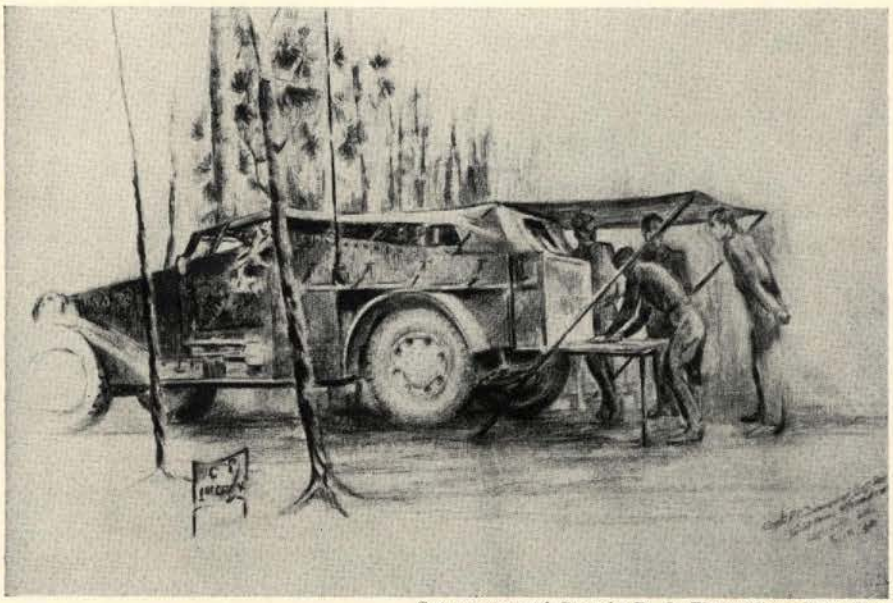


Cut courtesy of Captain R. O. Zimmerling, Engr-Res.

A Cavalry Command Post.

Streamlined Command and Staff Procedure

By Cary Ingram Crockett

"DURING recent years Germany prepared for the next war, France for the last, and Britain and the United States for no war at all." The truth of this statement, which is accredited to Herr Hitler as well as various other personages, can be judged by anyone who keeps in touch with current events.

It is a matter of common knowledge now that, as a result of recent developments in weapons and equipment for fighting, a pronounced change has taken place in both the strategic and tactical aspects of war. The fact may not be so generally known, however, that changes in the physical pattern of war also imply a corresponding moral preparation of the officers and men of the fighting armies—a preparation stimulating them to meet the accelerated tempo of present-day military operations.

Service during maneuvers several years ago as executive officer and part-time commander of a force consisting of a motorized infantry regiment reinforced by a motorized battalion of field artillery, a platoon of modern tanks and a flight of airplanes, quickly opened my eyes to various new features of vital importance. At the conclusion of this experience I wrote the following entries in my notebook:

1. It is not enough for a commander to possess professional ability, thoroughness, accuracy, originality, initiative, quickness of decision, and high moral force —there must also be a mental speeding-up of all officers.
2. Security measures must extend outward, often in all directions, to at least a hundred and fifty miles, defiles being of particular importance.
3. Additional emphasis must be placed on military intelligence.
4. Drastic changes in command and staff procedure are needed to permit celerity of action without undue loss of control.

Later observation during five days of the operations of the 7th Cavalry Brigade, mechanized, also observation abroad, confirmed the above conclusions.

The new methods by which the commander of a swiftly moving force exercises control of his subordinate units preparatory to giving battle and during combat offer a field of study that is of primary interest to all progressive officers and enlisted men.

World War I left as indelible imprints on the minds of officers who took part in it, recollections of written field orders several pages in length which, with the attached annexes, often constituted a large-sized package of closely typed matter. However applicable these voluminous orders and instructions may have been to the set-piece attacks against limited objectives, and to the more or less conventionalized defense of fortified sectors, characteristic of that war, they are entirely unsuited for operations of less restricted type.

Nevertheless, from the mental inheritance of the first World War, and also a desire to give instruction in detail for the benefit of poorly trained organizations, there was until lately a tendency in the American army to follow the old method. For example, in one of the Command and General Staff Extension Courses, now being superseded by a revised course, a brigade attack order appears which takes up several closely printed pages, the paragraphs for a single unit covering over half a page. That this order was for troops only partly trained was the excuse for the length; obviously such an order is now completely outmoded.

Many years ago, the procedure favored at the Fort Leavenworth School for a commander in conveying his will to subordinates, was that he issue initially a complete field order which included missions and instructions for every element of the command. This was then followed by supplementary orders in the form of messages.

Subsequently, the sequence was reversed: the orders to start operations were sent first in message form, the formal field order being prepared later. It is hardly possible that either procedure could be generally followed now, nor in view of the changes in organization and newly devised methods would it be desirable to do so.

In the first place, the present war has proved that poorly trained troops, lacking modern equipment, are unable to confront first-class troops that are properly equipped, and the more inferior troops assembled the greater the massacre. The god of battles is not on the side of the strongest battalions, but evidently favors troops which through timely provision are equipped with modern weapons, and are trained in their use. This war has also proved that the period of time at the disposal of the division commander for the issue of orders and exercise of control, formerly calculated in hours, is now counted only in minutes.

One of the main reasons for the recent change in organization of our regular divisions to the present triangular form is to save time—a factor infinitely more precious now than when Napoleon made the statement: "Ask of me anything but time." New command and staff procedures have been, and are being, developed to meet the requirement for quicker and smoother action at all unit headquarters.

Observation, research, and some practical experience have indicated to me certain measures that appear to have the virtues of commonsense and practicability.

The unit considered for discussion is a triangular division, although the remarks in the main apply to any

command where troops of the various arms are to act in combination.

Under the new divisional organization the main elements, action of which the commander must coördinate and control, are: a reconnaissance unit, the three combat teams, the division artillery and the anti-tank battalion. If the division is to advance rapidly towards an objective it may be possible to transport all elements—except troops of the combat team held tentatively in reserve, and perhaps the administrative echelons of the other two combat teams—in various gasoline-driven vehicles belonging to the division. Speed, heavy striking power, and flexibility of maneuver are the primary characteristics of such a force.

There is, then, to be visualized something similar to a mighty stream composed of several hundred vehicles, with a reconnaissance unit far to the front and observation aviation combing the skies ahead; the current flowing at twenty miles or more per hour. And this stream is to be put in motion, stopped, made to change direction and diverted into various channels, all at the will of the commander as expressed in orders and instructions emanating from a control center usually moving with the current.

In this case, only the commanders of the ground and air reconnaissance units, and the two leading combat teams need receive in message form the initial order covering a change in the tactical situation. The commanders of the artillery, antitank battalion and reserve combat team, also representatives of the remaining elements, are usually close to the division commander, or within easy communication. It is logical to assume that the division commander through the liaison means at his disposal, and periodic reports from each commander, is always informed of the location of each combat element.

Initial field orders are in the form of brief messages. The chief of staff is responsible for insuring that all the next subordinate commanders are informed about the situation, the mission and plan of the division, and the part each unit is to play in its execution. The efficiency of the chief of staff can largely be measured by the extent to which he is able to fulfill this responsibility. Heretofore in our service, the prompt dissemination of information essential for team-work has often been neglected.

Thus unburdened of details, the division commander is free to receive information concerning the capabilities of the enemy and his own force, and to carry on in his mind a running estimate of the situation, based on the information received, which will enable him promptly to meet any important change in the situation with a new decision.

After the shaking-down process incident to a relatively short period of actual practice in the field—during which the personal equations of the several subordinate commanders, also the staff officers, are duly taken into account—the division should be able to function from the command and staff viewpoint as nearly like a well-regulated machine as the frictions inevitable in war situations will permit. In a smoothly running and well-trained organization such as all our divisions should quickly become, decisions of the commander covering tactical operations can be expressed in orders of laconic brevity.

Certainly future orders will be concise. For example, in an advance the order for the commander of the reconnaissance unit might be: "Division advances today towards—in two columns; routes—. Cover line—. Messages to—."

As an extreme example, assuming the commander of the reconnaissance unit to be well-informed, the order might be simply: "Cover line—."

Under the methods which have been outlined, the chief of staff is responsible that all the supplementary information necessary properly to orient the commander of the reconnaissance unit be transmitted to him in due time.

Radio is now provided universally for transmitting messages, but it still has serious limitations, and motorcycles or automotive vehicles of some sort must always be available as an alternative means of communication.

The safest follow-up method after the dispatch by radio of an order of only a few words is for Division to send a staff officer to the subordinate commander concerned to explain the general situation and plan, and interpret the mission of the lower unit in the light of the division commander's viewpoint—provided of course, that the division commander himself is unable to go.

A motorized division preparing for attack would of course seek assembly areas for detrucking that are covered by its advance elements, and are outside the effective range of hostile fire; concealment from hostile aviation by darkness, fog, or woods of course being another important consideration. In such a situation the order sent to the commander of a combat team for development, in its barest form, might be as follows: "See situation map. Division assembles for attack. Orders at crossroads—. —AM"; or if sent by means other than by messenger, the message might read: "Assembly area, combat team A—."

An order in more lengthy form delivered by messenger might include the following: "See situation map. Hostile infantry and artillery occupying—. Hostile mechanized force at—, moving south at —AM. Our reconnaissance detachment covering division along line—. Our antitank battalion moving to—. Division develops for attack. Orders at crossroads—; —. —AM."

It seems hardly necessary to add that unit commanders who are to function successfully under such sketchy orders must possess the qualifications specified in lettered sub-paragraph No. 1 above, to a marked degree. During maneuvers in 1936 the commander of an entrucked infantry battalion supporting a mechanized force received an order by radio of one word: "With-

draw"; and that was all he got. Being ignorant of the situation and plan of his commander, he was in a quandary. But was not this largely his own fault? Should he not—in the absence of information coming from his commander—have displayed initiative by improvising means to inform himself?

If operations are to be conducted under orders condensed as has been shown—all the circumstances indicate that they will be—the commander must foster initiative among subordinates more than ever before. Further, since the commander receives credit for success coming from the initiative of a subordinate, so must he be great enough in character to accept responsibility in case of failure from the same cause. (*Vide* Lee with Longstreet and Stuart at Gettysburg.) How many could pass this test of greatness?

Orders for development of an advancing division might be sent in fragmentary form by motor messenger or radio to the reconnaissance unit and to combat teams A and B; dictated or given orally to the commanders of combat team C, the artillery, and antitank battalion, or to their representatives; and of course by ground-air telephone to the observation aviation. In the above case orders for the division artillery and antitank battalion in message form could be omitted as the commanders are with or near the division commander; both units cover the assembly automatically, and the shift of artillery to division control, if made, is directed subsequently.

Other units of the division, as stated before, conform to the operation in accordance with oral or dictated orders transmitted to the commanders concerned, or their representatives, under the prescribed routine procedure. Information relating to the activities of auxiliary troops and instructions governing supply and evacuation when applicable are made known later to the commanders of combat units concerned.

An assistant G3 charged mainly—or even solely—with seeing that orders, instructions and essential information are duly disseminated to the command would fully justify his existence. It might be well to revive the use of gallopers, moving, however, in motorcycle side-cars instead of on horseback as of old, as one of the means adopted to keep the command properly oriented.

The notes on which this article is based were blocked out in 1939 after several weeks spent in preparing suggestions for revision of the Field Service Regulations. Of course no originality is claimed for anything proposed. Probably the methods touched upon—or others still better—have been developed empirically and already have been put into use by various units.

* * *

Pertinent parts of Lieutenant General Hugh Drum's instructions for the 1940 First Army Maneuvers, given at the opening conference held at Canton, New York on August 7, are quoted as being of special interest in this connection.

Combat decisions and orders in form and substance have passed through two cycles—*first,* the brevity of the expression "follow me"; *second,* the complicated detailed pages of the World War days. The demands of speed and the grasping of fleeting opportunities of present battle tactics require the discard of the latter system while the complexity of handling great masses of human beings and machines with all the supply problems associated therewith make inadmissible in most cases the brevity of the days when the leader actually led his small group. Modern conditions involve not only the complications indicated, but call for large staffs specialized in various phases of operations, supply and logistics. These opposing objectives—speed and brevity on the one hand and the works of large specialized staffs on the other—conflict and, unless commanders take this problem in their own hands, the real objective of a combat unit—successful combat of front line units—will be difficult to achieve. I have devised a solution which I desire all commanders to follow in these exercises as a test. It is based on the following:

All instructions for combat, movements, etc., will be issued in two categories, viz:

(1) *The commander's decision* which will include only such information of the enemy and such statement of the commander's plan and directions to his subordinate commanders as will permit them *to initiate* the operations of their commanders whether in combat or in a movement. All administrative, supply, medical, etc., plans and directions are to be omitted from the commander's decision. In most cases many of the commander's instructions may be indicated on an overlay map.

(2) *All instructions supplementing the foregoing will be issued by staff officers,* within their respective spheres of activity after being coördinated by a chief of staff or executive. These instructions will not be combined in one document but formulated by each staff head and sent direct in that staff head's channel of service. Associated with this system is the necessity for careful consideration by the head staff officer and action by staff officers to keep their commanders informed at all times.

This system, I believe, will give to the combat troops in ample time the information necessary to *initiate operations*—without waiting for the administrative details which are not essential until a later period of the action.

* * *

General Drum's complete instructions were distributed in printed form, down to include companies and like units. Whatever the success of the methods enjoined, it is clear that such methods, or others that are similar, must be employed to make possible the exercise of command during the kaleidoscopic changes in tactical situations which characterize present-day fighting.

What Would You Do?

A VERY bored orderly stood by the roadside in front of St. Luke's Church, holding his own horse and that of Colonel (Old Man) Rivers. A few yards away, Colonel Rivers, for it was indeed he, was busily engaged in one of his favorite pastimes while in the field—that of reading the epitaphs in the churchyard.

Apparently oblivious to the fact that his regiment was about to initiate an attack, he was cackling merrily over a headstone he considered a real diller, when he was interrupted by galloping hoofbeats. A very excited lieutenant drew rein near the colonel's orderly and cried, "Say, where is Colonel Rivers' command post?"

"Just a minute, young man," called the colonel, "I am Colonel Rivers. What's your trouble?"

"I am Lieutenant Spriggin, sir," panted the youth. "The brigade commander sent me to your command post as liaison officer. Its location has not yet been reported, but perhaps I had better go there, if you will tell me where it is."

Colonel Rivers sighed deeply. "Spriggin," he said, "relax. Frankly I don't know where the command post is myself. Not twenty minutes ago I gave orders to organize the regiment for attack on Hill 609, the objective given us by the brigade commander. Having designated the main attack force, the secondary attack force and the reserve, having assigned the supporting fire units and given the coördinating measures and the objectives, what else is there for me to do?"

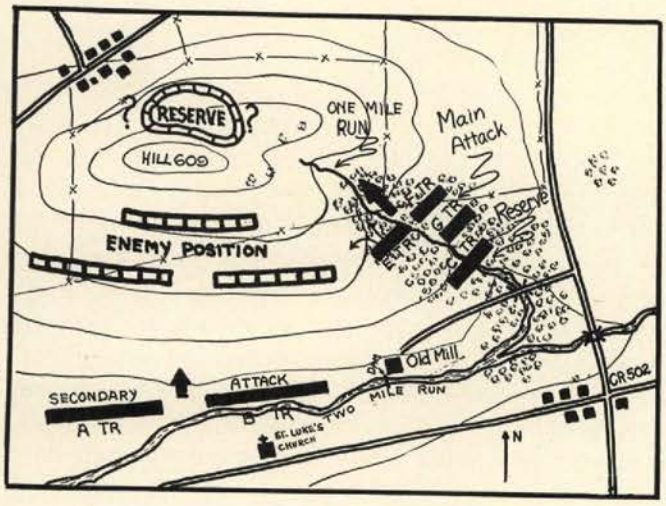
"I don't know, sir," replied Spriggin honestly. "But I hear a lot of shooting to our north that seems rather close."

Colonel Rivers took a riding crop and began to draw a sketch in the soft shoulder of the church driveway. "Once the orders are given there's always plenty of time to piddle around in, Spriggin," he said kindly. "I usually leave it to my second-in-command, old 'Egg' Zeck, to spot the CP while I reconnoiter or visit the troops. I know that's not what the book says, but Zeck never misses. Now, look at this sketch," he went on, "that firing you hear is probably the secondary attack of A and B Troops getting started. Zeck may have put the CP near one of these troops because he knows we want to get the secondary attack under way quickly and because he is scared of getting captured by wandering enemy scout cars if he puts it off by itself.

"Or, he may have put his fears behind him and decided that the Old Mill would be a good location. It is right between the secondary attack and the main attack. The latter, you see, is headed up the wooded draw of One Mile Run. The Old Mill would be a handy place from which to control both attacks, as well as the reserve. On the other hand, CR 502 might be a splendid spot because of its accessibility.

"Then there ought to be a good series of points along the One Mile Creek bottom, with the CP moving between the main attack group and the reserve. That location would be near the main attack, which is now our principal concern, and convenient to the reserve. It also secures the command post to some extent. But it is quite a distance from the secondary attack group.

"Spriggin, it's about time I went to my CP. But before we go, tell me, if you were Lieutenant Colonel 'Egg' Zeck and had to select a position for the regimental CP—



WHAT WOULD YOU DO?

* * *

SOLUTION

A central location of command posts, somewhat to the rear of assault and reserve elements of the attack force was quite common during the World War. It was a generally acceptable practice because of the static nature of operations and the availability of excellent maps.

If Colonel Rivers' regiment was engaged in World War fighting, a location at the Old Mill would undoubtedly be very satisfactory. But such a central location is quite unsuited to the open warfare expected in modern times. In maneuvers (and in war) these centrally located command posts are invariably at the mercy of wandering hostile scout cars and patrols. Essential security is lacking.

Moreover, the rapidly changing situations demand that some part of the force, preferably the bulk of the force, be under the immediate control of the commander. Also it is essential that the reserve be immediately available, possibly for the commander's personal leadership. It is not always possible to be near

both the bulk of the force and the reserve, but a location near the headquarters of one or both will provide immediate control as well as security.

Another problem of modern war is that of assisting staff officers and messengers to find CP's without the aid of first-class maps. When the CP is located close by a troop or squadron headquarters, it is ordinarily sufficient for the messenger to locate any of the personnel of that particular troop or squadron. They can usually tell him where the headquarters is situated. The troop or squadron being spread out over a relatively wide area, the task of the messenger is simplified.

Colonel Rivers would expect Lieutenant Colonel Zeck to have activated the command post group along the bottom of One Mile Run between the main attack troops and the reserve. The command post would be mobile, progressing forward with the attack by bounds. This location answers the requirements of security and the availability of troops for immediate control. Messenger-time to the secondary attack group is not much greater than it would be from a centrally spotted post.

The changing conditions of open warfare will require a high degree of mobility on the part of the regimental commander and his staff. In the early stages of action the former should visit the secondary attack force and other less important elements of the regiment. The staff should be supervising and checking on the conduct of various groups. In the meantime the command post personnel provide a rendezvous for all persons connected with the control of the regiment and subordinate units; they also maintain the several records connected with the current tactical operation.

A properly located CP will provide the commander with a convenient location from which to control important groups at the critical stages of the action, without having to resort to cumbersome methods.

★ ★ ★

The Rocket-Bomb*

By Major General J. F. C. Fuller, British Army, Retired

On September 19, 1939, we were threatened by a "secret weapon," Hitler himself telling us that: "The moment may come when we shall use a weapon which is not yet known and against which there is no defense."

Now, like a cork, it has bobbed up again, for German military leaders have said that weapons never before used will be employed against Britain.

It should be remembered that the life history of weapons has been fairly constant; for nearly all have emerged out of secrecy. Daily, scores of men are thinking them out; thousands are devised; few are accepted, and then generally most reluctantly; some have changed the course of history, whilst others have disappeared.

Though at first it may seem strange, yet it is logical that throughout history it is siege and not mobile warfare which has stimulated inventive genius. Thus, in the last war, no sooner was the Western Front intrenched than, as if out of a conjurer's hat, appeared first lethal gas and secondly the tank. Nevertheless, though the one surprised us and the other our enemy, the ideas behind these two weapons were nearly as old as war itself.

No, there is precious little new in war. Therefore should Hitler really have a secret weapon up his sleeve, the likelihood is that it is but the development of an old idea. What it is, I cannot say; yet I do know this: Since the ending of the World War the Germans have been experimenting with the oldest of all explosively propelled projectiles—the rocket.

In modern times, the first man to make a true weapon of this piece of fireworks was Major General Sir W. Congreve, who said, about a century ago: "The rocket is, in truth, an arm by which the whole system of military tactics is destined to be changed."

Though the range of Congreve's rocket was no more than 3,000 yards, experts inform us that, should two difficulties be overcome, there is no theoretical reason why a rocket could not be constructed which would travel from Berlin to London, or Berlin to New York.

These two difficulties are motive power and maintenance of direction. Should these be solved, then it will become possible to bombard cities by rockets carrying scores of tons of high explosives: manless projectiles which will devastate acres of built-up areas in a second.

Personally, I think that, as a stepping-stone to this war of annihilation, aircraft will be fitted with rocket-bombs, enabling them to bombard a city without penetrating its ground antiaircraft defenses, as formerly walled cities were bombarded by cannon and mortars.

"There is," wrote an American rocketeer five years ago, "no possible doubt that militarists all over the world, with the possible exception of England, are fully alive to the tremendous possibilities of the rocket in modern warfare, and in the next war it will inevitably follow that rocket propulsion will be developed to the fullest extent of its destructive powers, just as happened in the Great War with the airplane."

There is a saving clause, however, and every schoolboy who has played about with fireworks knows it. Rockets have the unpleasant habit of sometimes turning round.

*From *The Gunner*.

Home-made Gas Bombs

By Lieutenant Colonel William F. Heavey, Corps of Engineers

Newspaper reports of the use of the gasoline bomb as a tank discourager in Spain and Finland have brought few details of construction. However, one over-enthusiastic report went so far as to say that it was only necessary to throw the bomb near the engine or exhaust of an overheated tank to set it on fire. While such a method might have been sufficient to deal with old tank types, it would not work on a modern tank.

Here is a gasoline bomb that is easily made and has already proved its worth in tests on a modern tank.

Use at least a quart-size bottle (a smaller size will give you too small a fire). Fill the bottle with a mixture of half gasoline and half oil or creosote. (Gasoline alone flashes too quickly and burns out.)

Tape a good-sized wad of cotton waste on the bottom of the bottle, using narrow tape so as to leave much of the waste exposed. Firmly tie or tape an ordinary engineer fuse-lighter to the side of the bottle. Place the lighter longitudinally so that the flame will strike the cotton waste (Figure 1).

To prime the bomb, the bomber or an assistant pours (from another bottle) enough gasoline to thoroughly saturate the waste on the end of the bottle.

The bomber holds the bottle in his right hand (if he is right-handed) with the neck of the bottle towards him (Figure 2). He pulls the fuse-lighter with his left hand, thus igniting the cotton waste. He promptly throws the bottle at the tank much in the manner of a shot-putter (Figure 3).

Several precautions are advisable:

(1) Don't spill gasoline on the outside of the bottle except on the cotton waste.

(2) Hold the bottle with the cotton waste pointed slightly downward so that gasoline does not run down the outside of the bottle.

(3) Use a tight-fitting cork stopper in the bottle.

(4) Practice throwing a bottle of water without the fuse-lighter, then with a fuse-lighter. After the bomber has acquired confidence and dexterity he can graduate to bottles filled with the gasoline mixture.

Bombers should work in pairs after each has qualified individually. This is necessary because one hit will rarely disable a tank. However, the second bomber should delay hurling his bomb until the first has struck. Observing the result of the first bomb, the second bomber quickly decides whether to build up the fire started by the first one, or to attack a more vulnerable part of the tank. The first bomb may cause a member of the crew to open a flap or even the turret. In this case the second bomber takes advantage of his opportunities.

Blazer or bengal matches or small railroad flares can be tied to the bottle in place of fuse-lighters. However, the fuse-lighters mentioned above have functioned satisfactorily.

Figure 1

Figure 2

Figure 3

Horses in Chemical Warfare*

By Captain Don L. Mace, Veterinary Corps

THE first recorded effort to overcome an enemy by the generation of poisonous and suffocating gases seems to have been in the ancient wars of the Athenians and Spartans, when the Athenians saturated wood with sulphur and pitch and burned this under the walls of the defenders with the hope of choking the enemy and rendering the assault less difficult. Similar uses of toxic gases during the middle ages are reported, which ended in success for the forces employing such methods.

There have always been arguments for and against the use of toxic gases in warfare. The arguments against its use are based upon the viewpoint of its inhumanity. There are several reasons why chemical warfare was first widely advertised as more inhumane and horrible than other forms of warfare, and these reasons may be summed up as follows. The first gas used in the World War was chlorine, one of the suffocant gases, known to have the most agonizing effect of any gas when no protective device is available. Secondly, the English had no masks, no gas proof shelters, nor any paraphernalia later employed to protect against poisonous gas. Consequently, the death rate in the first gas attack at Ypres was exceedingly high. The third great reason was simply propaganda. It was impressed upon everyone that the Germans had no respect for previous agreements made by all nations as one of the rules of warfare (to outlaw the use of gas in warfare), and this propaganda kept up the morale and fighting spirit of the allies, even though it may have led to wild exaggeration.

In the first place, gunshot wounds are usually accompanied by more suffering and mutilation than those which occur from gas. Secondly, the death rate from gas is much lower than that from other forms of warfare, which is illustrated by the fact that less than 2 per cent of the gas casualties in the A.E.F. resulted in death,[4] while 28 per cent of the gunshot wounds proved fatal.[5]

Since gas has certain marked advantages over other weapons, in that it produces a greater number of casualties with longer hospitalization; is applicable to all arms and types of action; and is effective in routing the enemy from areas not vulnerable to gun fire, its use as an effective weapon in future warfare seems assured.

The rôle of the horse in future conflicts is a much discussed question, yet military authorities agree that warfare on difficult terrain requires the use of animal units as important elements in defense, offense, and supply. In spite of the undoubted efficiency of modern automotive equipment, there are conditions in war under which such equipment cannot operate, and animal drawn and pack transportation, along with horse cavalry, appear to be the approved solutions.

*From *The Veterinary Bulletin*, April, 1940.

Sensitivity of Horse to War Gases

Little has been written about the effects of combat gas on the horse as the result of observations made during the World War, hence authentic information is lacking in regard to physiological and pathological action, and treatment. It appears that animals killed or evacuated as a result of gas exposures were not listed in separate categories by the majority of the armies engaged in that war. Therefore, it is our intention to present information on the effects of gases on animals as the result of an extended search of the literature on this subject written during the World War and up to the present time.

The author believes that it is fallacy to assert that the horse possesses a natural immunity to gases, and that such mistaken belief is due to the lack of accurate statistics, the existence of definite idiosyncrasies, the influence of local conditions, and especially the lack of accurate research. Available information derived from such sources leads one to believe that during the World War the mortality following exposure to gas was greater among horses than among men. Higher mortality in the horse can be explained partially by the fact that greater individual and collective protection, and more efficient use of protective devices afforded man far greater security than could be provided for the horse.

Richters,[2] in his book *Animals in Chemical Warfare,* observes that, "The laboratory experiments carried out during the war, as well as experiences in the field compel us to recognize that, although war gas poisonings in the case of horses do not end fatally, so often as in the case of man, nevertheless, man and animal are on the same plane as regards susceptibility to war gases. In fact, as regards certain substances, e. g. mustard gas (yellow cross) the horse, particularly his skin, proves to be more susceptible than man. It is only to a single group of war gases, the lachrymators (tear gas), that the horse has a relatively high degree of immunity."

Irritant Smokes

Irritant smokes are chemical agents which can be disseminated in small solid or liquid particles in air, and which when inspired in very low concentrations, cause sneezing, coughing, lachrymation, or headache, followed by nausea and temporary physical disability.

These agents, such as diphenylchlorarsine (DA) and diphenylaminechlorarsine (DM) are not lethal in field concentrations. They may, however, cause such disability as to require evacuation of men.

War experience indicated that animals are less sensitive to irritant smokes than man, and it can therefore be assumed that suspended particles of these arsenicals in low concentrations do not exert severe irritating action upon

the eyes and respiratory passages of animals. With medium concentrations, the action upon the animal organism is considerable. With the high concentrations, there is a copious flow of tears, a spasmodic cough, nasal discharge, and labored breathing. In 15 to 20 minutes, the intense pain and symptoms begin to subside, and disappear in 1 to 2 hours without leaving permanent injury.[2] Similar observations are reported by Szablowski.[7] There is on file in the technical library at Edgewood Arsenal a report of an experiment performed about 12 years ago, in which a horse was subjected to a very high concentration of DM gas with apparently no injurious effect. While it is not believed that a single test on one horse is sufficient evidence upon which to base the conclusion that DM gas does not affect this animal, it appears possible that it may not become necessary to evacuate or treat horses following exposure to these relatively non-persistent agents, and that they can be put to work almost immediately after exposure.

Lachrymators

Lachrymators are agents which cause an irritation of the conjunctiva and lachrymal apparatus, producing a profuse flow of tears in man.

The principal lachrymators are chloracetophenone and brombenzylcyanide. It is generally believed that the horse is not affected by lachrymators. While many conflicting theories have been advanced by different observers explaining this lack of equine susceptibility, it is the opinion of the author that the intolerable concentration for lachrymator gases is higher for the horse than for man, and that average field concentrations do not have a very noticeable effect upon horses' eyes.

Lung Irritants

Lung irritants are chemical agents which, when inhaled, cause irritation and inflammation of the respiratory tract, and may be followed by asphyxia. Chlorine, chlorpicrin, phosgene, and diphosgene are compounds which illustrate the different types of lung irritants, and their action will be briefly outlined below.

Very reactive substances such as chlorine, or those which have a tendency to hydrolyze rapidly in the presence of moisture, will cause marked injury to the mucous membrane of the upper respiratory passages. Gases, however, which hydrolyze more slowly (phosgene) penetrate the lower respiratory passages rapidly and gradually exert their effect, but cause less damage to the upper parts of the air passages.

Chlorine.—This gas has the molecular formula Cl_2. The common method of preparation is by electrolysis of sodium chloride solution. Chlorine is a heavy, greenish-yellow gas, having a disagreeable odor and a powerful irritating effect upon respiratory passages. The inhalation of chlorine results in damage to the epithelial membrane lining the respiratory tract. The degree of injury depends upon concentration and exposure.

It is easy to protect against chlorine, because of its relatively low toxicity and its great chemical activity. Chlorine in itself has no great use as a toxic agent, its principal importance lying in its employment in the manufacture of

other agents. The discussion as to the effect of chlorine gas on horses will therefore be limited.

When death occurs immediately from high concentrations of chlorine it appears to result from constriction of the bronchioles; no inflammatory reaction is evident in the lower organs of respiration. However, in lethal concentrations where death is delayed, there is a necrosis of the tracheal and bronchial mucosa with congestion and formation of edema in these parts as well as in the lungs. In this case we can expect less edema of the lungs than would occur following intoxication by phosgene, although it develops more readily. Where death is further delayed, bacterial invasion of the damaged tissue occurs through the loss of normal protective epithelium of the upper air passages resulting in secondary bronchitis or pneumonia. Animals poisoned by chlorine develop a very painful cough; pulmonary edema occurs along with other toxic symptoms.[2]

Chlorpicrin.—Chlorpicrin is prepared commercially by action of chlorine on picric acid. Chlorpicrin is considered more persistent and less toxic than phosgene and is classified as a moderately persistent lung irritant. In addition to this property, chlorpicrin causes lachrymation, nausea, and vomiting in man.

Within 2 minutes following exposure of the horse to large doses of chlorpicrin, Soshestvienski[6] observed serious nasal discharge, licking, abundant salivation, and eye irritation evidenced by the horse partly closing his eyes; after 10 minutes there was an acceleration of respiration, coughing, retching, weak heart action, and a slight rise in temperature. With passing of time, these symptoms became more pronounced in severity and the horse died in a state of general weakness, difficult breathing, and weak heart action. In weaker concentrations, symptoms begin to appear in about 10 minutes, which consist of blinking of the eyes, salivation, serous nasal discharge, restlessness, coughing, dyspnea, and accelerated weak heart action; coughing up of foamy liquid, and a slight rise of temperature are also noted, and pulse and respiration are increased. The crisis is generally reached 8 hours after intoxication, followed by a change for the better.

According to Gilenmeister, Heubner, and Underhill, the anatomopathological alterations differ from phosgene intoxications in that the lungs are as a rule less enlarged, but have more atelectatic foci due to accumulation of blood; there is less pronounced edema, and the pathological alterations are located chiefly in the bronchi and bronchioles. Chlorpicrin is a cell poison, and may cause degeneration of organs remote from the place of resorption in the lungs, something which we do not have in intoxication with phosgene. Beyond this, section pathology resembles that of phosgene poisoning.[6]

Phosgene.—Phosgene (Carbonyl chloride) is a chemical agent formed from the combination of carbon monoxide and chlorine. It is a non-persistent lung irritant, more toxic than chlorine, and its physiological action differs in that it affects the lower part of the lungs to a greater extent than the upper respiratory passages. The effect is cumulative and in exposures to low concentrations over extended periods of time it will cause acute pulmonary edema, perhaps by hydrolysis within the lung tissue and the formation of hydrochloric acid.

In animals as well as man,[4] phosgene produces a widespread injury to the parenchyma of the respiratory apparatus, followed by a series of reactive phenomena which might be complicated by specific infection. Damage involves the lining cells of the bronchi, alveolar epithelium, and capillary walls. The early inflammatory reaction in the alveoli consists of an outpouring of fluid in which considerable fibrin may be present, crossing and obstructing the capillaries, and this offers an explanation for the increased resistance in pulmonary circulation, with a consequent dilatation of the right side of the heart in some cases. Inflammatory exudate originating in the bronchioles may at times spread into surrounding alveoli presenting a picture similar to an early bronchopneumonia superimposed upon an intense lung edema.

According to Szablowski,[6] horses poisoned by low concentrations of phosgene develop areas of edema in the lungs, the animals appear listless for 15-18 hours, and the temperature rises as high as 102.2°F., where it may remain for as long as 12 hours, returning to normal in 2 days. The respiratory rate may increase up to 50 per minute, returning to normal in about 2 days. There is an immediate decrease in pulse rate, followed by acceleration within 10 hours, which lasts 2 to 3 hours and recedes to normal during the following 24 hours, when complete recovery occurs. In horses exposed to small concentrations of phosgene the only observable symptoms may consist of slight coughing. In poisoning following large concentrations, horses appear restless and perspire excessively, and there is an abundant seronasal discharge; these symptoms disappear when the animals are removed from the gassed atmosphere. The condition of the animal does not appear bad, and after 6 or more hours have passed, this so-called period of remission is followed rapidly by considerable loss of strength and the respiration increases and maintains a rate above normal. Auscultation reveals evidence of edema in the lung (rales) and there is a dry, painful cough. The pulse is accelerated and weak. The animal may recover as symptoms gradually subside; or death may occur. The cause of death is generally acute edema of the lungs; however, this may be accompanied by a secondary circulatory embarrassment with dilatation of the right heart, bringing death due to circulatory collapse.

Severely gassed patients may suffer from circulatory collapse as shown by the grey pallor, a rapid feeble pulse, and by venous congestion and dilatation of the right heart (never of the left). The circulatory collapse is aided by the following conditions: the local condition of the lungs; by a compression of the capillaries and veins resulting from edema of the lungs; and by the increased viscosity and thrombosis of the blood caused by the transudation of plasma into the lung tissue, thereby reducing the more fluid portion of the circulating blood.

In casualties occurring as a result of lung irritant *poison-*

ings during the World War, venesection was introduced as a measure to relieve circulatory embarrassment that is evidenced most frequently in animals gassed with phosgene. Neither the clinical nor the experimental data are quite conclusive as to its efficiency for saving life, but the balance of evidence is in its favor. Clinical relief is often striking in these cases, especially in the early severe cases with deep blue cyanosis and full pulse (corresponding to acute asphyxial dilatation of the heart).[9] The relief, however, may be only temporary.

Bleeding must not be used when collapse has started, as indicated by poor pulse; or when the condition of the patient is in any way immediately dangerous. Venesection is therefore confined to the pre-edemic stages. It is indicated only within ½ to 1 hour after intoxications with lung irritants. After phosgene intoxication, venesection may prove beneficial up to 4 hours after poisoning.

The beneficial action of venesection may be explained by saying that although the osmotic tension of the blood is not changed, the pressure ratio between the circulation and the tissue is suddenly changed. This leads to a subsequent dilution of the blood with water from the tissues. In untreated gas poisoning, the passage of fluid into the lung takes place gradually in the course of hours, so that no sudden variation of pressure between the blood and tissues occurs. Venesection makes an abrupt and pronounced change of pressure in the opposite direction. It thus not only halts the increasing pulmonary edema and thereby aids the patient in obtaining oxygen from the air, but by the resultant dilution of the blood, it makes a freer circulation possible and thus reduces the anoxaemia of the tissues, and relieves the cardiac embarrassment.

"In intoxications resulting from diphosgene, anatomopathological changes are essentially the same as those caused by phosgene."[6]

Even light physical exertion is harmful to animals gassed with phosgene or other lung irritants, since it places additional work on an already overtaxed heart, and causes a greater demand for oxygen. Exposure to concentrations of phosgene high enough to cause sudden death will rarely occur, unless the animal is in the immediate neighborhood of a gas-shell burst. In such an event, destruction of the respiratory epithelium occurs, and death is caused by asphyxia as a result of rigid contraction of the bronchi.

The pathology of animals gassed by lung irritants varies in intensity, depending on the factor of concentration and time of exposure to the agent. In poisoning with asphyxiants, as well as with other combat gases acting upon the respiratory system, infectious complications may appear, constituting an additional threat to recovery. When lung infections occur, they appear as foci of inflammation in branches of the bronchioles, and may embrace all the lobes of the lung, continuing to develop as the other symptoms subside. Inflammation of the alimentary tract is also a frequent complication.[6]

First aid and treatment applicable to lung irritant gassed animals should consist of some of the following measures: *a.* The first and most important procedure is evacuation to uncontaminated areas. This should be done in such a manner as to avoid undue exertion by removing pack, harness, etc., and evacuating at a slow walk. Warm coverings should be used in cold weather. Because of the delay in the appearance of symptoms, phosgene gassed animals may appear in good condition even though they are seriously injured, a condition which may not be evident until a few hours after gassing. If animals are allowed to exert themselves during this period, recovery may be made more difficult. *b.* Casualties should be kept quiet, supplied with plenty of fresh air and water, kept warm and out of draughts, supplied soft foods, and allowed individual stalls with suitable bedding free of dust. *c.* Among the first of the curative means is an early blood letting as advocated by Szablowski[6]; 0.5 per cent up to 1 per cent weight may be drawn. Venesection is based upon the following theories: Venesection decreases the quantity of blood; it may decrease the possibility of large quantities of blood plasma passing to the lung during the period of edema formation; and avoids the considerable accumulation of the red corpuscles in the vessels of the lungs and of their excessive filling with blood. If, after the first bleeding, the quantity of hemoglobin remains at a constant level, there is then no indication for a repetition of this measure. If the amount of hemoglobin begins to increase, this is an indication of thickening of the blood and venesection should be repeated. A smaller amount should be taken on repeated venesections. *d.* Oxygen may be administered either by mask, by subcutaneous injection, or by intravenous injection as advocated by Richter.[2] *e.* Non-alcoholic stimulants are indicated and expectorants may be used advantageously. *f.* Morphine and like depressants are contra-indicated. *g.* Eye irrigations with boric acid or weak salt solutions should be useful in cases with eye irritation.

Should complications arise, treatment should be modified to cope with individual symptoms as they may arise, since special therapeutic measures may not be applicable to all cases.

Vesicants

Mustard gas, Lewisite, and Ethyldichlorarsine.—These are the principal vesicant war gases at the present time. Mustard gas became a most important chemical warfare agent in the World War due to the difficulty of providing protection against it. The gas mask, when properly used, gives complete protection to the lungs and eyes of man against vesicant agents, which also attack any part of the body with which the liquid or vapor comes in contact.

Mustard gas.—This is a compound of hydrogen, sulfur, and chlorine, having the formula $(CL\ C_2\ H_4)_2\ S$ and known chemically as BB[1] dichlordiethylsulfide. It is not only a highly vesicant substance, but also a powerful lung irritant. Unlike chlorine and phosgene, it does not cause extensive lung edema but attacks the whole respiratory system, producing inflammation of the trachea and bronchi with necrosis of the mucous membranes and development of secondary bronchitis or bronchopneumonia.

This agent has no immediate irritant action on the peripheral nerve endings, consequently there is no pain evident for several hours after exposure.

Mustard action upon the eye.—There are few discussions in the literature concerning mustard injury of the eye of the horse, and the available discussions come mostly from World War experience. Mustard exerts a degenerative and necrotic action on the cornea. Injury to the conjunctiva is shown by the development of a catarrhal seropurulent conjunctivitis, with marked edema of the subconjunctival tissues leading often to entropion or ectropion. Less severe cases run a chronic course with disturbances and reduction in vision. In severe cases cicatrization and vascularization of the cornea takes place slowly with impairment or loss of vision. The affected eye is more susceptible to infection, and in infected cases suppurative panophthalmitis may develop with complete destruction of the eyeball.[4]

Treatment of the eye should consist of long continued irrigation with lukewarm aqueous solutions of sodium bicarbonate, which may aid in removing any uncombined agent which may be present. Irrigations with boric acid solution aid in preventing some of the secondary infections which follow eye burns. Cod liver oil or bland lubricants may be applied to the corner and lids of severely burned eyes. Animals should be kept in dark stalls. Use of 1 per cent creolin ointment about the margin of the eye is useful in keeping flies away.

Mustard action upon the digestive tract.—Through the swallowing of forage and water contaminated with vesicants, corrosive action upon the alimentary mucosa may be produced, varying from a catarrhal inflammation to large areas of eschar formation that may result in rupture. Richters[2] repeatedly observed injuries in animals pastured on mustard poisoned terrain from consuming contaminated forage or water. The entire alimentary tract along which such material passed exhibited inflammation, erosion, and formation of ulcers. Inflammation and swelling of the mucous membrane of the mouth occurred along with the formation of typical mustard vesicles. The injury to the gastrointestinal tract is manifested by a thin, watery blood-tinged diarrhea, and emaciation accompanied by great debility. Treatment of these alimentary effects should follow general symptomatic measures.

Mustard action upon the organs of respiration.—There have been few investigations reported on the action of mustard in the respiratory tract of horses, and these were made largely during the period of the World War. Under field conditions mustard injuries of the respiratory tract and of the eyes of horses will be very rare, yet they may occur as the result of long continued action of mustard vapor.[8] These mustard gas injuries produce an inflammation of the epithelium as shown by the development of a catarrhal, desquamative, membranous, diphtheritic inflammation throughout the extent of the respiratory passages which decreases in intensity downward. Coryza and dyspnea are seen in conjunction with edematous and emphysematous lungs. As a result of secondary infection, a purulent bronchopneumonia may develop. The degree of injury from exposure of the respiratory passages to mustard presents a whole series of intensities, depending upon the size of dose and the duration of action. In the light cases, most likely to be encountered in field concentrations, injury to the respiratory passages and eyes of horses will not be extensive unless the animal remains in very heavy concentrations for long periods of time.[8] Under such conditions, inflammatory alterations of the throat and trachea occur, along with slight inflammatory changes of the conjunctiva. Changes in body temperature are barely noticeable and the heart action remains normal. Hyperemia of mucous membranes, coughing, and a flow of pus from nasal passages may occur. After about a week, recovery may be complete unless complications in the form of an inflammation of the bronchioles takes place, and in such an event the condition may completely change and bronchopneumonia may develop.

There is no special method for the treatment of horses poisoned by mustard through the respiratory tract, and such procedure is purely symptomatic.[8] The nasal passages may be washed with a solution of sodium bicarbonate or boric acid in an effort to remove any residue of mustard which may be present.

Mustard action upon the skin.—The sensitivity of the skin of the horse is about the same as that of man, however, there are portions of his body that probably are more sensitive. These are the cleft of the frog, the coronet, the bulbs of the heels, the posterior portion of the pastern, the axillae, the inside of the thigh, the sheath, the perineum, the genital organs, and other portions denuded of hair. Often permanent injury is a result of secondary infection invading mustard burned areas on the hoof or fetlock. The absence of blister formation on the skin of the horse can be attributed to the absence of a true corium, which forms the bottom part of the sac of the blister. Instead of a localized collection of watery fluid, there is a general diffusion into the tissues of fluid exudate which is one product of inflammation (edema). Ten to 12 hours following the application of mustard gas to the skin of the horse, the hair becomes roughened and the skin erythematous. This is followed by extensive edema around the area of application, which subsides only after several days, and is followed by sloughing of large areas of tissue. Here again the intensity depends upon concentration and time of exposure to either the liquid or the vapor.

Experiments carried out in the United States[4] list the pathological gross appearances of mustard burns upon the skin of the horse as follows: A few hours after exposure, a soft edematous area develops, which is slightly more extensive than the area of application. The extent of the edema varies with the site of application, being greater in the loose skin over the shoulders than upon the back or rump. In about 2 days the swelling begins to subside, and the area then differs little in appearance from adjacent normal skin, except that it is slightly smoother, more glistening, and, in certain cases, a shade darker. Superficial induration persists which upon palpation conveys

the sensation of a disk or plaque of cardboard inclosed in the skin. After a week or 10 days, a scaly desquamation is observed at the margin of the indurated area, which in the course of a week becomes sharply defined. The central plaque, composed of dead mummified tissue, becomes sequestrated from the underlying tissue, first at the margin, then eventually over the entire area until it is finally cast off completely. The necrosis of the epidermis takes place very gradually by a process of mummification in which there is no dislocation of the individual cells. Even after several weeks the basal cells are not disintegrated and their original nuclei are still recognizable as clear, oval spaces. A clumping and concentration of pigment occurs. Reparatory processes begin toward the end of the first week by an intrusion of a flat togue of regenerating epithelium between the superficial zone of necrosis and the underlying healthy tissue. The sheaths of the hair follicle play an active rôle in the regeneration, the cells proliferating and establishing connections with the epithelial processes growing in from the healthy margin. The new epidermis is at first pigment-free and contains many atypical cells.

A very slow rate of healing is characteristic of mustard gas injuries and first aid treatment should be employed to shorten the healing time. The success of such treatment depends upon the speed with which it is used after exposure, the best method being one which can be applied easily and quickly, since such measures will not prevent injury if attempted later than 10 minutes after contact with mustard. The longer the treatment is delayed, the worse the injury will be.

When contaminated animals have to be treated, the attendants must wear respirators and protective clothing. The tail should be secured by tying or holding, and the saddlery and harness, which is probably contaminated, should be removed. When contamination is widespread and is not accurately defined, the animal should be completely and vigorously scrubbed with soap and water. Warm water, soda, and soft soap are usually convenient and are satisfactory. Plenty of water should be used and the washing continued for 20 minutes. Weak solutions of chloride of lime are reported valuable for rinsing, and potassium permanganate solutions are somewhat effective in neutralizing mustard gas on contaminated animals by oxidation. The skin should be thoroughly scrubbed with a paste made of freshly prepared bleaching powder and water, care being taken to avoid the eyes, nostrils, and lips. Bleach-paste is irritant, and should not be left on the animals longer than 5 minutes; it can be removed by flushing with water. Weaker solutions may be applied for longer periods.[8]

Where contamination is local and clearly defined, the visible drops should be removed mechanically with cotton, wool, waste, or rags, care being taken not to spread the contamination to the surrounding parts. Destroy immediately by burning any material used in mechanical removal of the agent. In some cases it may be advantageous to swab these areas with solvents such as gasoline or kerosene. It must be remembered that the agent is merely diluted with these solvents and is not destroyed, and that care should therefore be taken not to spread the contamination to surrounding parts when swabbing with solvents. Neutralization of the contaminant should be performed with the same agents as listed above.

Treatment of gas cauterized areas to prevent secondary infection can be accomplished with moist Dakin's solution packs. Zinc paste or petrolatum may be used about the margin of wounds to prevent blistering from exudates.

Lewisite.—This was first produced in the United States, but not in time to be used in the World War, as the first shipment was made to France at about the time the Armistice was signed. Lewisite lesions are more severe than those from mustard, and the burns are immediately painful. In addition, there are systemic effects from absorption of arsenic. Because of the powerful vesicant action and systemic effect, this gas was termed "The Dew of Death." In the presence of moisture lewisite hydrolyzes to form a non-volatile oxide. This one great disadvantage leads to the belief that it will not be used extensively in coming wars.

Ethyldichlorarsine.—While this is less vesicant than mustard and lewisite, it is stable to hydrolysis, and is less persistent than mustard gas.

Little experimental work has been done to determine the effects of lewisite and ethyldichlorarsine upon the horse.

Phosphorus.—When animals are burned by particles of phosphorus the first thing which should be attempted is to exclude air from the affected parts. Such temporary measures include the application of mud or water, followed preferably by 2-5 per cent copper sulfate solution, which coats over particles of phosphorus and prevents their burning action until the particles can be manually removed.

Hydrocyanic acid and carbon monoxide.—These have not been used extensively as war gases. Carbon monoxide may be formed due to shell explosions; however, no records seem to be available that show any extensive carbon monoxide casualties to horses in the World War.

Protection

In affording individual protection to horses, attention has been directed mostly to the lungs and hoofs. During the World War the Americans developed horse gas masks that gave some lung protection. Horse boots were also devised and used during the World War to protect the hoof and lower leg. However, neither mask nor boots were considered highly satisfactory. Work is now being conducted on the development of a more satisfactory horse mask and a more desirable method of protection for the hoof and lower leg.

Consideration should also be given to the development of preventive measures which will lessen casualties among groups of animals held in recently contaminated areas, or in areas of tactical importance that are likely to become contaminated with chemical warfare agents.

Stables and veterinary hospitals should be placed a sufficient distance from the front lines to eliminate as far as possible exposure to gas attacks. Locations for stables, etc., should be carefully selected so as to avoid small valleys and ravines where high concentrations of gases are likely to occur. Locations near roads and strategic points would likely prove hazardous, since they are likely targets for gas and high explosive shell.

Buildings in which animals are sheltered should have holes and cracks sealed; mud and grass may be used as sealing materials to cut down drafts and prevent seepage of gas from the outside air. Windows and doors should be provided with curtains or blankets, which, in addition, may be soaked in gas-neutralizing solutions of hexamethylenetetramine, or sodiumthiosulfate solution. This type of shelter can be used as a non-ventilated temporary gas shelter and would probably afford partial protection from persistent gases and good protection from non-persistent gases.

Animals should be prevented from pasturing in localities or drinking from water holes, trenches, or shell craters in areas which have recently been contaminated with gas. It can not always be determined by sight or smell whether suspected water and forage is contaminated with gas. Water may sometimes have a film of mustard gas upon its upper surface which can be detected by sight or smell. In case plants and grasses have been contaminated by mustard gas, lewisite, chlorine, or phosgene, this condition might be recognized by a peripheral withering of the foliage or by drying of the shoots.

It is the author's belief that forage and water moderately or heavily contaminated previously by vesicant gases or irritant smokes should not be consumed by the horse. British and Roumanian authorities apparently support the views of Richters,[2] who contends that oats contaminated by mustard gas can be made fit for consumption by washing thoroughly with hot water; and that hay, after mild exposure to mustard vapor, can be decontaminated if it is exposed in thin layers to the action of the sun and aired thoroughly by turning frequently for at least 1 day. This same procedure should be satisfactory on forage following exposure to field concentrations of chlorine, phosgene, and diphosgene. Forage contaminated with chlorpicrin can be decontaminated by exposure to air, but chlorpicrin is stable to heat and hydrolysis. Forage contaminated with lewisite, diphenylaminchlorarsine, and diphenylchlorarsine should be destroyed, since it cannot be decontaminated by exposure to air or water. Forage is best protected by impervious coverings or by storage in air-tight shelters when in areas likely to be contaminated by gas. In contaminated areas water should be withheld from animals until suitable tests have demonstrated the absence of injurious agents. Water in large running streams, deep wells, or large lakes where the factor of dilution is great, can usually be regarded as non-toxic.

Summary

A general summary of available information in regard to the horse in chemical warfare has been presented, with special emphasis on the pathological action of chemical warfare agents, and on the prevention and treatment of gas casualties. It should be emphasized that there is a definite paucity of experimental data on these subjects in available literature relating to the horse. What information is available comes from foreign experiments. Since it appears that the horse shall play his rôle in coming wars, it seems desirable that experiments to determine accurate war-gas sensitivities on the horse be carried out. Such information would aid substantially in producing suitable individual and collective war gas protection for these animals.

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[5]*Annual Report of The Surgeon General, U. S. Army,* 1920.
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Smoke!

Unit Training Activities

Fifth Cavalry—Fort Clark, Texas

COLONEL HENRY J. M. SMITH, *Commanding*

The training of the 5th Cavalry for the period November 1 to December 21, was a continuation of training conducted in October and emphasis was placed on the training of individuals and small units, both mounted and dismounted. In addition, all supplementary firing was completed and the special troops practiced long range, moving target firing with the heavier calibered weapons. Squad combat problems were fired during this period.

Headquarters and Headquarters and Service Troop stressed the training of the Transportation, Communications and Scout Car Platoons. Two command post exercises were held with installations at reduced distances, the second of which included contact with aviation. All personnel habitually riding with the trains were given instruction in the use of the train defense weapons.

Major Hugh T. F. Hoffman was designated officer in charge of the 5th Cavalry Detachment which participated in the Armistice Day International Exposition at Eagle Pass Texas. The detachment consisted of the 5th Cavalry Band, Scout Car Platoon, First Platoon Troop "E" portée Cavalry and the Maintenance Truck.

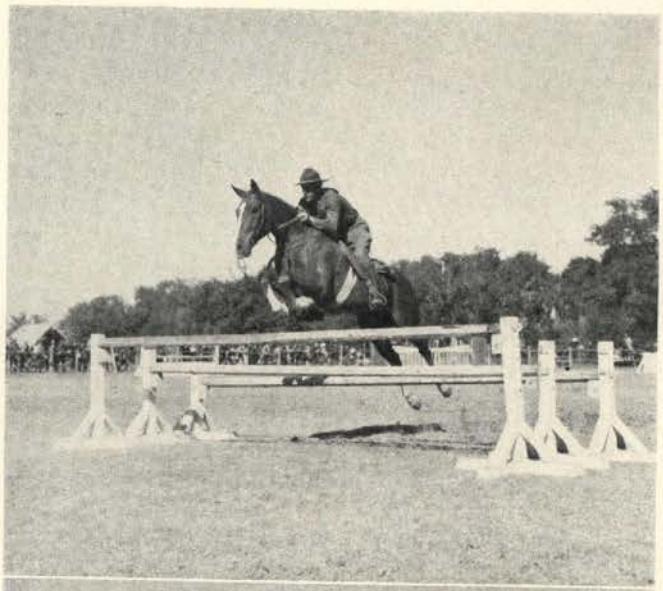
A horse show was held at Fort Clark, November 16. Following is a list of events:

1. Green Polo Ponies.
2. Recruit Horsemanship.
3. Open Polo Class.
4. Junior Officers' Jumping.
5. Recruit Jumping.
6. Novice Jumping.
7. Officers Open Jumping.
8. Bull Durham Race.
9. Riduculous Entry.

Pictures are included of Recruit Jumpers and Ridiculous Entries.

During the month of November the Post Quartermaster received 240 remounts from the depot at Fort Reno, Oklahoma, 228 of these animals were assigned to the 5th Cavalry. It is expected that the 5th Cavalry will receive 600 more remounts which will be shipped to Fort Clark early in January.

Although the 5th Cavalry is not a portée Regiment, quite a lot of time is spent in accustoming the animals to load and unload from the trailers. Three trailers are available and each troop is given an afternoon at intervals for this training. The afternoons of the period November 18 to 29 were used in this manner.



Recruit jumper and comic entries ⟶

Squad combat problems were conducted during the period November 18 to 28. These exercises proved to be splendid training for squad leaders, many of them having had limited service, at the time.

The personnel of Special Weapons Troop and Headquarters and Service Troop fired the Caliber .50 machine gun at moving targets at 600 and 1,200 yard ranges. This firing was done on Postell's Ranch approximately 20 miles North of the Post, since the Fort Clark range is not suitable for this type of firing. 91 men from Special Weapons Troop and 27 men from Hq. and Serv. Troop fired the course.

During the latter part of November and early part of December several training films were shown to the Regiment. Due to the limited capacity of the War Department theater, squadrons saw the films on alternate afternoons. The following films were shown:

Infantry Close Order Drill.
First Aid.
Motor Maintenance.
Map Reading.
Machine Guns in the Defense and in the Attack.
Chemical Warfare.

On November 18 all organizations of the 5th Cavalry started dismounted training under Infantry drill regulations. Prior to this date troop officers and non-commissioned officers were given instruction in the new drill in troop schools.

Pictured below is the Officers' equitation class which commenced on Monday, December 2. The class is composed of all officers of the 5th Cavalry who are not graduates of the nine months' course at the Cavalry School.

An excellent and very useful outside riding hall has recently been completed. The floor of the hall consists of 3 inches of caliche evenly spread; over the caliche was placed a two inch layer of sawdust, shavings and tanbark. This layer of tanbark was covered with 3 inches of sand.

Due to the increase in demand for Regular Army regiments to furnish cadres for newly activated units the 5th Cavalry has recently organized many special schools within the Regiment. The Commanding Officer, Troop "B" is conducting a school for Bakers and Cooks. Approximately twenty extra cooks are being trained to take their places on outgoing cadres or to take the places of experienced personnel which will be sent out in the cadres.

A school for motorcyclists is running at the present time. Running concurrently with the motorcyclists school is a school for Scout Car Commanders and Scout Car Drivers. Twenty-seven motorcyclists from the 5th Cavalry have been designated as parts of cadres to activate the Division Antitank Troop, Division Reconnaissance Squadron and Brigade Weapons Troop.

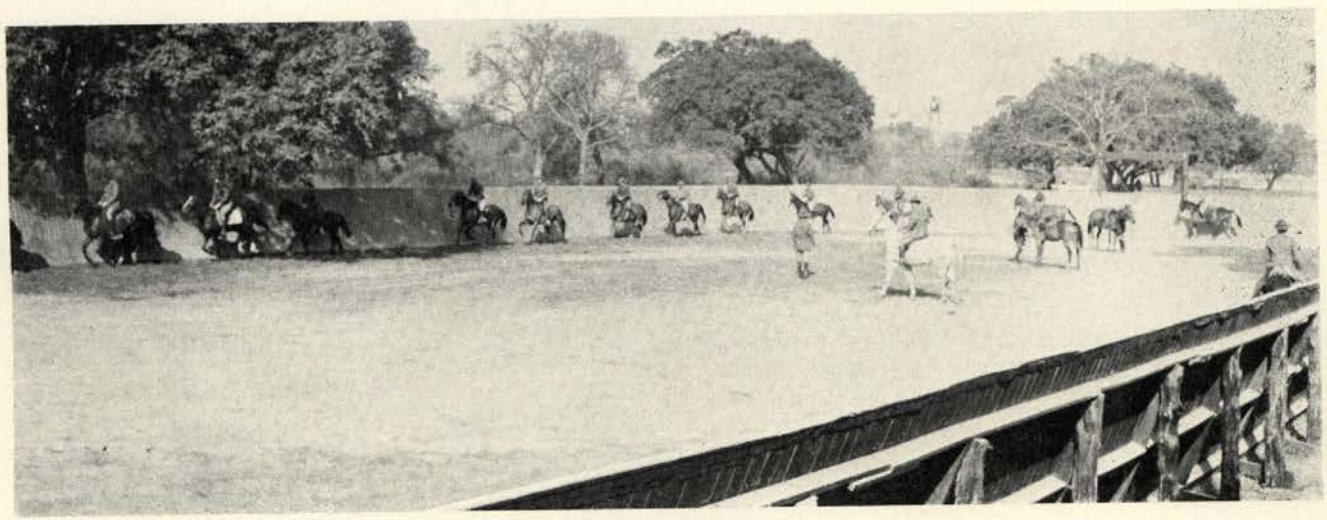
There is not a definite date yet set for activation of the above mentioned organizations but it is thought that it will be done very shortly.

A Regimental Intelligence School was conducted during the period November 12 to December 12. The class was composed of the Intelligence Section, Headquarters and Service Troop and 3 specially selected men from each troop. Scouting and Patrolling, Map Reading, Sketching, Use of Compass, Reconnaissance and Message Writing constituted the major part of the instruction given. The instruction was about evenly divided between class room work and outside practical exercises.

The 5th Cavalry received its first group of recruits coming into the Army under the Selective Service Act, on Thursday, November 28th. There were 102 men in this group, 32 were classified for the Medical Detachment, 5th Cavalry, and the remaining 70 were distributed among the line organizations according to their respective desires. Their 6 week recruit training began the following Monday. The men appear to be of high type and are entering into their training with high morale.

Division Commander's Inspection

Major General Robert C. Richardson, Jr., U.S.A.,



Outside riding hall

Commanding the 1st Cavalry Division, inspected elements of the 1st Cavalry Brigade at Fort Clark, Texas, on December 9. The inspection started with a review in full field equipment. Following the review, the motor transportation was inspected. While inspection of the motors was taking place, each troop moved to their respective drill areas where General Richardson inspected equitation, jumping, close and extended order drill.

Two rifle platoons (reinforced) were chosen at random by the Division Commander. One platoon was given a defensive problem and the other an offensive problem. The Division Commander observed the conduct of each. Concurrent with the platoon problems, the Brigade, Regimental and Squadron Command Posts were set up. A test was run as to the time required to encode, transmit and decode a message from top to bottom. The procedure was then reversed and timed from bottom to top.

The Recruit Detachment was inspected at both mounted and dismounted drill.

Two squad combat problems were conducted immediately after noon. The squads were chosen by the Division Commander during the morning inspection. Following these exercises light, heavy and Caliber .50 machine gun platoons were fired on the 1,000 inch range.

Following the firing, General Richardson conducted a detailed inspection of troops, under arms, dismounted; the barracks and stables.

The following morning the Division Commander departed to the lower Rio Grande Valley to inspect the 12th Cavalry.

* * *

Troop "A," 5th Cavalry, entrucked on the morning of November 12, for a march to Camp Bowie, Brownwood, Texas. Troop "A" was sent to Camp Bowie for duty in connection with the receipt and storage of supplies pending completion of the Camp. The troop rejoined the Regiment on December 18th.

Lieutenant Colonel Tom S. Brand, Inspector General's Department, 8th Corps Area, inspected the Regiment November 13 and 14.

A Message Center School composed of the Message Center Section, Communications Platoon, Headquarters and Service Troop plus two students per troop was commenced on November 18. Special emphasis is being placed on ciphering, deciphering, general message procedure, files and codes.

Platoon Tests

In compliance with T.M. No. 62, 1st Cavalry Division and T.M. No. 1, 1st Cavalry Brigade, c.s., platoon tests were conducted by Squadron Commanders on December 18, 19, and 20. The tests were divided into mounted and dismounted phases. All Lieutenants were required to command platoons during the tests regardless of their present assignment.

The mounted phase covered the following:

Close order drill.
Extended order drill.
Patrol formations.
Advance guard.
Equitation and Jumping.

The dismounted phase covered:

Close order drill.
Combat orders.
Combat formations.
Principles of musketry.
First Aid and Hygiene.

* * *

New Mortar Hangers Developed

When the 81-mm. Mortar was recently included as armament for Cavalry Regiments there were no available hangers for the weapon. *First Lieutenant Irwin A. Edwards, 5th Cavalry, Commanding Special Weapons Troop, and Sergeant Joe Clyburn* experimented with hangers to be placed on the Phillips Pack Saddle to carry the weapon.

Lieutenant Edwards has produced a very serviceable set of hangers. Following are his comments and the specifications of the hangers using pictures for explanation purposes:

"The hangers for the 81-mm. Mortar provide a mounting for the tube on the near side of the pack, the bipod on the off side and the base plate on top with the rear to the left. This disposition aids in counter-balancing the three pound difference in weight between tube and bipod. The base cap of the tube is mounted forward with the balance point slightly in rear of the front retainer. The weight of the base plate is equally distributed on the longitudinal lines of the pack, and the bipod is mounted with the clamp and traversing mechanism forward. While this distribution places the load a bit high most of the weight is well forward thereby freeing the haunches and allowing the horse a greater and faster mobility which affects any tendency for him to become over balanced.

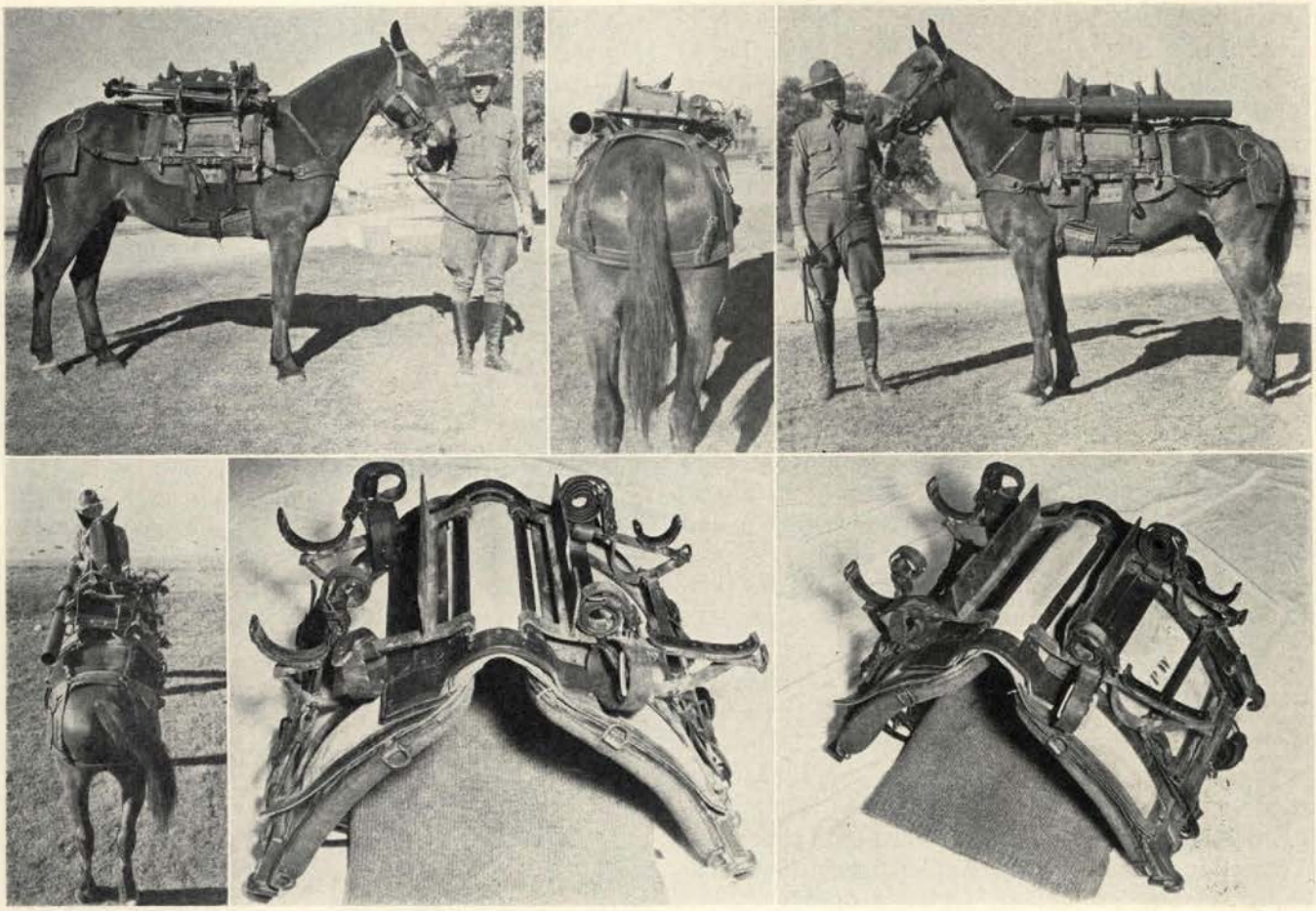
The Mortar Platoon has been able to travel over rough terrain and through heavy brush at the same gaits as the two .50 cal. MG Platoons of the Special Weapons Troop. At the end of a twenty-two mile march at an average speed of 7.5 miles per hour the pack horses transporting the Mortar were in excellent condition and displayed no lameness or soreness in their backs.

So far by all the tests that have been given, the Mortar pack rides as well as the .50 cal. MG and is a little lighter in weight.

The hangers are spot welded which makes them a great deal tougher and more serviceable than they would be if rivets were used."

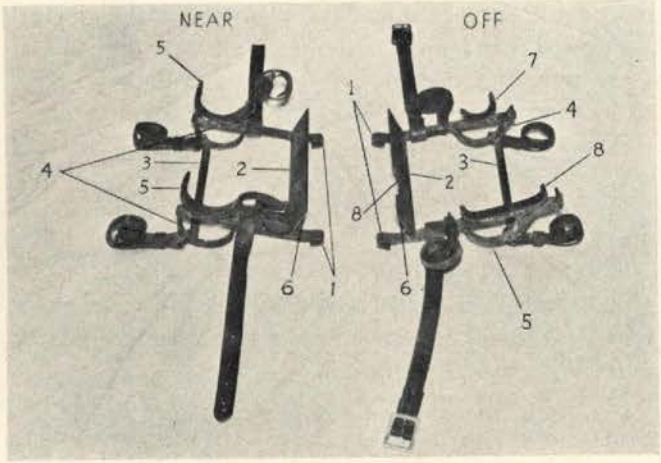
Dimensions

All material used excepting the base retainer is 1"x ¼" strap iron.



Near side Hanger
Weight 8.5 lbs.

1. Hanger Bars (overall length) .... 13″
2. Top Cross Piece (overall length) . 11″
3. Bottom Cross Piece (overall length) 11″
4. Hanger Leg (overall length) ..... 8¾″
5. Spread of hanger leg ..... 5″
   Height of hanger leg ..... 3″
6. Tube Retainers (overall length) .. 7¾″
   Spread of Tube Retainer ..... 4″
7. Base Plate Retainer ..... 3″x12¾″x¼″



Details of hangers

Dimensions
Off side Hanger

1. Hanger Bars (overall length) ..... 13″
2. Top Cross Piece (overall length) .. 11″
3. Bottom Cross Piece (overall length) 11″
4. Front Hanger leg (overall length) .. 8⅝″
   Spread ..... 5¼″
   Height ..... 2-9/16″
5. Rear Hanger leg (overall length) .. 12-7/8″
   Spread ..... 8¼″
   Height ..... 3-7/8″
6. Base Plate Retainer ..... 12¾″x3″x¼″
   A notch ½″ deep x 2″ long and 9″ from the front of the retainer is made as recess for the base plate link.
7. Front Bipod retainer (overall length) 4½″
   Spread ..... 2½″
8. Rear Bipod retainer (overall length) 7½″
   Spread ..... 6″

Editor's Note: *This article was set in print before The Cavalry Board approved a similar hanger. There is little change, however, except that the tube is carried as a top load and side loads tower. The Pilot model is now under test and probably will be in production at an early date. We congratulate the 5th Cavalry on its initiative and ingenuity.*

The Bantam

Sixth Cavalry—(Horse-Mechanized) Fort Oglethorpe, Ga.

LIEUTENANT COLONEL JOHN A. CONSIDINE, *Commanding*

The Sixth Cavalry was invited to Atlanta, Georgia, to participate in their Armistice Day Parade. Leaving Fort Oglethorpe the Saturday before Armistice Day, the Sixth marched to Atlanta in less than six hours. The practice polo field at Fort McPherson proved to be a very fine camping ground, even though it rained intermittently from soon after our arrival until after we had returned to Fort Oglethorpe. On Armistice Day Lieutenant Colonel Considine led the Sixth, parading down Peachtree Street. The holiday crowds were very interested in seeing a Cavalry regiment completely on wheels. Everyone was most impressed with the portée equipment and the complete organization and equipment carried in each trailer. The motorcycles and scout cars added to the color of the Sixth Cavalry on parade.

After the parade the regiment turned towards Fort Oglethorpe, arriving there at four o'clock the same afternoon. For the newcomers in the regiment the whole trip was very interesting and instructive, but for the majority of the members of the regiment it was hardly more than another road march.

Due to the intensive building program at Camp Peay, Tenn., Troop E was ordered up there for military police and administration of the camp. Captain William O. Heacock, Commanding, with 1st Lieutenant Robert E. Snelling and 2nd Lieutenants Howard M. Trapp, James W. Cooke, Roger F. Starr and Robert L. Taylor and 127 men with all their scout cars and much of the rest of the troop's equipment arrived at Camp Peay on November 18. Troop training and troop schools are maintained at high standards despite the demands of the troop's new duties.

Lieutenant Colonel Gersum Cronander reported for duty with the Sixth Cavalry on November 22. Five days later he took over command of Camp Peay. At this writing all Sixth Cavalrymen are expected back from Camp Peay sometime in January.

Lieutenant Colonel Paul J. Matte (Cav.) reported to the post for duty on December 21, 1940 and is assigned to Headquarter and Station Complement C. A.S.C.

For December and January the regiment has had approximately 11 officers and 51 enlisted men on duty with the Induction and Reception Station at this post.

First Lieutenant Glenn Fant and 9 men went to Butler, Penn., and took driveaway delivery of 8 Bantams on the 16th of December. The road march home, by way of Fort Hayes and Fort Knox, broke in the vehicles so that on their arrival at Fort Oglethorpe, they were ready for tests.

Lieutenant Colonel Considine personally put these Bantams through every conceivable test. From sticking them in mud holes to towing a 37-mm. gun, the Bantams proved themselves to be very satisfactory.

* * *

Sixth Reconnaissance Troop—Fort Riley, Kansas

MAJOR M. E. JONES, *Cavalry, Commanding*

The troop received permission from the Adjutant General to fire the .22 caliber machine gun for their record firing as they have an excellent gallery range, and the weather prohibited firing the regular outdoor course. Consequently, a great part of November, December and January was spent conducting this record firing. The troop also spent a week in December firing at field targets, both moving and stationary, with .30 caliber, .50 caliber, and Thompson sub-machine guns.

On December 13th, Lieutenant Creamer was graduated from the Advanced Communications School and Lieutenant Brackett was graduated from the Advanced Motors School. These two officers are now on duty with the troop as Communications Officer and Motor Officer respectively. Lieutenant Nelson is now in the Communications School and Lieutenant Davies is enrolled in the Motors School.

On December 15, the troop received twelve more new scout cars, six of their own, and six which the Cavalry School has loaned to the troop for training purposes. Twelve new Indian motorcycles were also received in the same shipment. In attempting to teach everyone in the troop to become a good driver, the sixteen scout cars and twelve motorcycles are kept rolling practically all the time.

Seventy of the eighty-two men which the troop had enrolled in the Post Radio School graduated on January 11, 1941. The men we had in Mechanics School, Motor School, Armorers School, and Bakers & Cooks School also graduated on January 11, 1941. It is contemplated on taking several field trips after the middle of January, provided our field kitchen and maintenance equipment arrives by that time.

The troop participated in a review for the commanding general of the 2nd Army, Lieutenant General Ben Lear, on December 17, 1940. On December 20th, an all day inspection of the men, quarters, vehicles, and

state of training was made by Colonel Sprinkle, who represented the Commanding General of the Sixth Division. The troop feels very proud of the results of this inspection, for the official report submitted to the Commanding General of the 2nd Army contained only complimentary comments.

Due to the liberal policy of the War Department in regard to Christmas furloughs, nearly one hundred men went home for the period from December 22, to January 2, 1941. On the night of the 21st of December, the troop gave the men a fine send-off when we had our first Troop Party in the Post Gymnasium. Music was furnished by the Ninth Cavalry Band, and everyone had a fine time.

11th Cavalry—Imperial, California

COLONEL HAROLD M. RAYNER, *Commanding*

Pausing briefly to salute a badly bruised 1940 as it staggered off to its rest billet in history, the 11th Cavalry has plunged into the first month of the new year for an intensive push to accomplish:

Complete reconnaissance of all critical points between the Pacific Ocean and the Yuma Sector;

Completion of training under the MTP's to bring both squadrons to required efficiency;

Organization of three new troops of the Regiment;

Training of 800 remounts within the next three months;

Training of a like number of selectees and recruits;

Organization of specialist cadres for the Cavalry Replacement Center at Fort Riley;

Small arms firing for the entire Regiment.

Directing the Regiment's efforts on the seven-fold 1941 mission is the new Regimental Commander, Colonel Harold M. Rayner, who joined November 27, shortly after the 11th Cavalry had established itself in its new camp near El Centro. He is assisted by Lieutenant Colonel Alton W. Howard, S-3.

Aggressive action on over-extended fronts, with reduced strength, is nothing new for the Pacific Coast Cavalry outfit. During the past year the 11th Cavalry has accomplished successfully concurrent missions which involved, among other things, organization of an Engineer regiment, training of civilian components, security and screening missions for two different divisions, and rail and motor movements covering close to two thousand miles.

Tactical inspections of the 1st Squadron at Seeley, and the 2nd Squadron at Campo, are scheduled in January and early February. Remounts, arriving in batches of 100 and 200 horses, will receive eight-weeks training and the first group of animals will arrive January 12. At the same time last-minute preparations must be pushed for the activation of Special Weapons Troop and Troops C and G on February 10. It is expected, also, that the Regiment's 70-man cadre for the Cavalry Replacement Center will be ordered to Fort Riley early next month. Rifle season, border reconnaissance and completion of regular training will be taken in stride!

Gains and losses among officer personnel during the past two months show: new arrivals: Colonel Rayner, to command; Captain Whitside Miller, who commands Troop B, and 2nd Lieutenants Thomas C. Chamberlain (Troop A), Herbert Bowlby (Troop B), Wallace G. Clement (Troop E), and James L. Smiley (Troop F). To new posts have gone Lieutenant Colonel John T. McLane who returns to duty with National Guard; Lieutenant Colonel Wayland Augur who will be the Cavalry Replacement Center executive officer; Major Alexander George to the Replacement Center as S-3, and Captain C. M. Iseley, who will assist Major George at Fort Riley. The re-shuffle has reduced the regiment to only one field officer.

Farewell gesture on the part of the City of Monterey in honor of the Regiment's 20-odd years of service on the peninsula was a bronze plaque presented in November—the occasion being the last Retreat parade on Presidio of Monterey's Soldier Field. The ceremony was held just before the Regiment entrained for Southern California.

12th Cavalry—Fort Brown, Texas

COLONEL ARTHUR E. WILBOURN, *Commanding*

The period of the last two months has been spent in intensive training prior to the movement of the 12th Cavalry Regiment to its new permanent station at Fort Bliss, Texas. This move is scheduled to take place around the first week in February, but definite details have not been issued. The Fort Brown Post will be occupied by elements of the 56th Brigade, National Guard, and a small detachment of Post Complement Troops of the Regular Army.

A cadre of 115 men recently left the regiment to join the Brigade Weapons Troop and 1st Division Anti-Tank and Reconnaissance Troops. To replace these vacancies a large number of recruits are expected to join the regiment very soon. Fort Brown now has about 100 men in a unit replacement center undergoing special one year's training, under the provisions of the Selective Service Act.

Specific training has included several regimental maneuvers stressing among other things, air-ground liaison, defense against aircraft and camouflage against air observation. These maneuvers were held in conjunction with units from Brooks Field, Texas. Numerous specialist schools have been added to training program and intensive training of cadres has been added to schedules.

The Division Commander, Major General Richardson, visited the Post December 12 and inspected the regiment in all phases of its work and training. He was accompanied by Captains Ruffner and Haskell, Operations Officer and Aide respectively. Brigadier General

Milliken, 1st Cavalry Brigade Commander, also inspected the Post December 3rd and 4th.

The officers of the Post have organized a very active Polo Association, Lieutenant Colonel Alexander B. MacNabb and Captain Charles J. Hoy are acting as instructors and coaches. Several teams are playing during all spare time. Most of the officers are training ponies from the excellent remounts recently assigned to this station.

The Commanding Officer of the 12th Cavalry, Colonel Arthur E. Wilbourn, has been appointed Inspector General, Eighth Corps Area, and will not accompany the regiment on its scheduled move to Fort Bliss. Colonel Wilbourn will be stationed at Fort Sam Houston, Texas, in his new position.

War Department orders of recent date have been received assigning Colonel Arthur H. Wilson, Cavalry, to duty with the Eighth Corps Area Service Command at Fort Brown; and Colonel Wilfred M. Blunt to duty with the 12th Cavalry. These officers are expected to join in the near future.

* * *

2nd Squadron, 12th Cavalry—Fort Ringgold, Texas

LIEUTENANT COLONEL FREDERICK R. LAFFERTY, *Commanding*

It was with deep regret that the 2nd Squadron learned of the loss of our Regimental Commander, Colonel Arthur E. Wilbourn. Colonel Wilbourn leaves the Regiment on January 10th to take over his new duties as Inspector General for the Eighth Corps Area and the 2nd Squadron wishes him all the success possible in his new assignment.

Many things have been happening to this Post so near the land of Mañana. Among the most interesting of these happenings has been the detailing of Cadres for the new Brigade and Division units now being formed at Fort Clark, Texas and Fort Bliss, Texas. Thirty men left this Post January 3d by motor convoy bound for the Brigade and Division posts to activate these different units.

The high light of the month of January will be the arrival of one hundred fifty remounts at this station, on or about the fifth of the month. The 2nd Squadron's time the balance of the month will be spent in training these animals and getting them ready to move with the regiment early in February to Fort Bliss.

Among other interesting events that have taken place at Fort Ringgold since the period covered by the last issue of The CAVALRY JOURNAL was the Leadership Test for small units, which was won by a platoon from Troop "E" 12th Cav. under the command of Lieutenant Levin L. Lee.

The 2nd Squadron is managing to find time on Sunday mornings to hold horseshows for both enlisted and commissioned personnel. Ribbons and prizes are being awarded the first four places. This all under the able direction of Captain Chandler P. Robbins, does a great deal toward bolstering morale and the spirit of competition runs high among the men.

Under the new expansion program this station has been very fortunate in that it has had its officer personnel enlarged to a total of thirty-four officers with a Major, Captain and Lieutenant of the Medical Corps and a Lieutenant of the Dental Corps yet to report early this month.

Visitors to the Post during the month of December included Major General Robert C. Richardson, Jr., the 1st Cav. Div. Commander; Brigadier General Walter B. Pyron, commanding the 56th Cav. Brig., and his party consisting of Lieutenant Colonels McFarland Cockrill and Ray T. Maddocks, Major Ashley Brewer and Lieutenant Fuller, aid to General Pyron. General Pyron's purpose in visiting this post was to inspect it before the occupation by a part of his brigade.

The 2nd Squadron has lost the following Officers during the last two months: Lieutenant John C. F. Tillson, III, to the Air Corps, Lieutenants L. L. Lee and Carl Schweitzer on detached service to the Basic Horse and Mechanized Course at the Cavalry School, and Lieutenant Dan S. MacMillan transferred to the Cavalry School Detachment.

The Chili Bowl, Ringgold's contribution to the athletic world is nearing completion. When this project is finished it will be used as a combination horseshow ring and athletic field.

The construction under way on the Post is coming along nicely. Troop "G" has moved into one of the newly reconditioned barracks and celebrated this occasion with a Christmas dinner in their new dining room. The other barrack is nearing completion and will be ready for occupancy within the next few weeks.

And this is the news from Ringgold,
Where the sands doth blow and the cactus grow.

* * *

13th Armored Regiment (L)—Fort Knox, Ky.

COLONEL R. E. MCQUILLIN, *Commanding*

The last few months have been busy ones for the regiment. In addition to the intensive training program, the regiment participated in a division review and gave a reinforced regimental tactical demonstration for each of the visiting groups of South American officers and for the Washington press representatives. The regiment also participated in the recent Division Command Post Exercise.

During this period the regiment has completed its range practice, plus the platoon and company tactical tests which were conducted by the 1st Armored Brigade. Emphasis has been given to road marching by battalions and larger units. Four over-night exercises have been conducted monthly. These have involved road marches of from 60 to 100 miles and usually have culminated in a concealed bivouac without lights, followed

by an early morning attack. Officer and non-commissioned officer schools are being held daily. Work for all begins promptly at 7:30 A.M. daily and continues until 5:00 P.M.

Early in January extensive individual training tests will be given company officers under Brigade supervision. These tests will cover all duties performed by company officers and should be of great value.

The selection and training of numerous cadres from the regiment is being given priority at the present time. This expansion will bring promotion to many men of the regiment, who, through schooling and personal application, have prepared themselves for higher grades and ratings.

In athletics our football team completed a successful season by defeating the 1st Armored Regiment (L), 26-6. Both being former Cavalry regiments, interest in the traditional game was especially keen. On December 20, a ceremony to include all officers, all 1st Sergeants and Regimental and Battalion Sergeants Major was held in honor of the team, at which time the Regimental Commander presented each member of the team with a suitable trophy.

The personnel of the regiment has been changing and increasing constantly. We now have 99 officers and 1,454 enlisted men. In the near future we expect an over-strength of some 350 selectees.

The regiment was not surprised when its Colonel, Jack W. Heard, was promoted to Brigadier General. We are sorry to lose General Heard, but glad to see him get the promotion which he deserves.

Major General Charles L. Scott, former Colonel, 13th Cavalry, September 6, 1936 until September 23, 1939, congratulating Brigadier General Jack W. Heard, former Colonel, 13th Cavalry and 13th Armored Regiment from September 24, 1939 until October 15, 1940 on the latter's promotion. Brigadier General Heard has just taken the Oath of Office and is about to inspect his first Guard of Honor which was furnished by the 13th Armored Regiment.

This event took place November 18, 1940 at Fort Knox, Kentucky.

26th Cavalry (P.S.)—Fort Stotsenburg, P. I.

COLONEL ROBERT BLAINE, *Commanding*

The 26th Cavalry's scheduled Beach Firing at water targets at Olongapo terminated October 30th. Troop "A," after having completed its beach firing relieved Troop "B" at Olongapo. Troop "B" then returned to Fort Stotsenburg.

On October 12, Major General George Grunert, Department Commander, came to the post sometime shortly after midnight and alerted the command. The alert was sounded at 3:15 A.M. and at 6:45 A.M. the command was ready to take the field for extended field service. The command passed before the Department Commander at 7:00 A.M. at the Clark Field Gate.

A party consisting of the American High Commissioner, Honorable Francis B. Sayre, Major General George Grunert, Commanding General, Philippine Department, Major General Jonathan M. Wainwright, Commanding General, Philippine Division, Brigadier General E. P. King, Commanding General, Fort Stotsenburg, Colonel Robert Blaine, Commanding Officer, 26th Cavalry (PS), Colonel Arthur W. Holderness, Headquarters Philippine Department, Captain John W. Raulston, Medical Corps, Captain William J. Priestly, (OUSHC), Captain John R. Pugh, Cavalry, and Second Lieutenant R. F. Parkhill, FA Res., left Fort Stotsenburg about 1:00 P.M. on the afternoon of November 15th. The party rode in open reconnaissance cars from the post to the first rendezvous at Camp Hand where the horses were waiting. While en route to Camp Hand the group was drenched by a mid-November cloudburst which necessitated the wearing of skid-chains on the cars and consequent delay in the schedule. The party arrived at Camp Hand at 2:30 P.M.—safe but wet.

Shortly after bidding good-bye and well wishes to

the ladies, the group mounted, and headed by Colonel Blaine, left Camp Hand on its second leg of the journey en route to Camp Sanchez arriving there at 5:15 P.M. The trail from Camp Hand to Camp Sanchez through Soldier's Road to Success, Sulit's Circle and Moore's and Garrison's Incline exhibited to all the varied terrain and beautiful tropical foliage of Philippine mountains.

On the morning of the 16th, the High Commissioner's party left Camp Sanchez to scale Mount Pinatubo. The ascent took two and one-half hours due to numerous halts to view the splendid surrounding mountain ranges and distant lowlands. Lunch was eaten while a camp-fire was built on the peak of Mt. Pinatubo. Unfortunately, the much heralded magnificent view of the Central Plain of Luzon and the China Sea across the range were not visible due to fog. Entertainment by a tribe of Balugas, climaxed by a Baluga War Dance, ended the day's itinerary.

Early on the morning of the 17th, the group, led by Colonel Blaine, left Camp Sanchez, en route to Santa Fe, Zambales, arriving there at noon. A battery of the 24th Field Artillery had established camp on the south bank of the Mapanuepe River. The party lunched and rested at the artillery camp and at 2:00 P.M. left for Manila and Fort Stotsenburg, thus ending the American High Commissioner's three day sojourn through the China Sea Trail.

The regiment regrets the departure, on the February transport, of Captain Robert E. Arnette, Jr., and Captain Robert H. Bayne.

The 26th Cavalry welcomes, to the regiment and the Philippines, the following officers (Cavalry Reserve) due to arrive on the February transport:

Second Lieutenant Ethon R. Cunningham,
" " William K. Boyd,
" " Paul K. Allen,
" " Robert C. Burlando, Jr.,
" " Warren A. Menton,
" " George J. Spies,
" " Frederick F. Thomas
" " Domineck Trogalia,
" " Henry D. Mark, and
" " Carol I. Cahoon.

306th Cavalry—Baltimore, Maryland

COLONEL MATTHEW F. JAMES, *Commanding*

At the first conference in November, Major John P. Dean spoke on his experiences in the Texas-Louisiana maneuvers of May, 1940. Major Dean commanded a Squadron of Regular Army Cavalry and the Cavalry set a fast pace and with hard, fast riding, lack of food and loss of sleep and constant contact with the opposing forces showed the ability of both horse and man to take a terrible beating day after day and still present a well disciplined and hard fighting outfit. This maneuver again demonstrated possibilities and value of our Arm. At the second conference in this month Captain Henry Sheen lectured on "the Assault: Hand-to-hand technique" and the ".45 cal. Sub-machine gun." Lieutenant Colonel George Milholland was our guest and talked on the "Selective Service" and the "Corps and Corps Area."

During December, Lieutenant Thomas E. Jarman, Jr. had the conference on "Attack Aviation and Ground Troops" and at this same conference movies were shown of "Attack Aviation." On December 11, the Baltimore Chapter, R. O. A., had Cavalry Night and the officers of Baltimore and vicinity attended instead of the regular conference. Captain Graham Dukehart was in charge of this affair and the guest speaker was Colonel Bruce Palmer, who talked on "Miscellaneous Developments of World War II." This talk gave an interesting insight on the material, personnel and morale of the British, French and German Armies, and gave a better understanding of the cause of the French collapse.

Additional officers of the Regiment are being ordered to duty with the Regular Army and shortly after the first of January, 1941 nearly all the eligible officers in Baltimore will be away.

308th Cavalry—Pittsburgh, Pa.

COLONEL GEORGE H. CHERRINGTON, *Commanding*

Increased interest and activity of the members of the regiment in unit meetings and Army Extension School courses is very gratifying, and notwithstanding the fact that a considerable number of the officers of the regiment have been ordered to active duty, the enrollment in Army Extension School courses is at a peak.

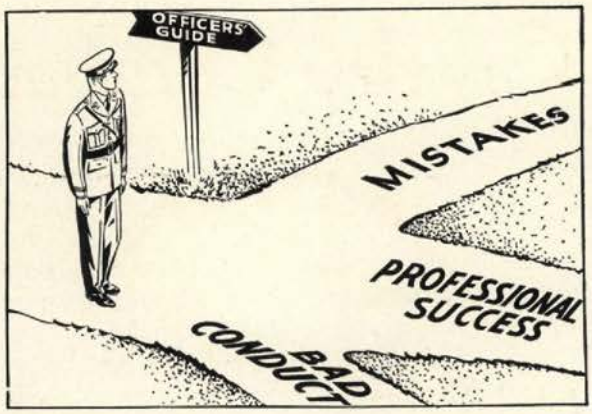
Blue C.M.T.C., 1940 graduates and White C.M.T.C., 1940 graduates who were recommended for the Blue 1941 course are working hard to complete the required Army Extension School courses to qualify for a commission.

Officers of the regiment continue to make a real effort to prepare themselves for active duty by continual study and exercise and by equipping themselves with uniforms and equipment suitable for whatever duty they may be called upon to perform.

The members of the regiment are deeply indebted to the following regular Army officers who served with the 308th Cavalry as Unit Instructors for their untiring efforts in behalf of members of the regiment:

Lieutenant Colonel Arthur H. Truxies,
Lieutenant Colonel Eustis L. Hubbard,
Lieutenant Colonel Louis G. Gibney,
Lieutenant Colonel Leslie F. Lawrence,
Major Alladin J. Hart.

★ ★ ★



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Book Reviews

A PRACTICAL MANUAL OF MARTIAL LAW. By Captain Frederick Bernays Wiener, JAG-Res. (Special Assistant to The Attorney General of the United States.) Military Service Publishing Company, 1940. 165 Pages; Index; $2.00.

The author clarifies for the layman in language readily understandable, the various ramifications and complexities of Martial Law—that branch of law which deals with the extent to which military forces may properly be utilized to sustain or restore civil authority, with the measures that may be used by such forces in time of domestic stress and, necessarily, with the rights and liabilities of military personnel in such situations.

This is an excellent guide for officers handling such cases for it tells clearly just what can and what cannot legally be done in martial law situations.

* * *

WHY FRANCE LOST THE WAR. By A. O. Reithinger. Veritas Press, Inc. New York. $1.25.

Reviewed by General Hawkins.

This little book, written by a German, from a very German point of view, is an attempt to show by statistical discussion of economics and man power, and almost without any reference whatever to military, political or spiritual values, that France was doomed from the very beginning of the War.

He shows that the economic distribution of France's man power was such that the drafting of a sufficient number of men for the Army was certain to interfere fatally with her industries. Also he shows how the biological or man power of resistance during wartime has declined in France in comparison with Germany and Italy since the World War. And he further states with convincing facts and figures that France's military victory in the World War was a Pyrrhic victory and a financial defeat which destroyed her position as a World Power.

Finally he concludes that the great tragedy of France is that the "Nation biologically weakest and most imperiled has made itself available for England's new coalition-war against Europe."

As such, the book is very interesting although the average reader will notice that the author has failed to attach enough weight to the character of a nation, to military efficiency and prowess, or the lack of it, and to the absence in France of a sound political system.

JUGGERNAUT OVER HOLLAND. By E. N. van Kleffens. Columbia University Press. 1941. 195 Pages; $2.00.

This book is a first-hand account of one of the most shocking instances of international duplicity. Its author —E. N. van Kleffens, Minister of Foreign Affairs for the Netherlands—describes the gathering of the clouds of war, and the breaking of the storm, as he, from the vantage point of his official position saw these events transpire. He tells of the efforts Holland's Queen made to prevent the conflict; of the lengths to which The Netherlands went in its efforts to achieve and maintain complete neutrality. He tells of the flying of German planes over Holland; of the sinking of Dutch boats; of the smuggling of Dutch police and postal uniforms into Germany; of the way men were kidnapped on Dutch territory and hauled over the border into Germany; of the parading and employing of hordes of German troops along the Dutch frontier; of German refusal to deliver munitions and arms which the Dutch had bought and paid for; and of the inexplicable growth of the German diplomatic staff at The Hague.

And all this while German actions were saying one thing, German words were protesting friendship and the best of intentions—how during this period, at the special request of the Nazis, Holland looked after German interests in Poland and South Africa. And then late in the evening of the 9th of May came word from the War Office: "Tomorrow at dawn; hold tight."

He tells of the war in the air; the bombing of the Queen's palace; the dropping of parachute troops; the emergence of the fifth column; the almost instantaneous creation of battlefields in the middle of cities far removed from the frontier; the destruction of Holland's airfields; the sacrifice of the entire Dutch air force; the appearance of German troops in the uniforms of Dutch soldiers; the terrorization of the populace; and the characteristic Nazi document presented by a somewhat embarrassed German envoy about to take his leave.

These are but a few of the many incidents herein recounted with restraint and in detail which make *Juggernaut over Holland* one of the principal documents of the Second World War.

* * *

PAN AMERICA: A PROGRAM FOR THE WESTERN HEMISPHERE. By Carleton Beals. Boston: Houghton Mifflin Company, 1940. 517 Pages; Index; $3.00.

Mr. Beals, who is by way of being an authority on South America, has totaled up its assets in vital raw materials, added them to ours, and from the sum deduced a program for mutual security and economic survival.

Pan America is a veritable encyclopedia of the items in the South American storehouse, ranging from antimony and bananas on through manganese and petroleum, to whale oil and wool.

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Horse Feathers

Modern Stuff

ORDERLY: "Sir, where is Colonel I. Q.?"

ADJUTANT: "Over yonder, teaching his remount the *'fluid* walk,' *'static* halt,' or sumpin'."

ORDERLY: "Gosh, sir, I thought fluid and static related to the defense."

ADJUTANT: "That remount is the essence of defense tempo!"

✦ ✦ ✦

TROOPER: "Sir Captain, may I have a forward pass —I mean, FURLOUGH, sir?"

✦ ✦ ✦

It would seem that common sense is most uncommon.

✦ ✦ ✦

RECRUIT: "Say, corporal, who is *Private Dumb John?"*

CORPORAL (possessed of tremendous will-power and self-control): "Never mind, trooper, you'll meet him sometime."

✦ ✦ ✦

A laugh is worth a hundred groans in any market.

✦ ✦ ✦

SERGEANT INSTRUCTOR (indicating points of the horse): "Now this is what we call a *chestnut."*

TRAINEE: "Aw, Sarg—quit yer joking!"

✦ ✦ ✦

"Funny that to rise in the army is the same as success in sleep—keep your windows open and your mouth closed."

✦ ✦ ✦

A trooper who doesn't want to eat and drink things that make him sick, is sick.

✦ ✦ ✦

The crease in an officer's slacks makes little difference until it isn't there!

✦ ✦ ✦

The law of gravitation cannot be seen, but we know it exists when the brakes on a scout car won't hold on a steep hill.

✦ ✦ ✦

RECRUIT I: "Sergeant A says that in the horse cavalry we don't have *sorrels.* Says he, *Chestnut* is the specific color."

RECRUIT II: "Well, he's the *Color Sergeant;* he ought to know."

CHAPLAIN: "Trooper, do you know *church call?"*

TROOPER (condescendingly): "Sure, sir, but I thought YOU wuz a chaplain."

✦ ✦ ✦

Whenever an *individual* is *essential* to an organization, that outfit is not a military organization!

✦ ✦ ✦

SERGEANT INSTRUCTOR: "The region between the thigh and the hock is the gaskin."

TRAINEE: "Gosh, a mechanized horse!"

SERGEANT INSTRUCTOR: "I said *gaskin,* not *gasket*— Pay attention!"

✦ ✦ ✦

SUPPLY SERGEANT: "Here, Rookey, this is your gas-mask, and if it leaks you can bring it back."

RECRUIT: "?!?"

✦ ✦ ✦

Remark on a *yellow expiration envelope:* "A panegyric to 'Horse Feathers' and T. Wadelton. These relieve the professional profundity of the publication. Keep them alive!"

✦ ✦ ✦

Note: *Why not contribute a "horsefeather" from your cap?*

"Individual leadership"

War Department Changes

CAVALRY PERSONNEL

(From November 11, 1940 to January 18, 1941)

Captain D. V. Adamson, relieved 1st Armored Div., Fort Knox and temporary duty at Alabama Institute of Aero., Tuscaloosa; assigned 10th Cav., Fort Leavenworth.

Lieutenant Colonel H. T. Allen, relieved O. R., 2d C. A., Rochester, N. Y.; assigned 3d Cav., Fort Myer.

Lieutenant Colonel R. O. Annin, relieved O. R., 9th C. A., Presidio of San Francisco, December 1; assigned 8th C. A. Service Command, Fort Bliss; previous orders revoked.

Lieutenant Colonel W. B. Augur, relieved 11th Cav.; assigned Cav. Replacement, Fort Riley, Kans.

Captain C. S. Babcock, detailed as asst. mil. att. to Japan in addition to language studies at Tokyo.

Lieutenant Colonel J. W. Barnett, relieved as instructor, Army War College, Washington, D. C.; assigned Hq., 4th Army Presidio of San Francisco; previous orders revoked.

Lieutenant Colonel Frank H. Barnhart, from Champaign, Ill., 5 Dec., to 3d Cav. Brig., Fort Riley, Kan.

Lieutenant Colonel Sexton Berg, detailed in I. G. D., January 28, relieved 1st Cav. Div., Fort Bliss; assigned Hq., 7th C. A., Omaha.

Lieutenant Colonel R. E. Blount, detailed as a member of G.S.C.; assigned G. S. with troops, and 1st Cav. Div., Fort Bliss; relieved Fort Riley.

Lieutenant Colonel W. M. Blunt, relieved as instructor, New York N. G., New York City; assigned 12th Cav., Fort Brown; previous orders amended.

Lieutenant Colonel J. J. Bohn, relieved 3d Cav., Fort Myer; assigned 2d Armored Div., Fort Benning.

Colonel N. B. Briscoe, relieved O. R., 5th C. A., Louisville, December 20; assigned 5th C. A. Service Command, Fort Knox.

First Lieutenant Thomas P. Brown, Dec. 10, to AC det., Chicago Sch. of Aero., Glenview, Ill., until Dec. 9, 1941.

Lieutenant Colonel W. E. Buchly, relieved 9th Cav., Fort Riley; assigned 9th C. A. Service Command, Fort Rosecrans.

Major E. M. Burnett, relieved Agricultural and Mechanical College of Texas, College Station, Jan. 8; assigned Cav. Replacement Center, Fort Riley.

Captain E. M. Cahill, relieved Peiping, China; assigned Chengtu, China.

Captain E. H. J. Carns, Cav. relieved 10th Cav., West Point, N. Y. to USMA, Cav. Sq., West Point, N. Y.

Lieutenant Colonel Maron Carson, Cav., relieved 10th Cav., West Point, N. Y. to USMA, Cav. Sq., West Point, N. Y.

Colonel F. K. Chapin, relieved O. R., 3d C. A., Philadelphia; assigned 2d C. A. Service Command, Pine Camp, N. Y.

Lieutenant Colonel McFarland Cockrill, relieved as instructor Texas NG; assigned 56th Cav. Brig., Dallas, Tex.

Lieutenant Colonel R. E. Craig, relieved O. R., 7th C. A., Omaha; assigned 4th C. A. Service Command, Camp Claiborne, La.

Lieutenant J. H. Critchfield, relieved 4th Cav., Fort Meade, S. D.; assigned 10th Cav. Ft. Riley, Kansas.

Lieutenant Colonel R. H. Darrell, relieved assignment C. A. C. and 69th C. A., Fort Crockett, Jan. 15; assigned 1st C. A. Service Command, Fort Constitution.

Lieutenant Colonel P. R. Davison, relieved C. and G. S. School, Fort Leavenworth, Jan. 2; assigned 10th Cav., Fort Leavenworth.

First Lieutenant J. R. Degenhardt, relieved Armored Force, Fort Knox; assigned Cav. Replacement Center, Fort Riley.

Lieutenant W. M. Delaney, relieved 1st Cav. Div., Fort Bliss, Texas; assigned 10th Cav., Fort Riley, Kansas.

Lieutenant Colonel F. C. DeLangton's orders relieving him 12th Cav., Fort Ringgold, and assigning him 8th C. A. Service Command, Fort Brown, revoked.

Major I. Q. Donaldson, Jr., relieved 3d Cav., Fort Myer; assigned Cav. Replacement Center, Fort Riley; to report in A. G. O., Washington, D. C., for course of instruction, Jan. 6, for 40 days.

Lieutenant Colonel Ernest F. Dukes, det. as parole officer, U. S. Discip. Bks., Fort Leavenworth, Kan.

Lieutenant Col. D. R. Dunkle, relieved O. R., 3d C. A., Washington, D. C.; assigned 3d C. A. Service Command, Fort Myer.

Major C. W. Fake, relieved 2d Cav., Fort Riley; assigned 9th C. A. Service Command, Camp McQuaide, Calif.

Lieutenant Colonel P. C. Febiger, relieved as instructor, Wyo. N.G., Casper; detailed as instructor, Wyo. N.G., Cheyenne.

Lieutenant Colonel H. C. Fellows, relieved as instructor, Cavalry School, Fort Riley, Jan. 20; assigned Armored Force, Fort Knox.

Lieutenant Colonel J. R. Finley, relieved O. R., 9th C. A., Tacoma, Wash., Dec. 5; assigned 9th C. A. Service Command, Fort Stevens.

Captain M. W. Frame, relieved 9th Cav.; assigned Staff, Cav. Sch., Dec. 1.

Major A. L. Fulton, relieved 1st Cav. Div., Fort Clark, effective Feb. 1; detailed Augusta Military Academy, Fort Defiance, Va.

Major H. Galloway's orders amended to relieve him Fort Hamilton.

Lieutenant Colonel Geoffrey Galway, relieved O. R., 2d C. A., Governors Island, Dec. 15; assigned N. Y. Port of Embarkation, Brooklyn.

Orders amended to relieve Lieutenant Colonel Mack Garr as instructor, Ohio N. G. Cleveland, March 6.

Captain F. H. Gaston, Jr., relieved Fort Bliss, Texas; assigned 9th Cav., Fort Riley, Kansas.

Lieutenant Colonel W. C. Gatchell, relieved C. C. C., 5th C. A., Fort Knox, Dec. 1; assigned 1st Armored Div., Fort Knox.

Lieutenant J. P. Gerald, relieved 12th Cav., Fort Brown, Texas; assigned 10th Cav., Fort Riley, Kansas.

Lieutenant Colonel R. P. Gerfen, relieved O. R., 6th C. A., Chicago, Dec. 15; assigned Staff, Cav. Sch., Fort Riley.

Major Alexander George, relieved 11th Cav.; assigned Cav. Replacement Center, Fort Riley, Kansas.

Lieutenant Colonel L. G. Gibney, relieved 1st Cav. Div., Fort Bliss; detailed Agricultural and Mechanical College of Texas, College Station.

Major J. M. Glasgow, orders revoked.

Lieutenant Colonel S. R. Goodwin, relieved recruiting duty, Fort Slocum; assigned 1st Armored Div., Fort Knox.

Lieutenant Colonel R. MacD. Graham, relieved Kansas City high schools, Mo., Jan. 18; assigned 7th C. A. Service Command, Fort Leonard Wood, Mo.

Colonel F. D. Griffith, Jr., relieved 1st Cav. Div., Fort Bliss; assigned 8th C. A. Service Command.

Captain P. B. Griffith, relieved 1st Cav. Div., Fort Bliss, and temporary duty at Allan Hancock College of Aero., Santa Maria, Cal.; assigned A. C. Basic Flying School, Moffett Field, Dec. 31.

Colonel W. M. Grimes, relieved detail as member of G.S.C., assignment to W. D. G. S., and office C. of S.; assigned 1st Armored Div., Fort Knox.

Lieutenant Colonel T. G. Hanson, Jr., relieved O. R., 9th C. A., Los Angeles; assigned 3d C. A. Service Command, Arlington Cantonment, Va., sailing from San Francisco for New York, Jan. 11.

Captain P. C. Hains, 3d, Cav. relieved 10th Cav., West Point, N. Y. to USMA, Cav. Sq., West Point, N. Y.

Major A. J. Hart, relieved O. R., 3d C. A., Pittsburgh, March 1; assigned 5th C. A. Service Command, Fort Hayes.

Lieutenant Colonel C. B. Hazeltine, detailed as member of G. S. C.; assigned G. S. with troops, and Hq., III Corps, Presidio of Monterey; relieved 14th Cav., Fort Riley.

Captain W. O. Heacock, relieved 6th Cav., Fort Oglethorpe, Ga.; assigned 10th Cav., Fort Leavenworth, Kansas.

Captain Frank S. Henry, relieved 9th Cav.; assigned Staff, Cav. Sch., Dec. 1.

Captain J. L. Hines, Cav., relieved 10th Cav., West Point, N. Y. to USMA, Cav. Sq., West Point, N. Y.

Lieutenant Colonel H. G. Holt, 4th Cav., to Cav. Replacement Center, Fort Riley, Kan.

Major G. B. Hudson, relieved 13th Armored Regt., Fort Knox; assigned 1st Armored Div., that station.

Captain C. M. Isley, 11th Cav. to Cav. Replacement Center, Fort Riley, Kansas.

Lieutenant Colonel C. R. Johnson, Jr., relieved as instructor, Ill. N.G., Urbana; assigned 106th Cav., Camp Beauregard.

Captain H. J. Johnson, Cav., relieved 10th Cav., West Point, N. Y. to USMA Cav. Sq., West Point, N. Y.

Colonel Byron Q. Jones, from Fort Knox, Ky., to 1st Cav. Div., Fort Bliss, Texas.

Captain C. W. Jones, relieved Staff, Cav. Sch., Fort Riley; assigned 3d Cav. Brig., Fort Riley.

Lieutenant Colonel C. ap. C. Jones, detailed as member of G.S.C.; assigned G.S. with troops, and Hq., 1st C. A., Boston; relieved O. R., 2d C. A., New York City.

Second Lieutenant G. E. Jones, orders relieving him 7th Cav., Fort Bliss, and assigning him Cav. Replacement Center, Fort Riley, revoked.

First Lieutenant W. P. Jones, Jr., relieved 3d Cav., Fort Myer; assigned Cav. Replacement Center, Fort Riley.

Major C. W. Kake's orders relieving him 2d Cav., Fort Riley, and assigning him 9th C. A. Service Command, Camp McQuaide, Calif., revoked.

Captain O. K. Kane, relieved 10th Cav., Fort Myer, Va.; assigned Cav. Det., Fort Myer, Va.

First Lieutenant J. J. Kelly, relieved 2d Cav., Fort Riley, effective upon arrival of 10th Cav. at Fort Riley, Feb. 1; assigned that organization.

Lieutenant C. E. Lippincott, relieved 3d Cav., Fort Myer, Va.; assigned 9th Cav., Fort Riley, Kansas.

Lieutenant J. L. McCroskey, relieved 12th Cav., Fort Ringgold, Texas; assigned 9th Cav., Fort Riley, Kansas.

Captain A. B. McDonnell, relieved Barksdale Field; assigned as assistant to constr. Q. M., Fort Sill.

Lieutenant Colonel J. T. McLane, relieved 11th Cav., Presidio of Monterey; assigned N. G. affairs duty, Hq., 9th C. A., Presidio of San Francisco.

Captain E. J. McNally, relieved Peiping China; assigned Chengtu, China.

Major P. MacK. Martin, relieved Staff, Cav. Sch., Fort Riley; assigned Cav. Replacement Center, that station.

Lieutenant Colonel P. J. Matte, relieved O. R., 4th C. A., Knoxville; assigned 4th C. A. Service Command, Fort Oglethorpe.

Lieutenant C. L. Miller, 1st Cav. Div., Fort Clark, Texas; assigned 10th Cav., Fort Riley, Kansas.

Captain Whitside Miller, relieved 2d Cav., Fort Riley; assigned 11th Cav., El Centro, Calif.

Captain J. O'D. Murtaugh, relieved 6th Cav., Fort Oglethorpe; assigned 9th Cav., Fort Riley, Kansas.

Colonel Edwin O'Connor, relieved O. R. 2d C. A., New York City, Feb. 1; assigned 7th C. A. Service Command, Fort Leonard Wood.

Captain D. M. Oden, relieved 1st Cav. Div., Fort Bliss, Texas; assigned 10th Cav., Fort Riley, Kansas.

Lieutenant Colonel C. F. O'Keefe's orders amended to become effective Dec. 16 instead of Jan. 5.

Major J. B. Patterson, to retire, physical disability, effective Nov. 30.

Second Lieutenant R. A. Peake, relieved 2d Cav., Fort Riley; assigned 9th Cav., that station.

Lieutenant Colonel H. McE. Pendelton, relieved as instructor, Texas N.G.; assigned 56th Cav. Brig., San Antonio, Tex.

Lieutenant Colonel J. T. Pierce, relieved Cav. Bd., Fort Riley; assigned 14th Cav., that station.

Colonel Arthur Poillon to retire Dec. 31, physical disability.

Lieutenant Colonel T. E. Price, relieved O. R., 4th C. A., Jacksonville, Fla.; assigned 4th C. A. Service Command, Fort McClellan.

Lieutenant Colonel H. M. Rayner, G. S. C., orders amended to assign him 11th Cav., Seeley, Calif., instead of Presidio of Monterey.

Major J. B. Reybold, relieved O. R., 1st C. A., New Haven; assigned USMA, West Point.

Lieutenant Colonel Duncan G. Richart, from Des Moines, Iowa, Jan. 1, to 9th Cav., Fort Riley, Kan.

Lieutenant Colonel J. F. Richmond, detailed as member of G. S. C., assigned G. S. with troops, and Hq., 2d Army, Memphis; relieved C. C. C., Fort Bliss.

Captain P. A. Ridge, relieved 3d Cav., Fort Myer, Va.; assigned 9th Cav., Fort Riley, Kansas.

Captain B. L. Riggs, relieved 10th Cav., Fort Myer, Va.; assigned Cav. Det., Fort Myer, Va.

Colonel J. A. Robenson, relieved O. R. 7th C. A., Omaha; assigned recruiting duty, Los Angeles; previous orders revoked.

Lieutenant Colonel J. E. Selby, upon his own application will retire March 31, act of June 13, 1940.

Lieutenant Colonel H. M. Shoemaker, relieved O. R., 8th C. A., Harlingen, Texas; assigned 8th C. A. Service Command, Camp Hulen, Texas.

Lieutenant Colonel C. L. Stafford, relieved O. R., 7th C. A., Des Moines; assigned 10th Cav., Fort Leavenworth.

Lieutenant Colonel H. P. Stewart, relieved 12th Cav., Fort Brown; assigned Cav. Replacement Center, Fort Riley.

Second Lieutenant J. C. Strickland, relieved Staff, Cav. Sch., Fort Riley; assigned 6th Cav., Fort Oglethorpe.

Colonel H. E. Taylor, relieved detail O. R., 9th C. A., Salt Lake City; assigned 5th C. A. Service Command, Fort Hayes, sailing from San Francisco for New York, Jan. 11; previous orders amended.

Lieutenant Colonel P. E. Taylor, detailed in I. G. D., Nov. 30; relieved as instructor, Texas N.G., Fort Worth; assigned 5th Div., Fort Benj. Harrison.

Lieutenant Colonel G. D. Thompson, relieved as instructor, Iowa N.G., Burlington, Jan. 28; assigned 113th Cav., Camp Bowie, Texas.

Major E. F. Thomson, relieved Staff, Cav. Sch., Fort Riley; assigned 1st Cav. Div., Fort Bliss.

Lieutenant Colonel S. A. Townsend, detailed in I. G. D., Nov. 30; relieved 14th Cav., Fort Riley; assigned 1st Cav. Div., Fort Bliss.

Lieutenant Colonel R. B. Trimble, relieved as instructor, Texas N.G., Houston; assigned recruiting duty, Fort Slocum.

Lieutenant Colonel J. M. Tully, relieved USMA, Dec. 1; assigned 3d Cav. Brig., Fort Riley.

Lieutenant W. L. Turner, relieved 1st Cav. Div., Fort Clark, Texas; assigned 10th Cav., Fort Riley, Kansas.

Lieutenant J. E. Tyler, relieved 6th Cav., Fort Oglethorpe, Ga.; assigned 10th Cav., Fort Leavenworth, Kansas.

Lieutenant D. T. Van Derhoef, relieved 6th Cav., Fort Oglethorpe, Ga.; assigned 9th Cav., Fort Riley, Kansas.

Second Lieutenant N. D. Van Sickle (now 1st Lt., Army of U. S.), transferred to A. C. on Dec. 20; relieved A. C. Advanced Flying School, Kelly Field; assigned A. C. troops, Savannah, Ga.

Lieutenant Colonel Thomas D. Wadelton, from Indianapolis, Ind., Dec. 1 to CCC, Fort Knox, Ky.

Lieutenant Colonel W. S. Wadelton, ordered to participate in aerial flights, Jan. 1 to Feb. 28.

Lieutenant Colonel V. W. B. Wales, relieved 1st Armored Regt., Fort Knox; assigned as instructor, C. and G. S. Sch., Fort Leavenworth.

Captain C. P. Walker, relieved 4th Cav., Fort Meade, S. D.; assigned 10th Cav., Fort Riley, Kansas.

Lieutenant Colonel J. P. Wheeler, relieved O. R., 3d C. A., Richmond, Va., Jan. 30; assigned 8th C. A. Service Command, Fort Clark.

Captain Sherburne Whipple, Jr., Cav., relieved 10th Cav. W.P.N.Y. to USMA, Cav. Sq., West Point, N. Y.

Captain E. W. Williams, relieved 10th Cav., Fort Myer, Va.; assigned Cav. Det., Fort Myer, Va.

Colonel A. E. Wilbourn, detailed in I. G. D., Jan. 10, relieved 12th Cav., Fort Brown; assigned Hq., 8th C. A., Fort Sam Houston.

Captain A. H. Wilson, Jr., relieved 7th Cav., Fort Bliss, and Cal-Aero. Training Corp., Glendale, Calif.; assigned A. C. Basic Flying School, Moffett Field.

Captain N. M. Winn, relieved Fort Bliss, Texas; assigned 9th Cav., Fort Riley, Kansas.

Colonel S. W. Winfree, relieved Reception Center, Fort McPherson; assigned 4th C. A. Service Command, that station.

Colonel A. H. Wilson, relieved 14th Cav., Fort Riley; assigned 8th C. A. Service Command, Fort Brown.

Captain William H. Wood, from West Point, N. Y., to 1st Cav. Div., Fort Bliss, Texas.

Colonel W. H. W. Youngs (Lieut. Col.), detailed in I. G. D., Feb. 1; relieved as instructor, Iowa N.G., Des Moines; assigned Hq., 5th C. A., Fort Hayes.

Captain H. M. Zeller, relieved 14th Cav., Fort Riley; assigned Cav. Replacement Center that station.

CAVALRY OFFICERS (RETIRED)

On Active Duty

Bradford, David E., Capt. Cav. (Sig.C.), Recruiting at San Antonio, Texas.

Bridgman, Richard H., 1st Lt. Cav., University of Arizona.

Bull, Henry T., Col. Cav., 9th C.A.S.C., San Luis Obispo.

Byrd, Carl B., Major Cav., Recruiting, Cincinnati.

Chapman, Carleton G., Lt. Col. Cav., Office of the Inspector General, Washington.

Colley, Archibald T., Lt. Col. Cav., Univ. of Georgia.

Commiskey, Archibald F., Col. Cav., N.Y. A., Hq., Baltimore.

Cooper, Vaughn W., Lt. Col. Cav., Office of the Chief of Staff.

Coxe, Alexander B., Col. Cav., Office of the Chief of Staff.

Cramer, Charles, Major Cav., Okla. Military Academy.

Creel, Buckner M., Capt. Cav., Mass. State College.

Edmunds, Arthur D., 1st Lt. Cav., Finance Department, Hq. 1st Corps Area.

Farman, Elbert E., Jr., Major Cav., U. S. Military Academy.

Fitch, Roger S., Col. Cav., Hq., Fort Ord, Calif.

Hunter, Francis R., Major Cav., Univ. of Calif.

Hurt, Charles M., Capt. Cav., Savannah High School, Savannah, Ga.

Hyndman, Floyd M., Major Cav., Armored Force, Ft. Knox, Ky.

Jones, Leslie B. C., Capt. Cav., Liaison officer, 9th Corps Area, N.Y.A.

Kromer Leon B., Col. Cav., Cavalry Board, Fort Riley, Kansas.

Massey, Oscar M., Major Cav., Guthrie High School, Okla.

Merrill, Alberto E., Major Cav., Recruiting, Los Angeles.

Norton, Anderson H., Capt. Cav., New Mexico Military Inst., Roswell, New Mexico.

Oliver, Llewellyn W., Col. Cav., Office of the QMGen.

Olsen, Alexander G., Major Cav., Rogers High School, Newport, R. I.

Peabody, Orland S., Capt. Cav., Pueblo High Schools, Pueblo, Colo.

Pearson, John A., Capt. Cav., Organized Reserves, Oklahoma City, Okla.

Stevens, John F., Major Cav., Texas A&M, College Station, Tex.

Stringfellow, Horace, Jr., Capt. Cav., C.C. C., Anniston, Ala.

Vollmer, Arthur, Major Cav., Recruiting New York, detached with the Military Intelligence Office.

Wise, James B., Jr., Major Cav., Texas A&M, College Station, Tex.

Wood, Delmore S., Major Cav., Univ. of Arizona.

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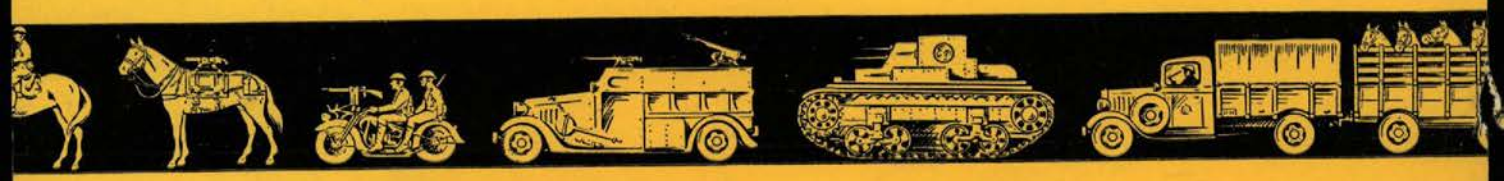
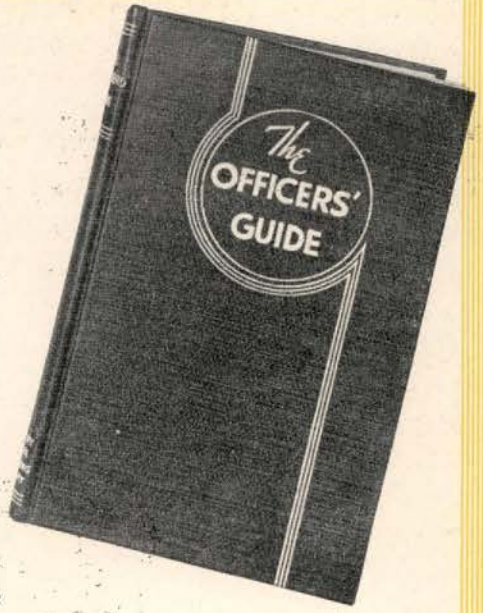


THE CAVALRY JOURNAL

MARCH-APRIL, 1941

THE OFFICERS' GUIDE



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The aim and purpose of the Association shall be to disseminate knowledge of the military art and science, to promote the professional improvement of its members, and to preserve and foster the spirit, the traditions, and the solidarity of the Cavalry of the Army of the United States.—Article III of the Constitution.

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General Headquarters

Where It Fits Into the Present Expansion of Our Military Forces

By Lieutenant Colonel C. H. Gerhardt, G.S.C.

IN July, 1940 orders were issued for Major General Lesley J. McNair and several others to initiate the organization of General Headquarters, U. S. Army. Subsequent to that time the staff has been augmented to its present strength of 20 officers and 24 enlisted men. The initial directive by the War Department stated that decentralization was desired and that, initially, GHQ would be concerned with the direction and supervision of training of all military forces except overseas garrisons, and that close coöperation was desired between GHQ, the War Department General Staff and the Chiefs of Arms and Services. At the present time General Marshall, in his capacity as Chief of Staff, heads the War Department and in his capacity of Commanding General of GHQ also heads the initial set-up for troops in the field. He combines in his two jobs those duties performed by General Pershing and General March during the World War.

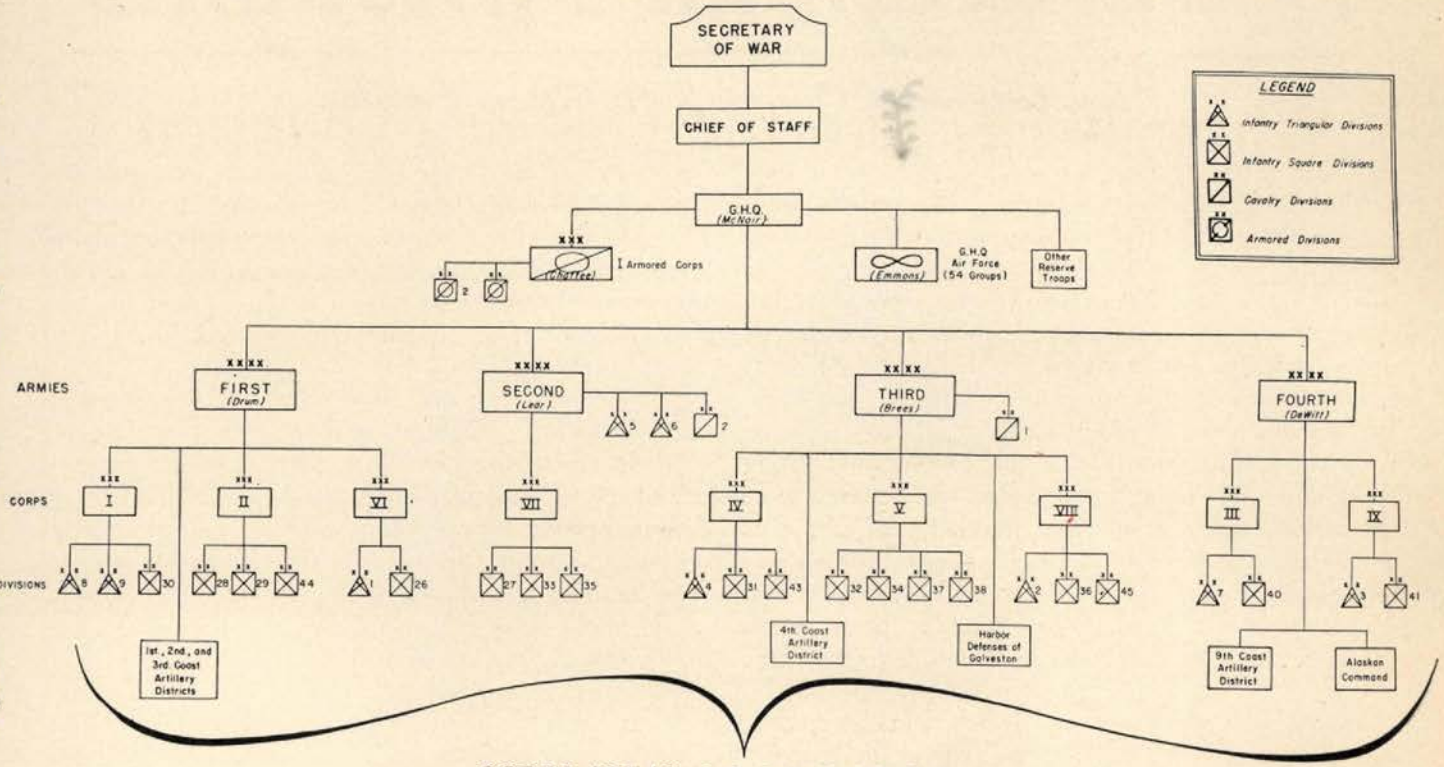
Major General Lesley J. McNair

According to tables of organization the full set-up for GHQ runs to 156 officers, 17 of whom are general officers and 355 enlisted men. At present GHQ comprises the training section of G-3, GHQ and in order to simplify contact with the War Department various officers have been assigned principal liaison duties with the various sections of the War Department, the Arms and Services. General McNair felt some such organization would be necessary in order to avoid much duplication of effort.

From the first, General McNair has felt that the essence of army training lies in well trained battalions and has planned on tests of these battalions and similar organizations by the GHQ staff, these tests to be highly practical and to be so arranged as to lead to factual answers as to the state of training of the various units. As of necessity, these tests could not be given until troops had an opportunity for training. The first duties of GHQ, therefore, in connection with the induction of the National Guard and other expansion of the field forces, was to visit these forces prior to induction and also in the field to learn their problems and see that matters were proceeding according to plan. The data thus assembled were of great value to the War Department; and as General McNair's basic idea was to have the members of his staff visit only those units with which they were concerned, and for a definite purpose, no time nor effort was wasted by indiscriminate visiting. Every visit of GHQ personnel has been planned to assist either the troops visited or others to be inducted at a later date. The initial decision as to the training of our military forces was to avoid some of the errors of previous expansions and to put into effect a highly centralized form of training.

All newly organized Regular Army units and inducted National Guard units were required to follow a 13 weeks schedule embracing basic, technical, and tactical training. Subsequent to this 13 weeks, a 12 weeks program for combined training was presented. The next major problem was the training of Selective Service

Tactical Organization of the Army



CORPS AREAS—1, 2, 3, 4, 5, 6, 7, 8, 9.
Responsible, under War Department, for supply and housekeeping of all troops.
Directly in control of Corps Area Service Commands, including 17 of the 21 Replacement Centers (averaging 11,000 men each) to be organized during next three months.
Overseas garrisons not included.

personnel, some of whom went direct to units and others to Replacement Centers. These individuals were given a 12 weeks schedule of training.

The maximum benefit from the above system could be had out of a few well-trained instructors, due to its centralization. Troops at the end of the training period were to be hardened and fit for extended field duty and to be inculcated with the *offensive spirit and maximum mobility.*

General McNair is a man of extremely varied background. He was a member of the similar group in the World War; has served as assistant commandant of the Field Artillery School; as commandant of the Command and General Staff School, and as Chief of Staff of the PID (Proposed Infantry Division) during the tests of this division, which resulted in the adoption of the triangular set-up for the Regular Army Divisions. He is a general officer who is not averse to detailed work himself and is able to get full value out of his background.

General McNair feels that horse cavalry must prove its value, today, in the Combat Team of the Army of the United States. Maneuvers to be held this summer are planned so that cavalry divisions will have an opportunity to maneuver against triangular, motorized and armored divisions and corps. With General McNair's factual background he will see that these maneuvers answer some very pertinent questions.

* * *

My personal opinion of the situation, as far as the Cavalry is concerned, is as follows: Our battlefield mobility is still unsurpassed by any other arm. Our strategic mobility has shrunk considerably in comparison with troops who are completely motorized or able to shuttle. The cavalry soldier is as good as any in our army for the simple reason he has such a diverse life with plenty of hard manual labor. In addition, he has that exaltation of spirit that seems to come only to a man on a horse.

Regardless of the answer this summer, to the questions asked, the Cavalry's main mission is to do its best for the betterment of the armed forces of the United States, and it is up to each officer and NCO to so perfect his command that our characteristics of mobility—firepower—surprise and leadership are apparent to all.

A Cavalryman's Thoughts

By Lieutenant Colonel J. T. Pierce, Cavalry

SINCE primitive man first reached down for a stone to hurl at his adversary, always the search has been for something new and startling with which to overcome, quickly and completely, the opposing hostile tribe or nation. So that in turning the pages of history there passes in review a series of innovations created by this tribe or that nation which enabled it for some brief historical period to be supreme among its neighbors. For instance, the chariot had made Darius supreme until Alexander introduced a new method of fighting them, and after Arabela the phalanx was believed to be invincible. And so on through other, newer means or methords such as the devastating wars by paralysis of Genghis Khan, the introduction of the rifle and cannon to the battlefield, the machine gun, poison gas, tanks, airplanes, and now the Blitzkrieg. (To name a few.)

Where such innovation was believed in thoroughly, and consequently effectively used, the result has generally been complete and disastrous to the unprepared or disbelieving foe. The introduction of the means and methods of Genghis Khan, and of their modern application in the Blitzkrieg furnish us two excellent examples of this. But, conversely, where such innovation was not believed in thoroughly, and consequently ineffectively used, the result has generally been indecisive and a period of stalemate has resulted permitting the unprepared opponent the opportunity for necessary countermeasures. The first military usage of poison gas and of tanks on modern battlefields provide us with two excellent examples of this latter.

The overwhelming initial successes of the Blitzkrieg as demonstrated by the Nazis, therefore, has provided a few pages for the future historian, but has added nothing to the record to surprise the future military student. On the contrary, the future military student is more apt to be amazed at any successes attained with the means and methods used when he knows the means and methods available to their opponents. For Time will have lifted the fog of obscurity put down by propaganda and censorship. The arms, equipment, methods, moves and countermoves of the opposing players will be clearly seen, and proper relative values to these factors can be easily assigned.

But the contemporary military student can get no such clear picture, and, in his effort to assign proper relative values to the factors involved, has to rely on his deductions from the few and scattered items of factual information his diligent research uncovers—as influenced by his training, experience, knowledge of the history and men and modern machines, and his analytical ability. As a consequence he hesitates to draw conclusions at this stage for fear that in his study he has accepted as facts items of propaganda, that he has excluded other items as propaganda which actually were facts, that he has assigned unmerited weight or importance to available factual items, or that he has been influenced too much by his own ideas, or his limited training and experience.

It is believed, however, that sufficient basic data are now available to enable us to draw a few sound conclusions. First, that the Nazi war machine was conceived, armed, organized, equipped, and trained for a definite purpose for operations under known conditions on known terrain. Second, that the Blitzkrieg has offered nothing new, being merely a modern adaptation of old methods, with the possible exception of the scientific sapping and undermining of the opponents' will by use of mass psychology. Third, that the effectiveness, and relative importance to the total effect, of the German armored force has been over-emphasized and much advertised for propagandistic purposes and because of the limitations placed by the censorship on foreign-press correspondents.

It is believed that the singleness of purpose demonstrated throughout the period of Nazi domination of Germany up to the start of the invasion of Poland; the ideals and purposes published in *Mein Kampf;* the test-trials in Spain and Austria; the thoroughness and completeness of the conversion of the German nation into a war-making machine; the steps taken to guard the secrecy of the size, strength, equipment, and condition of the German army and of the German nation's war-making machinery; the results accomplished since the invasion of Poland started; the released statements of Nazi officials—civil and military—during the past year; the slowly-developing picture of the actual actions of the Nazi offensive moves and the actual—if any—countermoves of their defensive opponents; the rumors of ineffective and near-disastrous attempts to adjust their war-machine to the changed existing situation; the actual existence of a stalemate since the fall of France—all tend to establish and support our first conclusion. No small part of the success accomplished can be placed on the whole-hearted belief of Nazi officials—high and low, civil and military—in the soundness of the means and methods created for the purposes at hand. Half-hearted believers or disbelievers were eliminated.

As to our second conclusion, it is believed that students of military history and of technical advances will agree with us without comment except on the qualification to the conclusion. To us it appears that the Blitzkrieg in its application merely utilized modern techni-

cal advances and the lessons of wars of the past to attain the military ideal of allowing a superior infantry to reach its enemy with its complete strength still unimpaired. As a consequence, small local initial successes were quickly developed by an alert command into important strategical successes which likewise were exploited swiftly into a relentless pursuit. That the scientific use of mass psychology sapped and undermined the will of the opponents, and that it made possible the initial successes of the German army, there can be little doubt. But as to whether or not this was a new element that rounded-out the Blitzkrieg, there may be some argument. For to us the methods appear to follow closely the practices of Genghis Khan and his successors. Or, even of Sun Tzu, who wrote about 500 B.C.: "Whether the object be to crush an army, to storm a city, or to assassinate an individual, it is always necessary to begin by finding out the names of the attendants, the aides-de-camp, the door-keeper and sentries of the guard in command. Our spies must be commissioned to ascertain these."

We may be "sticking our neck out" on our third conclusion as it may be based more on our convictions than on the weight of evidence. But it is believed that the factual data which have become available make it a sound deduction, and that as additional data become available its soundness will be further substantiated. One competent military observer who witnessed the Nazi machine over-run France has remarked that the German army could have gone as fast and as safely after the "breakthrough" in unarmored passenger cars, as hardly a hostile shot was fired at it!

Logically, then, where does all this leave us and what are we going to do about it? It seems to us that the key lies in the word "logically." We must not succumb to the propaganda which is being put out with a definite idea in view, nor must we swallow "raw" all the information purporting to be factual accounts. Nothing has yet occurred, for which there is sufficient reliable information to substantiate it, that disproves the effectiveness of our weapons when they are operated by men who believe in them, know how to control their effect, and are willing to serve them at the risk of their lives. This, then, is our first and outstanding mission—Training. And *quality* of training rather than *quantity*. The commander of every unit and all subordinate officers must keep this objective ever in mind and must *know* what they are going to teach before they demand exertion of their men. This demands careful planning, tedious preparation and coördination—off the drill field or maneuver area. But it is the only way to secure quality of training for combat. "More thinking in the office, less lifting in the shop" has been attributed to Henry Ford, but it could well head our training directive!

We must proceed carefully in making changes in organization or tactical doctrines based on supposed requirements for change as indicated by "lessons" from the recent operations in Europe, if we accept as sound the reasoning for the conclusions heretofore advanced. Our problem is entirely different to start with, and in the second place, if we adopt those lessons to the extent of copying, we will be in the position of preparing for the *last war,* not the *next* one! Neither must we resist needed changes because of any unwillingness to change, or because of a lack of vision. Rather, we should assume an attitude of eagerness to change and search for new ideas. Let's try things now while there is time. Of course the final test of military innovations is war itself, but much of value might be found in the laboratory of the maneuver area—if we approach it with an open mind.

It is believed that this applies particularly aptly to us in the Cavalry, and that the opportunity is here for a modern cavalryman and a modern cavalry to meet the challenge.

★ ★ ★

Novelty and surprise throw an enemy into consternation; but common incidents have no effect.—VEGETIUS.

Cavalry Replacement Center

By Lieutenant Colonel Wayland B. Augur, Cavalry*

TREMENDOUS military activity is to be seen everywhere in the country at the present time. Innumerable agencies are engaged in building up and training a military force which will insure an adequate defense. One of the busiest of these is the Cavalry Replacement Center at Fort Riley, Kansas.

This unit, at the present writing, is completing arrangements to receive and start the training of its initial contingent of approximately fifty-four hundred Selective Service Trainees. By the time this article appears in print the first real hurdle will have been taken and the camp will be in full swing.

Previous articles have already appeared in The CAVALRY JOURNAL and other widely read military publications explaining the general scheme of organization and operation of the Replacement Center. This article will attempt to close gaps left in the earlier articles and to fill in a background of items believed to be of general interest to the Cavalry service.

The huge camp that has mushroomed in the Republican Flats area at Fort Riley since the middle of December, is a miracle of American energy and accomplishment. Commendations must go to the Widmer Engineering Company and to Long-Manhattan-Watson, the construction company, that together, under the supervision of the Constructing Quartermaster, have accomplished this seemingly impossible task within the time limit. There was, to make the task more difficult, an initial delay of several weeks through no fault of their own.

Conversation with various individuals, from Superintendents to carpenters' helpers, has divulged the presence of a large number of veterans of the last World War. They have uniformly adopted the attitude that this job, turned out on time and in good shape, *is their part* in the present emergency.

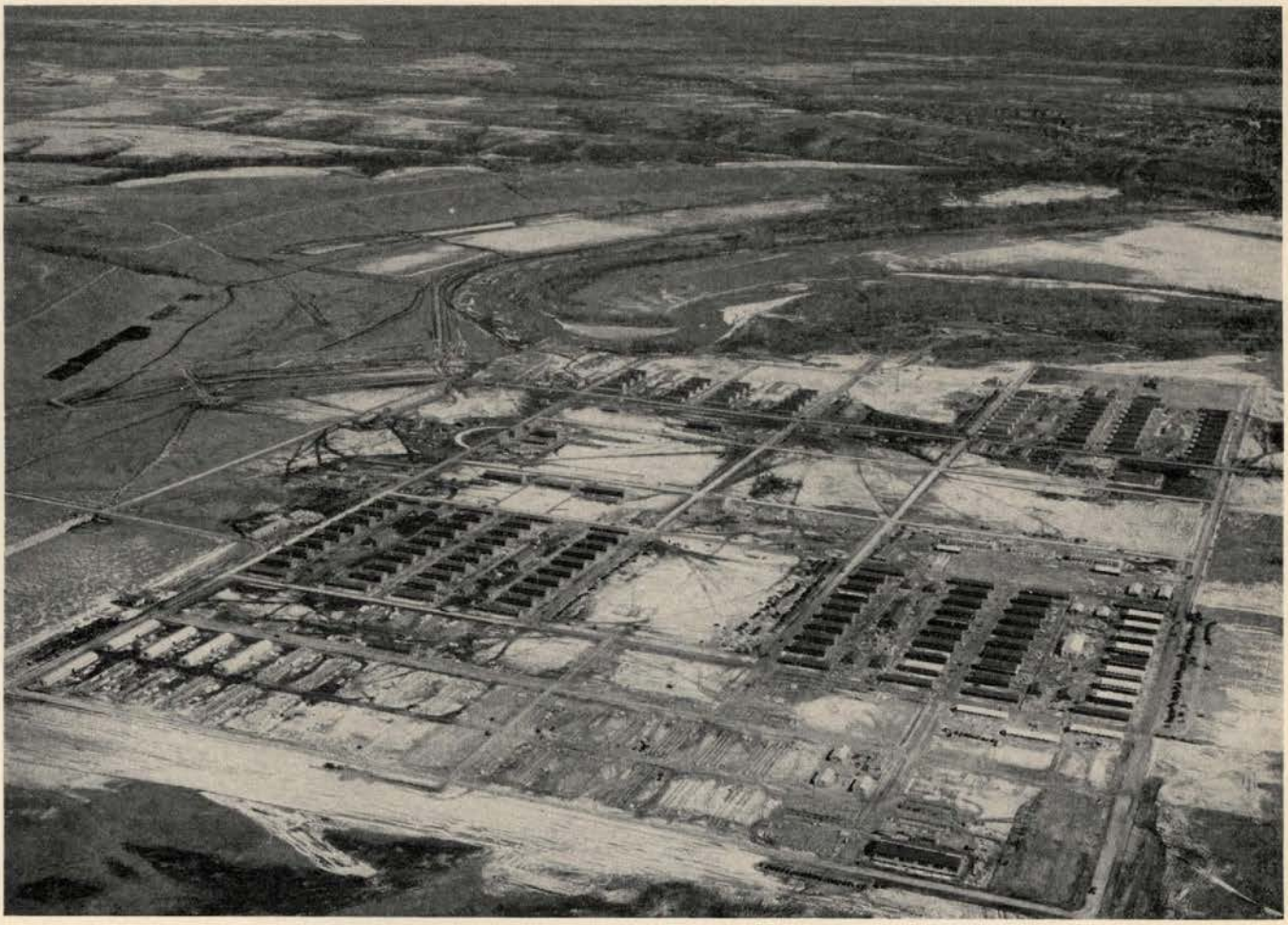
Many comments are heard comparing the present well built barracks, mess halls and other buildings, with the poorer class of similar type military buildings constructed during 1917-18. The buildings at the Cavalry Replacement Center are of an experimental type. They have metal sheeting on the exteriors, metal window frames and an additional wall insulation that is a distinct improvement over the wooden mobilization type building being constructed at most other Army camps. The buildings are much less of a fire hazard than buildings of the all-wooden type. This has been demonstrated already in a few minor fires that occurred during construction. Another modern improvement found in the buildings is the thermostatic, gas operated heaters with sheet metal heat ducts leading to all rooms. These not only provide an automatic system for distributing heat, but can be used in hot weather for air-cooling purposes by reversing the electric fan-blowers. This will be a definite advantage during the periods of extreme temperature that sometimes visit Fort Riley. Thus, this year's trainees will be living in the lap of luxury in comparison with conditions citizen soldiers found at military camps twenty-three years ago.

For those who are familiar with the Fort Riley Reservation, it will be easy to place in their mind's eye the location of the camp by visualizing its area as extending generally from the vicinity of the steeple-chase race track at the southeast end of camp, to the polo bungalow near the northwest corner of the area. The eastern portion of the camp is given over to barracks for the motor units and the two colored training troops. The western half of the area houses the horse units, the weapons department, quartermaster utility and warehouse areas.

A dike, between seven and nine feet high, is being built around the camp area. The dirt bank begins at the mouth of Breakneck Canyon, extends between camp and the Republican River, and ends at the high ground near the entrance to Governor Harvy Canyon. Drainage from the hills north of camp is diverted by ditches running outside the diked area. This precautionary measure will be heartily endorsed by those who remember the spring floods of the year 1935. The dike will give protection from the high water mark of that year which as far as we know was an all time record.

Approximately three hundred of the three hundred forty odd buildings approved for construction will be ready for occupancy when the camp receives trainees on March 15. The general plan of construction and the camp layout corresponds quite closely to that which is being used in many other Replacement Center camps. Blocks of barracks and mess halls, each adequate to house about 2,000 men, are placed at the corners of the large parade ground area. Camp Headquarters and headquarters troop buildings are centrally located on the north edge of camp. Recreational buildings, consisting of a War Department Theater, a recreation hall to be used for centralized religious services and as a

*The author was assisted by Lieutenant William P. Jones, Jr., Cavalry Assistant S-2, Cavalry Replacement Center.



Camp area on February 28th. Stable areas under construction are in the foreground. Post of Fort Riley is in upper right corner.

library, and a service club, are conveniently located near the center of the parade ground area. Post exchange buildings, dispensaries, administration buildings and class rooms are likewise provided for in each of the three main blocks of barracks. The fourth block being only one-half the size of the others does not have a separate post exchange or dispensary.

It is very fortunate that roads and walks have been completed throughout most of the area, for a recent curtailment of funds has caused the reduction of such installations.

Administrative buildings such as a post office, fire station, telephone exchange, quartermaster utilities and a guest house go to make the Replacement Center a community that is almost self-sufficient.

Practically every Cavalry unit and agency in our Army has contributed its share to the building of this organization.

To the Office of the Chief of Cavalry and the Cavalry School fell the important task of planning tables of organization, making up accompanying tables of basic allowances, drawing detailed plans to house, administer and train a total of over seven thousand men at a time, and the drafting of the Mobilization Training Plan for the instruction of these recruits.

The personnel of the Cavalry Replacement Center is representative of the entire Cavalry service. All regular organizations, with the exception of the Philippine Scouts, have been called upon to send cadres. These are being kept intact in so far as it is possible, to the end that men trained by the 11th Cavalry will go to the 11th Cavalry when their course of instruction is completed, and similarly men trained by the 4th Cavalry cadre will go to Fort Meade. The officer personnel has come largely from civilian life. Of the 169 officers, only ten are regulars. In all, they represent thirty-two regular and reserve organizations.

It is a matter of general interest that the reserve officer personnel comes from 70 colleges and universities. The five of these that have contributed most officers to the organization, are: Norwich University, University of Arizona, Virginia Military Institute, University of Illinois and the University of Pennsylvania.

The remount service has given its share of effort to our development in that 800 of the 1,600 animals have come from remount depots. Fort Reno and Fort Robinson have each sent 400 remounts, carefully selected for duty at the Replacement Center.

In addition to the remounts, 800 seasoned horses have been shipped here from the various Cavalry organ-

izations. The 1st Cavalry Division, the 2nd, 3d, 4th, 6th, 11th and 14th Cavalry regiments, have all sent their quotas.

Preparation for the opening of the Cavalry Replacement Center has progressed through the following phases:

a. General planning by the War Department.

b. Detailed planning of organization, camp layout, special tables of allowances, etc., by the office of the Chief of Cavalry, assisted by the Cavalry School.

c. Designation of the Executive Officer and S-3 to continue the task of putting the adopted plans into actual operation.

d. Arrival of other regular officers during first week in January and the movement of the temporary headquarters from the Post Headquarters building to Camp Whitside.

e. Reserve officers' arrival and beginning of refresher course on January 20th.

f. First block of thirty-three buildings in the Republican Flats area formally received by the Army on February 11th.

g. Arrival of enlisted Cadre on February 15th.

h. Cadre training begun February 17th.

The author as executive officer and Major Alexander George as S-3 arrived at Washington, D. C. on December 2, 1940, for tempororary duty at the office of the Chief of Cavalry to become oriented in their new duties. By December 16th a nucleus of nine regular Army officers had been selected to fill key positions in the new organization, and the Executive Officer and the Plans and Training Officer had reached Fort Riley to start functioning in their respective capacities. Since the first of the year each of the successively arriving groups has thrown its shoulder to the wheel to start the juggernaut rolling.

The establishment of Replacement Centers for the initial training of our citizen army during the present mobilization, will avoid much of the inefficiency in building up the large armed forces that obtained during the early months of World War I. It was not until March, 1918, that the War Department decided upon the Replacement Center scheme of training. Prior to that time the arrival of replacements for men who were casualties in battle was a hit or miss proposition. They rarely ever arrived on time, and when they did get to France their number was usually insufficient.

Witness the cablegram sent to the War Department by General Pershing dated August 16, 1917:

"Attention is especially invited to the very great shortage in arrivals of replacements heretofore requested. Situation with reference to replacements is very acute. Until sufficient replacements are available in France, to keep Divisions at full strength, replacements should by all means be sent in preference to new divisions."

The War Department responded by sending still more divisions. Finally on November 2, a cablegram was sent inviting attention of the War Department to the fact that a total of 140,000 replacements would be due by the last of November. The cable closed by saying:

"To send over entire divisions, which must be broken up on their arrival in France so we may obtain the replacements that have not been sent as called for, is a wasteful method, and one that makes for inefficiency; but as replacements are not otherwise available, there is no other course open to us. New and only partially trained divisions can not take the place of older divisions that have had battle experience. The latter must be kept up numerically to the point of efficiency."

By March of the following year, Replacement Centers had been organized and by November, 1918, 236,000 replacements had been sent overseas.

We are now profiting by our 1918 experience.

During the present war, Great Britain has been using Training Centers which are comparable to our own Replacement Centers. They have proved to be the most efficient method yet devised for training civilian soldiers.

Scope and Purpose of Training

There is nothing new in the task of recruit training. All units in our army are busy doing just that at the present time.

The Replacement Center problem, however, is different from the usual recruit drill. Here, we are faced with the necessity of mass production making necessary a new approach and introducing many new difficulties.

This will be readily apparent when one realizes that the initial contingent of trainees will be approximately 1/7 of the total cavalry strength in December, 1940, and roughly ⅔ of the strength of all regular army cavalry that was in actual service in December, 1939.

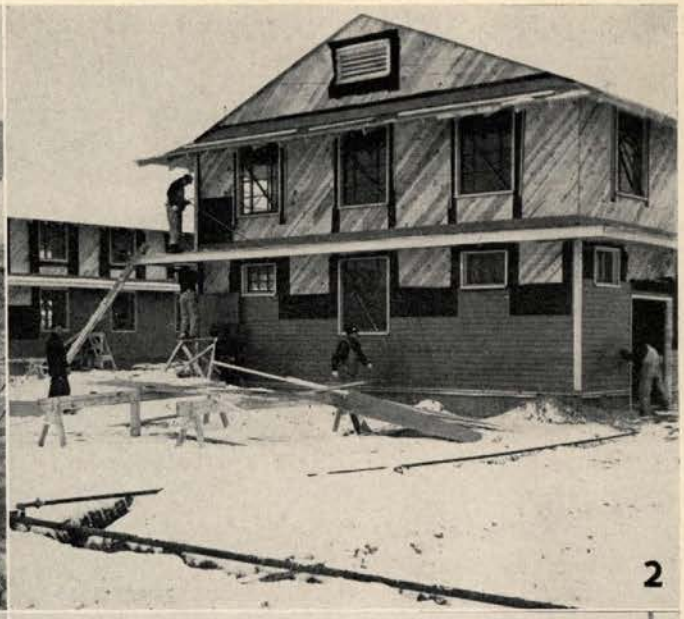
We expect to accomplish our difficult task by developing a corps of highly specialized instructors each of whom is an expert in his own line.

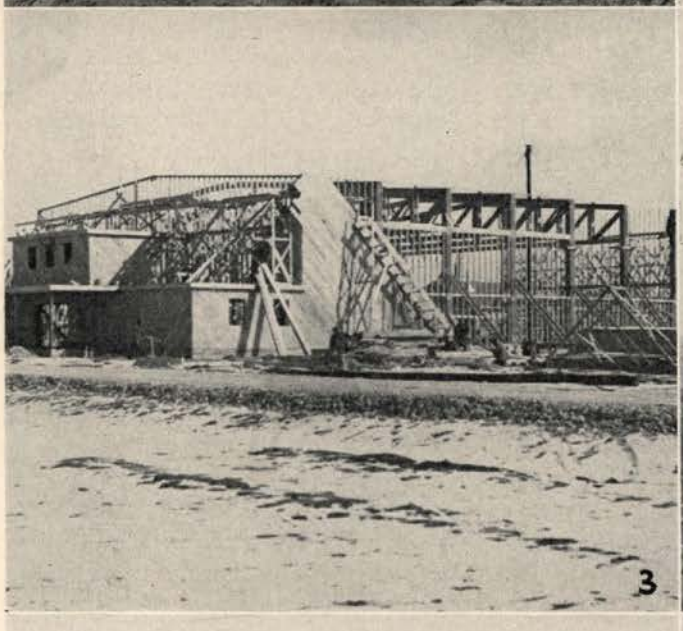
Training at the Cavalry Replacement Center is based on the Mobilization Training Program 2-2, War Department, November 12, 1940, revised. It will be conducted along functional lines: basic training is the responsibility of training squadrons; and training in Horsemanship, Motors, and Weapons will be conducted by the respective departments.

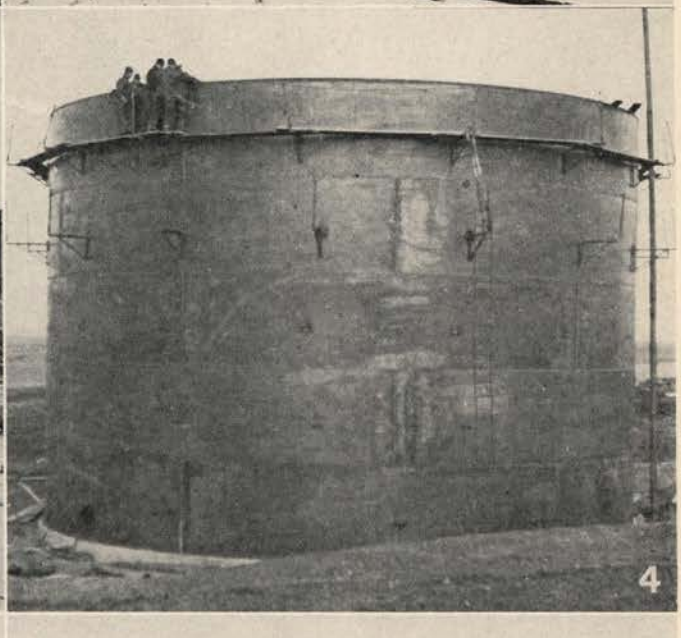
The purpose of the Replacement Center is to provide basically trained individual soldiers as replacements for horse and mechanized cavalry units, capable of operating efficiently in garrison or field with their regiments.

Basic training includes the training usually given to a recruit. The more technical training will be conducted by the three departments set up for that purpose. The entire organization is based on the premise that *the Cavalry Replacement Center is an organization for the training of cavalrymen and all other considerations, such as administration, are secondary.*

The usual methods of instruction: lectures, practical







1—Lieutenant Colonel Augur confers with construction chiefs. On his left is Sidney F. Ditmars, vice president of the Manhattan Construction Company, and on his right is Ray E. Basore, general superintendent of construction for the Long-Manhattan-Watson Construction Company. To the left are Major C. D. Keith, mess officer, and Lieutenant Colonel H. P. Stuart, S-4. 2—Barracks showing details of insulating materials and metal sheeting. 3—War Department Theater takes shape. 4—Replacement Center Reservoir, capacity, a half million gallons. Two wells, each capable of pumping 1,000 gallons per minute supply tank. 5—Major P. M. Martin, chief of weapons department, inspects range construction. 6—Lieutenant Colonel H. G. Holt, chief of motors department meets the scout cars as they arrive from Fort Meade.

exercises, and demonstrations supplemented by training films, will be used in all departments. Special buildings for class rooms will be available for lectures. The eight large recreation buildings may also be utilized.

Master Schedule

A master schedule has been prepared; based on a 44-hour training week of five eight-hour and one four-hour days.

Each eight-hour training day is divided into three 2½ hour instruction periods allotted equally to Basic, Weapons, Horsemanship and Motors. Horsemanship and Motors instruction will be conducted concurrently for men destined for horse and motor units respectively.

From Monday to Friday inclusive, all selectees will have physical training for thirty minutes each morning previous to the start of the first 2½ hour instruction period.

Saturday mornings will be devoted to inspections and open hours not assigned to specific subjects.

Instructors will keep a check sheet noting the proficiency of any outstanding trainees in order that such men may be recommended for specific duties upon assignment to combat organizations.

Organization

The Cavalry Replacement Center organization consists of a Headquarters and eight training squadrons. Each squadron has its own headquarters consisting of a squadron commander, a squadron adjutant, and three enlisted men. Each troop is commanded by a captain, assisted by two lieutenants. Troop officers will be charged with troop administration and will be called upon to give basic instruction. All training squadrons consist of four troops with the exception of the 7th and 8th, which have two troops each. The training troops will have a maximum of 220 trainees, divided into four platoons, each with a sergeant instructor and a corporal instructor. These instructors will accompany their platoons in all their training exercises.

Weapons Department

The Weapons Department is headed by Major Paul McK. Martin, late of the same department of the Cavalry School. Instruction will consist of training in the maintenance, operation, and use of Cavalry Weapons, to include the M-1 and M-1903 rifles, cal. .45 pistol, cal. .30 machine gun, air and water cooled, caliber .50 machine gun, 60- and 81-mm. mortars and 37-mm. antitank gun. Antiaircraft firing will also be taught.

In general, the scope of training in weapons follows the procedure indicated in Field Manuals. The objective is the preparation of the trainee to fire his weapons so as to completely exploit their powers on the battlefield. Qualification as prescribed in MTP 2-2 is an intermediate objective.

Rifle instruction is carried out so as to give a thorough course of preliminary instruction with both the M-1 and M-1903 rifles. The preliminary course will be repeated before any firing is attempted. Record firing will be conducted with the M-1 rifle.

Pistol firing is carried on concurrently with machine gun instruction. The training with these weapons includes mechanical instruction, preliminary marksmanship, 1,000-inch, and field firing.

Motors Department

Lieutenant Colonel Harold G. Holt is Chief of the Motors Department. This department has as its objective the qualification of all motor trainees in the operation and 1st echelon maintenance of military vehicles. Instruction will include operation of vehicles in military formations and as individuals under all conditions of roads, terrain and weather. The motors department will have available for training: 24 M-1 scout cars which were sent here from the 4th Cavalry, 28 M3-A1 scout cars, 45 2½-ton cargo trucks, 9 five-passenger sedans, 22 solo motorcycles, 22 tricycles or Bantams, 1 4-ton heavy wrecker, 1 2½-ton semi-trailer, 3 combat cars, and 1 ½-track mortar carrier.

Horsemanship Department

The objective of the Horsemanship Department and Major E. M. Burnett, its Chief, is to qualify each trainee as a fairly competent horseman. On completion of the course, he will be expected to ably manage his horse individually and in ranks, at all gaits over varied terrain; to execute well all mounted movements of the squad and platoon, including approach formations, combat formations, and the mounted attack. He will have been taught to care for his horse and equipment under various conditions of bivouac, marches, rail and motor movements, and to fire the pistol when mounted, with facility and accuracy. Emphasis is placed on quietness and smoothness of all mounted movements.

A total of one hundred sixty-two hours is to be devoted to training by the Department of Horsemanship. An effort will be made to develop a genuine love for horses in the trainee. Each man will spend an average of two and a half hours per week to the care of animals and equipment. This, multiplied by the three thousand odd men in the horse squadrons will be sufficient for the proper care of our 1,600 animals and their equipment.

Incidentally, the training period will be a test of the stamina and endurance of our horses, for each mount will be ridden by two to three men a day. This will result in from five to seven and a half hours work a day for each horse. The plan has earned the title at the Replacement Center, of the "three men on a horse" system.

The whole of the riding time, for the first two weeks, will be devoted to equitation. In the third week, half of the time will be utilized for mounted drill and the remainder for equitation. As the course progresses, instruction will be given in mounted scouting and patrolling, mounted combat, mounted pistol firing, marches,

and loading and unloading for rail movements and portée.

Training Facilities

One of the finest features of the whole camp is the convenience of ample training facilities immediately in and adjacent to the camp.

Dismounted drill and parade grounds have been graded and leveled so that each unit need only form outside its own barracks to start such training. Huge open areas, 600 feet in width, extend in the shape of a cross through the center of camp, approximately one mile in length and a half-mile in breadth. Additional training areas extend around the outside edge of the camp.

Raised wooden platforms are being constructed in each squadron training area as a training aid for massed calisthenics and other subjects where centralized control is desired.

Drill areas for the motors department and the horsemanship department are immediately south of the motor park and west of the stable area. The soil here is generally sandy and firm even during wet and rainy weather.

Target ranges extend along the north side of camp and gas chambers for chemical warfare defense training are being built on the eastern edge. Under this plan, units can move to any type training area without interference with other troops and can start training with little or no loss of time.

The range facilities at Fort Riley are being considerably enlarged to take care of the great increase in personnel. Details of this work were given in an article in the last issue of The Cavalry Journal. Briefly the National Rifle Range, from a mere fifty targets, has been increased in size to 225 targets. An adequate number of mounted pistol courses and a dismounted pistol range of 150 targets will be made available. There is under construction also, a 1,200 foot powered antitank range as well as thirty 1,000 inch landscape targets and two hundred 1,000 inch rolling machine gun targets. A 500 inch antiaircraft range is under construction and there are seven new field firing ranges in addition to the one already in use on Machine-Gun Ridge. In addition to all this, there will be eighteen 1,000 inch antitank targets.

The horsemanship department will have for training purposes thirty-two corrals and three large training rings. The 1,600 horses will be housed in thirty-two cavalry-type stables. Jumping chutes will be placed leading into corrals.

Recreation

Adequate recreational facilities are being provided. To start with, each training squadron has a recreation building with a 37 x 99 foot floor space. The building is equipped with a stage and a moving picture projection room. Ping-pong tables, games, magazines, and other things are being procured to help keep John Trainee happy. The rather limited supply of recreational funds available at first has not allowed for extensive athletic equipment. However it is anticipated that this will soon be augmented from post exchange profits. Sufficient supplies are already on hand for certain sports. There will be thirty-two soft ball areas, each containing two diamonds. These will enable a maximum of 1,280 men to play soft ball at a time. Intramural games will be held between troop teams. Volley ball and horseshoe pitching courts have been provided also.

Three 16 millimeter moving picture projectors will be available. These will be used primarily as training aids, but it is thought that they may be utilized for entertainment also through the use of the film libraries of the War Department and Corps Area Headquarters.

And now spring is coming, and with it some 5,400 selectees. The entire replacement center personnel, representing almost all American cavalry organizations, are enthusiastically looking forward to their arrival.

Soon we will be engaged in turning out basically trained selectees who we hope will not only compare favorably with other replacement center products but will be so outstanding as to bring credit on the Cavalry service.

Suggestions or recommendations of all cavalry agencies are invited to the end that the Cavalry Replacement Center may reach that peak of perfection expected of it.

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No war plan extends beyond the first military engagement with the hostile main forces. Only the layman believes that the course of the campaign has followed a predetermined course, which has been planned in detail far in advance, and has been clung to tenaciously to the bitter end.

—MOLTKE (the elder).

Selective Service Men in Cavalry

By Lieutenant Leland W. Cramer, 14th Cavalry

EDITOR'S NOTE: *This type of training was in effect prior to the establishment of the Cavalry Replacement Center, now in operation.*

* * *

ON January 30th, 1941, at about 7:00 o'clock at night, a train bearing 289 selective service men for the 14th Cavalry pulled into a siding at Camp Funston, Kansas. They came from Kansas and her neighboring states, Missouri, Arkansas, Oklahoma, Nebraska and South Dakota. They had received some preliminary processing and some clothing at the reception center at Fort Leavenworth.

Darkness had already fallen when the trainees detrained and formed a column of twos on the siding. General Allen and his staff and Colonel Pierce and his Troop Commanders and the 14th Cavalry Band were there to meet them. The adjutant read off the names of the men that were to go to the various troops. As soon as a troop had the allotted number they were marched through ankle deep mud to their respective barracks.

Troop A received 31 men. Because the troop was under strength, these men and their NCO's—2 Sgts. and 5 Corporals—were assigned to a building by themselves. The bunks had already been set up and the men left their barrack bags on bunks and washed up and were marched to the Mess Hall where a hot meal was waiting for them, and so to bed.

This was on Thursday night. The following morning they assembled with the rest of the recruits of the regiment in one of the less open areas of the camp and were welcomed and given a few pointers on the army by General Allen, Colonel Pierce, a medical officer, a chaplain and a Red Cross representative. The rest of the time was spent in outfitting them, drawing equipment, etc.

Monday morning they started on their training schedule. This schedule calls for instructional formations from 7:30-12:00 and 1:00-4:30. Now first call goes at 6:15 and for these recruits to be ready for drill at 7:30 presenting a creditable appearance and having stood reveille, eaten, and cleaned their barracks they could not waste any time.

After 4:30 they must return from drill and clean up for retreat. Immediately after retreat is the evening meal and then they have the rest of the day to clean their arms, equipment, etc. Also during this time there is firing on the indoor range and studying guard orders and always special instruction for those who did not get the daily class work done as they should have.

During the evening, too, the NCO's are assembled to go over the next day's work and for special instruction.

A great many people have asked me if my selectees did not show resentment at being forced to give up their jobs, leave their families, and undergo military training, and if they were not hard to handle.

I have been happy to be able to answer that such was not the case, that indeed the direct opposite is true. I have never seen such an enthusiastic and coöperative group of men.

The contact of the army and their civilian trainees have given both sides some surprises. As illustration of some I have had: I built an indoor range on which I was conducting small bore practice. I was only letting each man fire five rounds. Several of the trainees wanted to fire more. I explained that I was trying to make the ammunition allowance go as far as possible and that I thought it would do them more good to fire a little every day than to shoot it up all at once, and that we didn't have time enough. They thought this over a while, then came and asked me if I would let them fire at night if they bought their own ammunition.

One man came to me one evening and wanted to keep out a machine gun assembly we had been using to demonstrate functioning of the machine gun. I asked him what he wanted it for and he told me the corporal had told him he must know it "cold" by the next class meeting and that he could not understand the field manual without seeing the parts working in front of him. I let him have the parts and asked if the NCO's were bearing down on him pretty hard. He said, "No, I am really surprised they are such a swell bunch of guys."

During the World War they said almost all recruits knew how to fire a rifle when they came in. In the group of selectees I have, hardly any of them had ever fired a rifle or pistol. Very few had ever hunted or had occasion to use firearms. But already their average scores are higher than the old men in the troop with the .22 rifle and pistol. (My theory of the reason is, that they have never been kicked by a Springfield, and they won't be, either, as we now have the new M-1's!)

I have been surprised at their mechanical ability. On

the first day we studied the light machine gun, one of the recruits inadvertently pulled the cover latch and spring off as he was removing the butt plate. I said, "Put that back on." He held the spring in one hand and the latch in the other and looked at them a minute, put them together and then back in place correctly. I asked him if he had experience with machine guns and he said no, this was the first time he had worked on one.

I have been asked a great number of times if I thought they were really a cross-section of American youth. I know of no way to answer this except that I have only been in the army three years and they are just like the young men I grew up with and went to school with at home.

One of the most frequent questions is, "Don't they require a lot of pampering?" "Don't they get homesick?" No, they are not being pampered and they do not require it. They are adults, not boys, and they have been on their own and have had responsibilities before. As for being homesick, the same is true again: a great many of them have been working away from home before. They like their barracks, they like the chow, and besides, they are too busy to be homesick.

Another question is, can they take it? Are they soft? The recruits have been here a month now and are entering their fifth week of training. This week's training calls for preliminary rifle practice. They clearly demonstrated that they could take it the first day on the range. The temperature throughout the day varied from 14 to 28 degrees above zero with a northwest wind of about 15 miles per hour. We had to leave Camp Funston at 6:30 AM and go to Republican Flats to fire. Everyone's eyes were watering and noses were running. No one had fired the .30 cal. before but at 200 yards in all positions except offhand, very few shots were out of the four ring. These men have earned my respect.

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"Battle is the final objective of armies and man is the fundamental instrument in battle. Nothing can wisely be prescribed in an army—its personnel, organization, discipline, and tactics, things which are connected like fingers of a hand —without exact knowledge of the fundamental instrument, man, and his state of mind, his morale, at the instant of combat. . . . Man is flesh and blood, he is body and soul. And strong as the soul often is it cannot dominate the body to the point where there will not be a revolt of the flesh and mental perturbation in the face of destruction. . . . The best masters are those who know man best, the man of today and the man of history."—ARDANT DU PICQ—(From *The Relation of Psychology to Leadership,* Helmick.)

A Day at a Semi-Permanent Camp

By Lieutenant P. B. Davidson, 2d Cavalry

THE clatter of the clerk's typewriter was suddenly stilled; the two junior lieutenants put down the books they were looking at, in the corner; the first sergeant hovered outside the troop commander's office; all attention is centered on one person, the Troop C.O. That individual, repeated the Adjutant's last words —"Move to Funston; be out of your barracks by Friday." M-Day (Moving-Day) had arrived for the troop. The event nobody thought would happen for months, was on us and we had to be out there in three days.

We knew a little about Funston; everybody in the regiment had made a couple of P.R's. It was common knowledge that a troop unit consisted of three barracks, one day-room, one mess and one administration building. One trip was sufficient to show that the whole area floated in a sea of brownish, river-bottom mud. We had a few plans and no joy in our hearts for we were the first troop to go; the others sat by, watching.

This article is written to give those outfits who follow us into Funston (or any other semi-permanent camp, they're all the same), a picture of conditions and installations as they actually are. We hope to pass on a few pointers, ones that we picked up the hard way. We'll pass on a few mistakes, too, and all of it with the hope that some other troop will save a little time, effort, and expense in the undertakings.

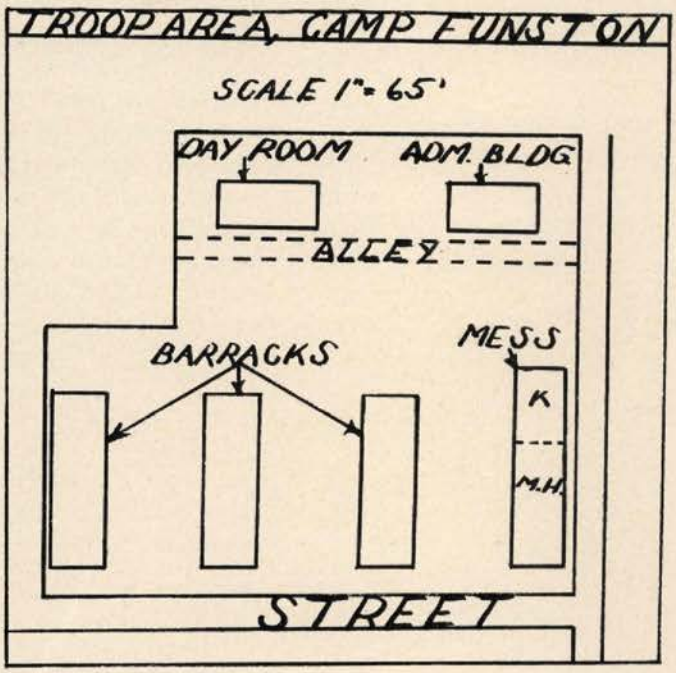
Since every troop has its own system of moving, small space will be devoted to that phase of the occupation. The determining element is time. If you have lots of it, you can prepare your set-up at Funston before you move; if you haven't got much time, you might use what we called the "Dump System." We made our move in three days.

The first day, we moved our dayroom out completely and began the movement of the supply room. Certain non-essential items of the mess and orderly rooms were moved. The move was made in four, one and a half ton Dodge trucks. The men were rationed and quartered in the old barracks on the Post. The second day, we continued the movement of the supply room and got all, but the necessary supplies of the mess and orderly rooms, evacuated. The men still remained on the Post. The third, and last day, was taken up with the final removal of the mess, the orderly room and the personal equipment of the men. The men were rationed beginning with the evening meal of the third day, at Funston. Due to the fact that the stables were not completed, our horses and stable equipment were left on the Post.

Now a word regarding this "Dump System." Due to lack of time, it was impossible to prepare our supply room at Funston to receive our equipment. Since the troop was greatly reduced in strength, due to outgoing cadres, we found that two barracks sufficed to quarter the men. That left one barrack available in which we could place our equipment while the installations (shelves, lockers, etc.) were being constructed. As the troop carpenter removed these installations from our former barracks, he would place them in the supply room at Funston, unhampered by a mass of equipment. Long after our three days of moving grace were gone, we were working on the new supply room and transferring our stores from the third barrack to their permanent place.

The Troop Unit

The troop unit consists of six buildings (not counting the stables), three barracks, a mess hall and kitchen, a dayroom, and an administration building housing the supply room and orderly room. All of the structures are of one story (except the barracks, which are of two stories) with pine floors and walls. The heating system is excellent; the barracks and dayroom are air-heated and the mess and administration buildings are heated by modern gas stoves. The component buildings of the troop unit are arranged as shown in the accompanying diagram. In order for the reader to get a clearer picture



of the set-up, each component must be considered separately.

The mess hall (and kitchen) was the most pleasant surprise of all and, I believe, most organizations will find it an improvement over their former mess. It is furnished with a huge, efficient Majestic range, two big ice boxes, hot-water heaters, sinks and mess tables. It has a long, narrow storeroom which is ample after a few shelves have been knocked out to provide room for the GI cans. The entire building is 29 feet by 101 feet. The kitchen itself is 36 feet by 20 feet.

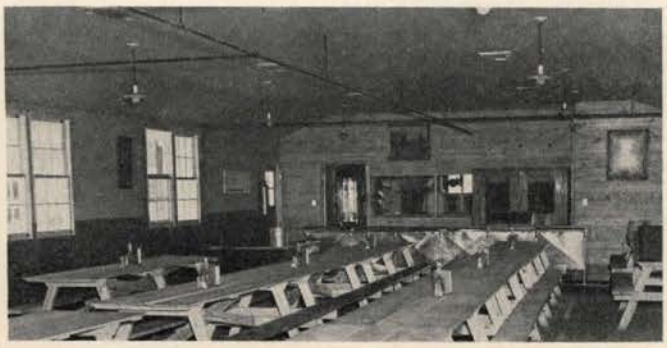
In general, the arrangement of the mess will be an individual affair depending on the installations the troop owns and the ingenuity of the mess sergeant. There are a few general notes that might be passed on. (1) I've already mentioned that the storeroom will have to be altered. (2) After trying several ways, we found that the most economical use of table space in the mess hall could be accomplished by using three rows of tables with the long axis of the tables parallel to the long axis of the buildings. (3) The kitchen table placed there by the Quartermaster was of pine boards, unsightly and hard to keep clean. (4) The ice box drains freeze very easily. The mess sergeant overcame this annoyance by placing the boxes on two-by-fours so that the heat of the room could get under the boxes.

The barracks are two-storied structures consisting of two large squad rooms, four smaller rooms to be used for noncommissioned officers' rooms, and a combination shower room and latrine. I understand that specifications call for a capacity of sixty-three men but it would be a crowded barracks with that number. A rifle troop, however, will have no trouble accommodating its war strength organization. They are issued equipped with folding steel cots and no shelves or furniture whatsoever. The latrines and showers are topnotch; new wash bowls with stainless steel mirrors and a built-in shower room, whose only drawback is that there are only three showers.

The main problem in the barracks is to find some way for the individual trooper to take care of his uniforms and equipment. We brought our foot lockers with us, and to replace the wall lockers, we constructed shelves and racks as shown in the photograph. The shelves are 16 inches wide and 24 inches long; the racks are 16 inches long. The field equipment of the individual is placed on the shelf, his uniforms hung below on the rack, his barracks bag, hats, and towel are hung on nails. The belt rack shown in the middle is built by nailing a straightened clothes hanger between the two, two-by-fours.

Barracks of Troop E.

We utilized our N.C.O. rooms for several purposes. In the barracks next to the mess hall, we installed our cook's room in the large noncoms' room. In the middle barracks, we placed our troop N.C.O. club in the large room (and the troop barber shop in the smaller room; the barber shop was installed directly above the shower, in order to simplify the problem of getting hot water to the shop). In the third barracks, the large N.C.O. room is used as a classroom and is equipped with a sand table, barracks chairs, and a blackboard.



Mess Hall, Troop E, 2d Cavalry.

Dayroom

The dayroom, or recreation building, consists of one large room and two small ones. The large room is big enough to accommodate two pool tables, a radio, and a number of chairs without crowding. The two smaller rooms have been turned into a reading room and a writing room. The doors can be closed and much of the noise of the big room shut out. One of the small rooms may have to be turned into a charge-of-quarter's room eventually. As we brought all of our pictures and trophies of the former dayroom with us, this building has been turned into a cheerful, colorful room, and one which is doubly appreciated by the men as recreational facilities have not yet (February 15th) been developed at Funston.

Administration Building

The administration building consists of a supply room and an orderly room. The orderly room is divided

into two rooms. The small outer room is used as the first sergeant's and troop clerk's room; the inner room by the Troop Commander and his officers. The arrangement of rooms is poor, there being too much space for the officers and not enough for the first sergeant and clerk. It is, however, unavoidable if the Troop C.O. is to have any privacy.

The supply room is by far the greatest problem confronting the Troop Commander in moving into Funston. One must realize that it was built (as were the other buildings) for an infantry company and is simply not large enough for the equipment of a cavalry troop, not to speak of the plunder supply sergeants accumulate through the years. The troop supply sergeant threw away two truck loads of junk before we moved out and now wishes he had discarded five or six more.

The supply room, itself, is 33 feet by 25 feet with a large sliding door in one side to admit a truck. It is turned over by the Q.M. *sans* shelving of any kind. In order for a cavalry outfit to store all of its equipment, all shelves and racks will have to be carefully planned and, at the present writing, it is doubtful if all equipment can be stored under any arrangement. The windows have been barred by the Constructing Q.M.

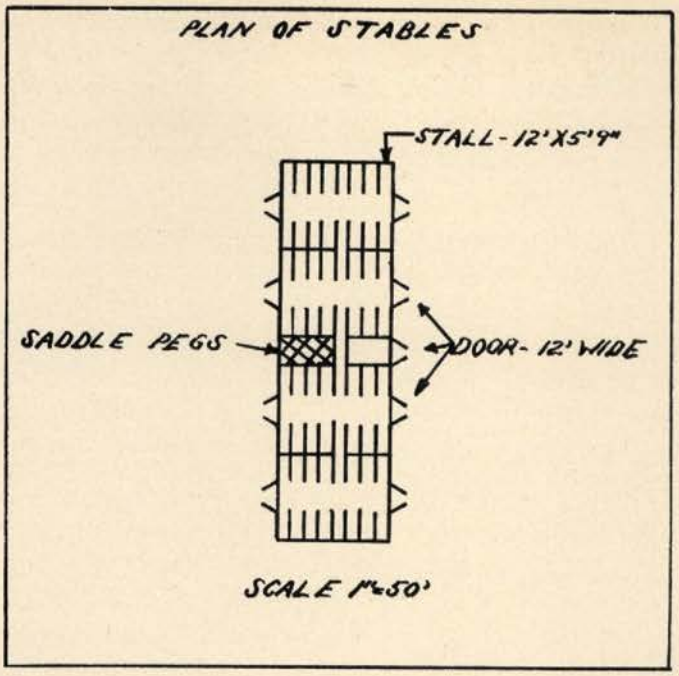
At present, there is one method of solution of this supply problem under consideration. It is to set aside one barracks per four troops for use as an auxiliary supply room. This barracks will have heavy wire screens and locked doors separating the various troop supply areas. In these areas will go the field equipment of each troop, laid out where it can be constantly checked and inspected by the Regimental Commander. This will work, but it will require materials, labor, and an extra barracks to be available.

The Stables

At present, two stables are issued per troop (when troops reach their war strength, one more will have to be added). The stables are 158 feet by 46 feet, wooden structures with crushed rock floors and a total of fifty-eight stalls per stable. There are no saddle rooms and no lofts.

The arrangement of stalls is unique, to say the least. With foresight, the Quartermaster has constructed these buildings to serve as either motor sheds, gun sheds, or stables. The stalls have sides which may be removed quickly as they are not nailed but are fitted into grooves in the posts. This makes it easy to fashion box stalls by removing the center sections of two standing stalls. There is a center aisle running parallel to the long axis of the building. There are five doors on each side of the stables, each opening into an aisle running perpendicular to the long axis. On each of these aisles are seven stalls. (See diagram.)

No stalls have been constructed on one side of the center aisle (parallel to the short axis) and in their



place seventy saddle pegs have been placed. The pegs are too close together and are so short that a man cannot place a packed saddle on them. The other side of the aisle is vacant, and in this space it is planned to construct a rack for the pack equipment. No arrangements have been made to store forage in the stables by the Constructing Q.M. at present. The best solution seems to be to remove the stalls out of one end of the stables and use this space for storage of forage.

The corrals, situated between the stables, are of crushed rock. They are 158 feet by 120 feet and will have a steel cable picket line running down the center. They are issued unfenced. There is one circular tank in the corral which will accommodate eight horses at a time.

The stable shack is of two rooms and includes a blacksmith shop, and a room serving as sleeping quarters for the stable gang. The shack contains hot and cold water, gas heat, and will sleep four men comfortably. No provision has been made for the saddler's shop.

Conclusion

In general, the semi-permanent camp is as comfortable and convenient as are the permanent barracks. With ingenuity, the troop areas can be made quite livable. The mess, barracks, and dayroom are probably on par with the average troop installations in garrison. The supply room, orderly room, and stables are not up to the average, but for a semi-permanent set-up, they suffice very well.

The troop areas are well designed, well constructed and compact. The heating system is excellent, being thermostat controlled and dependable in any kind of weather—*considering everything, we like it!*

Notes From the Cavalry Board

"The Cavalry Board invites any individual, whether or not a cavalryman, to submit for consideration constructive suggestions or ideas relating to new equipment, improvement of standard equipment, or to any problem or project under study by the Board. The Board will also welcome suggestions as to new problems that may properly be considered. Communications should be addressed to the President, Cavalry Board, Fort Riley, Kansas."

Test of Fire Power Factors of Small Arms.—The Cavalry Board is conducting a firing test to determine the accuracy of fire power factors of small arms assigned to various weapons in the *Umpire's Manual* published by the General Headquarters of the Army. An extract of this manual states, "The relative effect of the several weapons cannot be evaluated precisely, but is indicated sufficiently accurately by the following power factors:

Rifle—either M-1 or 1903	1
Automatic rifle	3
Light Machine Gun	6
*Heavy Machine Gun	10
60-mm. mortar	6
81-mm. mortar	15

*Including caliber .50 when used against personnel."

The manual also prescribes adjustments to be made in the several factors because of range. The assigned value is reduced as the range increases.

The test will include firing each of the weapons assigned to Cavalry, at field targets at various ranges.

Delay Action Tracer.—The Cavalry Board recently completed a test of delay action tracer for both caliber .30 and caliber .50 weapons. This tracer is designed to start burning brightly at a considerable distance from the muzzle of the gun, with the result that the trace is maintained for a range greater than the standard tracer ammunition. The test indicated that the trace of the caliber .30 became visible at about 600 to 800 yards from the gun and burned out at about 1,500 yards, while the trace of the caliber .50 became visible at about 800 to 900 yards from the gun and burned out at about 2,000 yards.

The Cavalry Board has been assigned a continuing project of preparing changes for various field manuals prepared under the direction of the Chief of Cavalry. Changes for FM 2-5 Horse Cavalry, FM 23-35 Automatic Pistol, Caliber .45, FM 23-40 Thompson Submachine Gun, FM 23-45 Browning Machine Gun, Caliber .30 HB, M1919A4, Ground, and FM 23-60 Browning Machine Gun, Caliber .50 HB, M-2, Ground. Changes for the above manuals and others prepared under the direction of the Chief of Cavalry will be prepared from time to time so as to keep the manuals up to date with changes in organization, equipment, and doctrine. Report of any errors or desirable changes noted by individuals or units of the Cavalry service will be welcomed by the Board.

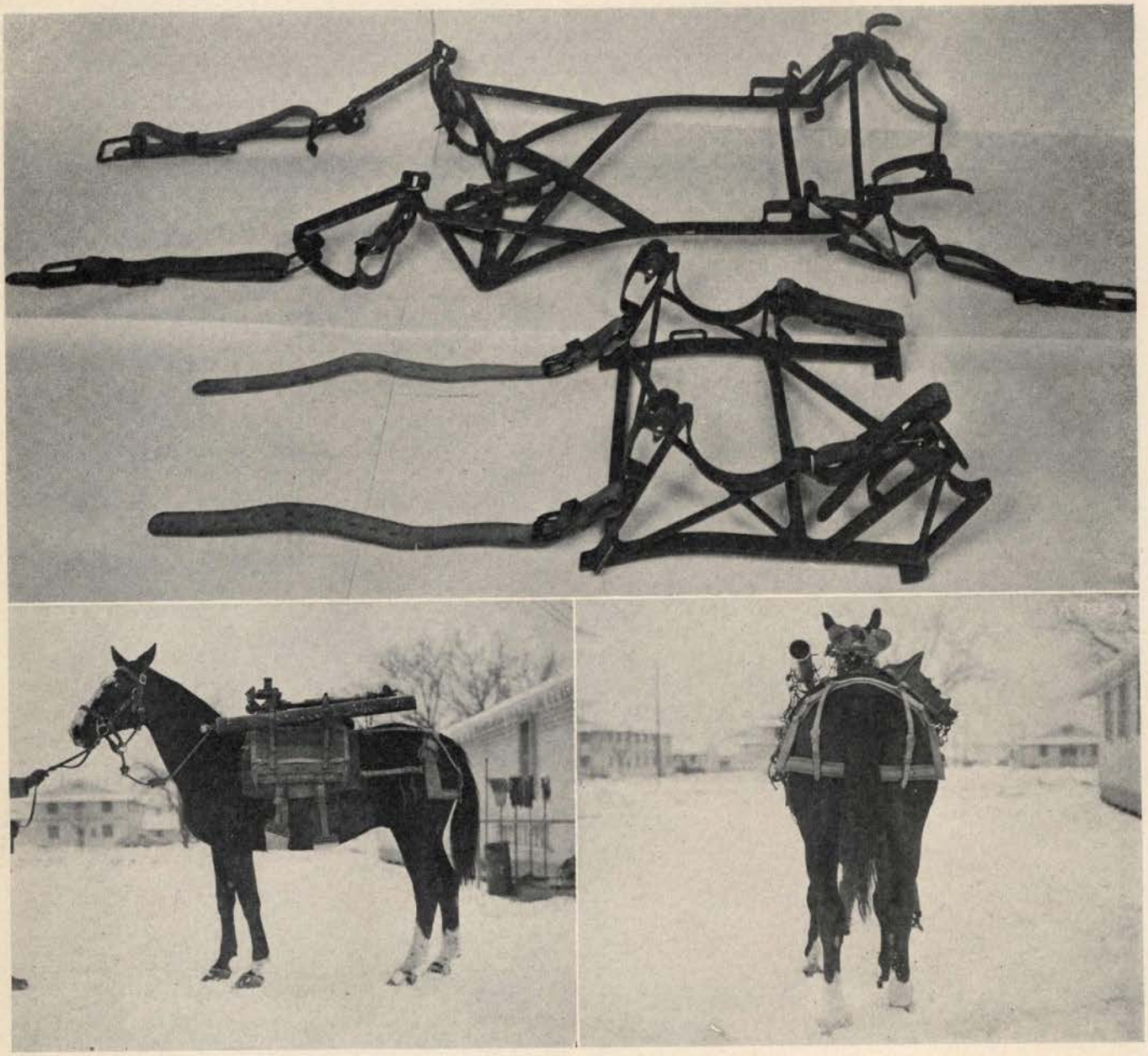
Motortricycle.—The new military motortricycle (3x2) has been received by the Cavalry Board for service test. This vehicle is designed to carry three passengers, including the driver. It apparently is very sturdy and stable cross-country.

Cargo Carrier.—A full track cargo carrier has been received, and tests are being conducted to determine the needs, if any, of such vehicle in the Cavalry service.

Over-the-shoe Rubber Boots.—These articles are lightweight knee-length rubber boots which may quickly be pulled over the shoes or leather boots. While not satisfactory for marching they might prove to be essential, for instance, for motorized personnel engaged in digging their trucks out of the mud, or for use in bivouac.

Tool-set, Horseshoers.—Before taking action on previous recommendations made by the Cavalry Board for improvement in types and quality of certain tools which should comprise the horseshoer's tool set, the Quartermaster General has forwarded for test a new tool set which was done in response to a request for a lighter weight tool set by the Cavalry Board in 1937. Regardless of the results of this latter test, the Cavalry Board will reiterate its recommendations for satisfactory tools to be included in the next standardized tool set for horseshoers.

Chains, Tire, Kwik-on-rod.—Each chain has eight cross chains spaced by pairs so that when they are on the wheel the traction obtained is similar to that obtained with the use of four separate pairs of so-called emergency chains. Because of this spacing, it is possible, by the use of a hooked rod fastener to put on the chains without jacking up the wheel. This seems to be a good emergency feature to be used when the saving of time is important. However, for the same reason that four pairs of emergency chains give less satisfactory traction than twelve cross chains equally spaced, this type chain is less efficient than the regular type skid chain.



81-mm. mortar hangers

81-mm. Mortar and Ammunition Pack Hangers.—Pilot models of 81-mm. mortar and ammunition hangers constructed by the Ordnance Department have been tested recently by the Cavalry Board. These hangers were constructed according to sample hangers designed and constructed by the Cavalry Board and local ordnance personnel. The mortar packs include the tube, bipod and base plate arranged as illustrated. Although undesirable, it was necessary to include a top load in order to secure a proper balance. It will be noted that the tube is placed at an angle to the horizontal. This was necessary in order to place the tube as close as possible to the saddle and still avoid contact with the horse's neck or hip. The base plate makes a convenient side load. The bipod was necessarily placed rather high behind to avoid contact with the horse. The length of the tube and bipod causes the load to rock somewhat at the gallop. However, this motion is not excessive. Top load brackets are made as a part of the side load hangers. While this is undesirable it is believed preferable to separate top load brackets bolted to the saddle, in the interest of flexibility. These brackets are braced to secure strength and rigidity.

The ammunition hangers were also constructed according to designs submitted by the Cavalry Board. The hangers are constructed so as to carry standard shipping containers, 6-round bundles of shell M-43, either HE, or practice, or 3-round bundles of shell, HE, M-45 or smoke shell. The normal load is two bundles of shells—one on either side. This provides a well balanced, stable load of about 190 pounds, including the saddle. The hangers are designed to carry an additional bundle as a top load. This is practicable for short distances and at slow gaits, for instance, in transporting

ammunition from the combat truck to the mortar position area. The additional bundle increased the total weight on the horse to about 240 pounds.

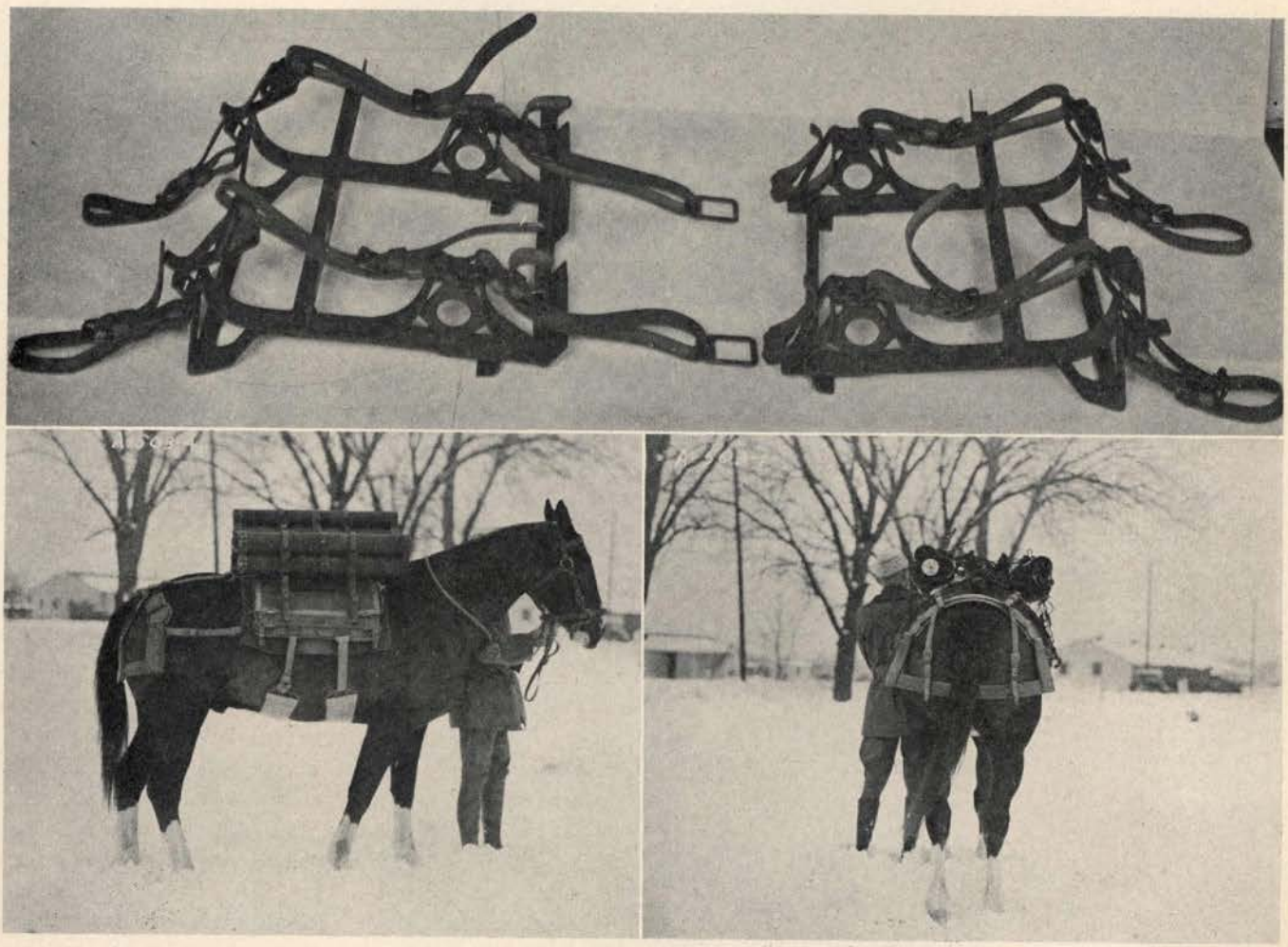
Truck, ¼-ton (4x4) Liaison.—Practical tests of these four cars are being continued. Many possible uses of this car for the Cavalry are being considered.

Tire Pump.—Service tests have been conducted of an air pump for use on pneumatic tires. This pump would eliminate the old type hand pump, and utilize the vehicle motor to pump air into the tires.

Receiver, Radio, BC-482.—The Receiver BC-482 is similar to the BC-312 to the extent that it has the same basic circuit and has about the same weight and dimensions. In fact, it is understood, it was manufactured by a commercial concern according to the basic specifications for the BC-312 receiver and specifically intended to be used as part of the SCR-245 radio set. The main difference between the two receivers lies in the elimination of bands of frequencies which are outside the frequency range of that needed for this type of set. That is, whereas the BC-312 receiver has a frequency range from 1,500 kc to 18,000 kc, the BC-482 is confined to the band 2,000 kc-6,000 kc. (The band allotted to Cavalry units lies between 2,000 kc and 3,000 kc.) This reduction has permitted simplification of the set which, in turn, makes all parts easily accessible for maintenance and, in addition, has made it possible to reduce the noise level with a consequent improvement in the readability of signals. The saving in weight thus afforded has been taken advantage of in making a more substantial cabinet which constitutes an essential improvement over that of the BC-312 receiver.

Other projects before the Board are:

Antitank Gun (37-mm., M-3).
Pull type single shot antifire trigger mechanism for BMG, Caliber .50, M-2, HB.
Gun elevator for MG, Caliber .30, tripod mount, M1917A1.
Study on Cavalry Weapons.
Low quarter shoes.
Modification of horse equipment.
Shelter tents and Pyramidal tents.
Weapon carrier.
Water cans.
Feed boxes.
Combat suits.
Airplanes for short range liaison.
Bullet seal inner tubes.
Frequency modulation vs. amplitude modulation.
Radio needs for Cavalry.
Textiles for uniforms.



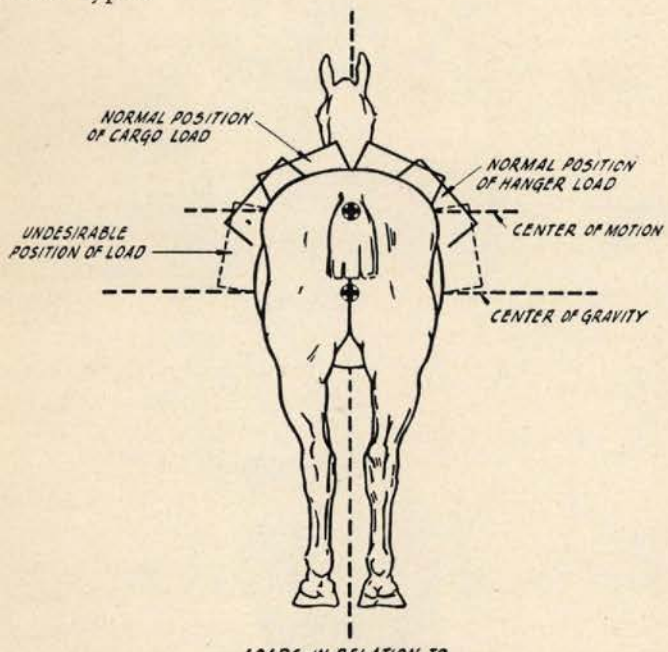
81-mm. ammunition hangers

CAVALRY PACKS

By Colonel Albert E. Phillips

"SO now you are a pack outfit, and a Cavalry pack outfit at that"—said the Colonel of a Cavalry regiment as he designated a troop to be the machine gun troop of his regiment. "What's the difference between a Cavalry pack outfit and other pack outfits?" replied the Captain, intending partly to lead the Colonel out into a faraway field, and perhaps trip him up, or, at least find out what the old boy knows about the matter.

The Captain quickly learned that he wasn't as smart as he thought he was when the Colonel informed him there are three types of pack transportation. One:—that of pack trains, of which hitched side loads predominate, the gaits of the pack mules being mainly the walk, running walk, and occasional slow trot. Two:—that of pack artillery, of which high top-loads predominate, with the walk the normal gait; the management of this type differing materially from that of pack trains. Three:—that of Cavalry pack transportation with compact side loads carried in hangers, and a few light top-loads, the gaits being those of Cavalry and the animals being horses. Pack transportation at Cavalry gaits constitutes an entirely different problem from the two other types.



LOADS IN RELATION TO CENTERS OF GRAVITY AND MOTION

Well, here we are then, a pack outfit with brand new pack saddles, but with our old horses and a good complement of old soldiers. Where shall we start and what shall we do to become worthy of the American Cavalry tradition; to be, in fact, a Cavalry troop worthy of the name and not a mere parade outfit? And by this I am referring back to the Mexican Punitive Expedition of 1916-1917 in which three out of the four machine gun troops were "out," due to disabled animals, within ten days. In other words, three Cavalry regiments had no machine guns after ten days of campaign marching. A terrible indictment, but true, nevertheless. One of these three regiments did have two guns left for a few more days. The fourth regiment marched six days before crossing the border, made the 120 mile forced march to Colonia-Dublan, and continued south to Parral and back to Dublan with all guns and all animals in top condition.

The "troubles" were caused partly by *Aparajos;* partly by the machine gun troops being required to take the rates and the gaits of the column—which are seldom the best gaits for either cavalry or pack horses—but mainly to a lack of detailed knowledge of the handling of pack saddlery.

Gaits

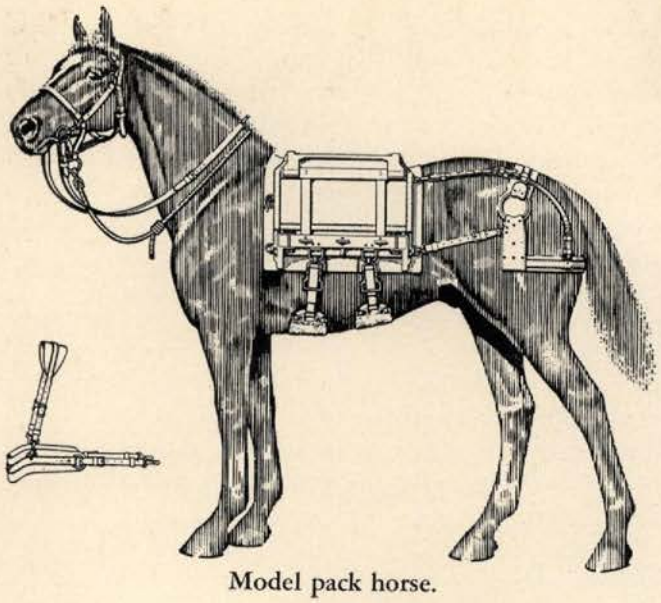
The best gaits for a cavalry pack outfit are the walk, and the trot, which does not force the pack animals into a gallop. For, be it remembered, a pack animal will take that gait which is easiest for him and, when the trot exceeds that of eight miles, many pack animals will break into a gallop. A pack troop can trot for a longer period at eight miles without injury than to alternate between the walk and a nine mile trot. Whenever a pack horse gallops while the troop is at the trot, the rate is too fast for that troop or there is something wrong with the packsaddle or the pack load of that horse. A saddle or load forward of its correct position tends to force the horse, or, at least, make it easier for him to gallop. Generally, the trot is too fast.

Pack Horses

While dissecting the packsaddle and learning its intricacies, your most important additional problem is the selection of the most suitable horses for carrying those packsaddles. Your success as a pack outfit depends upon being present with the cavalry when needed, and the bucking broncos and the rough-gaited horses will not get you there. You want a pack horse that travels neck-and-neck with the driver's horse; one that does not hang back and have to be pulled along—such as we see much too often in photographs.

You want the type of horse that the sergeants usually ride—the horse that has a good back for a packsaddle,

★Colonel Phillips, Cavalry (Retired), and now on active duty with the Quartermaster Corps, designed and developed our present splendid pack saddle.

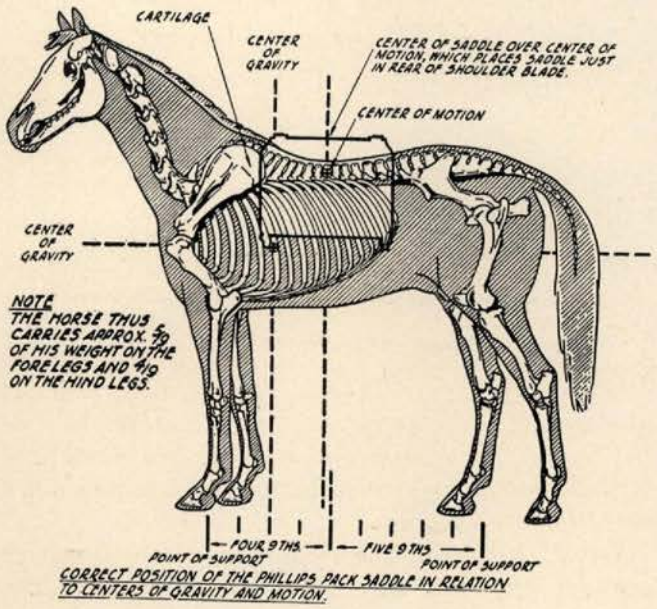


Model pack horse.

but with little motion to its back at both the walk and the trot, and which travels low to the ground at the trot. You do not want either a high-trotter or an elongated walker with a camel-like motion to its back. Let the men ride these other horses. They'll soon train them as suitable mounts. You require a pack horse that steps out at the walk and trot—a better horse than his teammate rides. Train your teams to travel in pairs, to break into the gallop on the instant, and to stop just as quickly. A rapid removal of the load when halting from the gallop will achieve prompt halting. Horses soon learn this. I have known of but two Cavalry machine gun units that gave preference, in the selection of horses, to those carrying packsaddles, and these two units were outstanding. The Commander of one of these units said to me: "I now never have to worry about my packs or my outfit."

The Packsaddle

The Cavalry packsaddle is simplicity itself, yet we seldom see a photograph of a packsaddle "breeching"



CORRECT POSITION OF THE PHILLIPS PACK SADDLE IN RELATION TO CENTERS OF GRAVITY AND MOTION.

properly adjusted. The breeching should be adjusted with the saddle in its correct position, the center of the packsaddle over the center of the motion of the horse—the fifteenth vertebra, fourth rib from the rear. Pressure on the breeching should be exerted through the lower, or holding, strap—never on the upper, or hold-up strap.

Cinch pressure is mainly on the front cinch. Rear cinch pressure should merely be sufficient for the rear of the saddle to gain contact. A too-tight rear cinch will cause much trouble. Cinch pressure is all-important. Always have the minimum required, both for marches and for combat.

Break the saddles in gradually, adjusting the padding wherever excessive sweat marks appear upon the backs and sides of the horses, but, also pay attention to "dry spots," as these frequently indicate "no pressure." The point is—to remove hair from over the excessive sweat marks first, and then perhaps the "dry spots" will disappear as pressure becomes equalized. The mohair pad absorbs sweat and evaporates it, sometimes leaving dry spots.

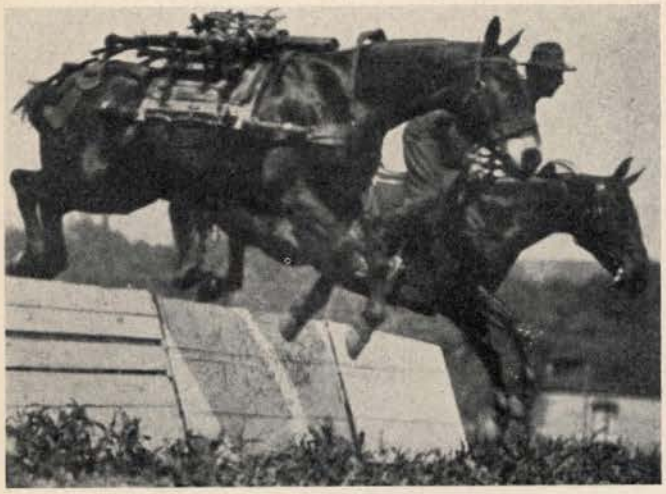
Whenever an injury occurs, endeavor to determine the cause before disturbing the pad. But, whatever the cause, it will generally be necessary to remove pad pressure from over the injured spot to insure healing. There are two methods of doing this:

1. Place the saddle upon the animal's back, without the mohair pad, in the same position it was before unsaddling, and cinch tightly to mark the pads. Oxide of Zinc or Methylene Blue may be used to mark the pad. Unsaddle, detach the pad, or pads, affected and remove sufficient hair to relieve all pressure. Hair is removed from the top or outside of the pad through appropriate hand holes. Pull hair from the back of the pad with the hair hook, and then push in the belly side to form a concavity, and tie. The detached pad should be held over the injury as a check upon your work.

2. The second method is similar to the first, but requires a little more experience. It consists of placing a vertical chalk mark on the horse along the front line of the saddle then, having an assistant place the detached pad upon the horse's back, in coincidence with this mark, at the approximate height the pad would be when attached to the frame. By observing the pad from the opposite side one may determine the amount of hair to be removed or added. Hair should be added to the pad when the injury heals.

All horses lose flesh in campaign, thus requiring adjustment of pads. Assuming that your saddle were fitted in the early part of the campaign, adjustments will more often require the addition of hair. If curled hair is not available, grass, hay, straw, pieces of gunny sacks or paper may be used for building up the pads.

A word about breast collars. Experience has shown that breast collars are not required except for about five per cent of all pack horses. In the great majority of cases breast collars are improperly adjusted, and thus cause trouble. Most pack units adjust these breast col-



Load stability—correct adjustment.

lars for a neat or snug appearance for garrison duty. A snug or tight-fitting breast collar at the walk pulls a packsaddle forward at the gallop—and this most emphatically is not desirable—for, remember that all saddles move forward and blankets move rearward. If the breast collar is used it should be loose-fitting, or adjusted for the gallop. But, what we generally see is just the opposite of what is advocated here; *we see tight breast collars and loose-fitting, sloppy breechings. Sloppy breechings are at once tell-tale indication of a lack of knowledge of pack saddlery.*

Make use of your cinch quick-release devices, by having the straps clean and lightly oiled. And don't let anyone tell you that these devices do not hold; they were tested exhaustively before adoption. Whenever a cinch becomes loose it is generally due to the saddle settling or the drawing up of the horse's belly. If you care to test the devices, draw a mark along the edge of the bottom bar of a device and if this mark moves the strap has slipped.

Detailed instructions for the fitting and adjustment of packsaddles are found in T.M., the Packer, June 10, 1931. (For a treatise on Cavalry Pack Loads, see my article on page 226, the May-June, 1938, CAVALRY JOURNAL.) *Also, see Chapter 5, "Pack Transportation," FM 25-5 1939, "Animal Transport."*

★ ★ ★

Our Packsaddle

The design of the Phillips Packsaddle has made possible the development of some new and superior types of hitches.

For diagrams illustrating the Sweeten, Nagle, and Phillips cargo hitches, see *Basic Field Manual—Animal Transport* (FM 25-5 War Department). This document was prepared under the direction of the Chief of Cavalry.

For the convenience of members, the Cavalry Association will furnish the *Basic Field Manual—Animal Transport* direct from this office. Price, 25c. Address: 1624 H Street, N.W., Washington, D. C.

Notes From the Chief of Cavalry

Supply of Cavalry

On frequent occasions there are expressed ideas from various sources that the supply of Cavalry elements is more difficult and requires more transportation facilities than for comparable units of different arms. An investigation of this subject indicates that such opinions are not supported by actual facts. The following table shows the actual tonnage required for a day's supply of the principal types of present-day combat divisions:

Amored Division	513 Tons
Square Infantry Division	305 "
Cavalry Division	262 "
Motorized Triangular Infantry Division	221 "
Standard Triangular Infantry Division	201 "

It may be noted further, that when hay is omitted from the supply of the Cavalry Division, its tonnage is reduced to 206 tons and when both hay and oats are omitted, which may be the case in an emergency, the tonnage of the Cavalry Division is reduced to 166 tons, or the smallest requirement of the five types of divisions.

Comparison of Fire Power

The following figures indicate the organic weapons of each type division upon which a basis may be made of comparative fire power:

Weapon	*Square Div.*	*Triangular Div.*	*Cavalry Div.*	*Pack*	*Vehicle*
MG (HB) .50	144	113	265	32	233
HMG .30	120	122	356	48	308
LMG .30	72	57	327	144	183
Auto Rifle	506	375	15		
Rifle	9,541	6,942	4,592		
75-mm. How.			24		
105-mm. How.	48	36	12		
155-mm. How.	24	12			
37-mm. AT	84	60	67		
81-mm. Mortar	48	36	28		
60-mm. Mortar	108	81			
75-mm. AT	16	8			
Sub MG .45		35	490		
Pistol	10,532	7,199	10,344		

Training Literature

When the present-day army emerges from the current status in which supply is emphasized and enters a new stage of intensive training, there will arise acute interest in the utilization of all training aids. One of the foremost aids to training is found in our military training literature. For the Cavalry, the following list will indicate to those who are interested various types of training aids charged to the Cavalry for preparation, and the status of each particular item:

Field and Technical Manuals

			Date Last Published
Cavalry Field Manual	2-5	Horse Cavalry	August 6, 1940. Change No. 1. Now in hands of printer.
Cavalry Field Manual	2-10	Mechanized Elements	Now in hands of printer. Probable date of publication, April 30, 1941.
Cavalry Field Manual	2-15	Employment of Cavalry	Now in hands of printer. Probable date of publication, April 15, 1941.
Basic Field Manual	23-35	Automatic Pistol, Caliber .45, M1911 and M1911A1	April 30, 1940.
Basic Field Manual	23-40	Thompson Submachine Gun, Caliber .45, M1928A1	August 19, 1940.
Basic Field Manual	23-45	Browning Machine Gun, Cal. .30, HB, M1919A4, Ground	August 14, 1940.
Basic Field Manual	23-60	Browning Machine Gun, Cal. .50, HB, M2, Ground	September 25, 1940.
Basic Field Manual	25-5	Animal Transport	June 15, 1939. Change 1, Sept 30, 1940.
Technical Manual	2-220	The Horseshoer	Now in hands of printer. Probable date of publication, April 1, 1941.

Cavalry is responsible for the production of the following strip films and training films: Their status is as shown:

Strip Films

No.	*Title*	*Status*
2-1	Care of Animals.	Released June 15, 1940
	Military Org.; Org. of Cavalry.	Cavalry Board preparing.
	Horsemanship.	Cavalry Board preparing.
	Cavalry Weapons.	Cavalry Board preparing.
	Combat Principles of the Rifle Squad & Platoon and Lt. Machine Gun Squad and Platoon.	Cavalry Board preparing.
	Cavalry Marches and Camps.	Cavalry Board preparing.
	Combat Principles of the Cal. .50 Machine Gun Platoon, 81-mm. Mortar Platoon and 37-mm. Antitank Gun Platoon.	Cavalry Board preparing.
	Combat Principles of All Troops of Cavalry Regiment (H).	Cavalry Board preparing.
	Antiaircraft Defense.	

Training Films

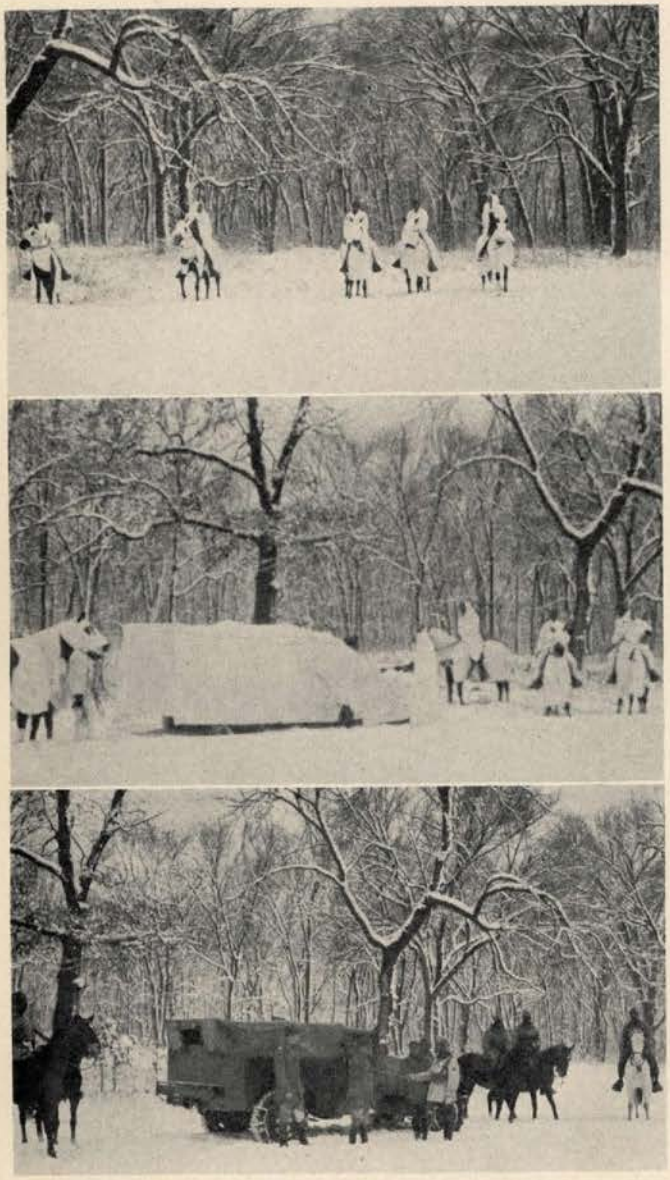
Proj. No.	*Title*	*Status*
55	Lt. MG Platoon, Cav. Tr. (H).	Being written.
56	Reconnaissance (Scout Car) Platoon.	Being written.
156	Horsemanship, Instruction Mounted (Basic TF)	Being written.
	Animal Management (Basic TF).	Approved for production. Preparation not yet started.
	Pack Transportation (Basic TF).	Approved for production. Preparation not yet started.
	Communication Plat., Hq., Tr., Cav. Regt. Horse.	Approved for production. Preparation not yet started.
	Heavy MG Tr., Cav. Regt. (H).	Approved for production. Preparation not yet started.
	The Cal. .50 MG Plat., Spec. Weapons Troop Cav. Regt.	Approved for production. Preparation not yet started.
	81-mm. Mortar Plat., Spec. Weapons Troop Cav. Regt.	Approved for production. Preparation not yet started.
	Cav. Rifle Tr., (less platoons).	Approved for production. Preparation not yet started.
	Scouting and Patrolling, Mtd.	Approved for production. Preparation not yet started.
	Portée Plat., Serv. Tr., Cav. Regt. H & M.	Approved for production. Preparation not yet started.
	The Motorcycle Troop.	Approved for production. Preparation not yet started.
	37-mm. Antitank Plat., Weapons Troop, Cav. Brig.	Approved for production. Preparation not yet started.
	Reconnaissance Tr., Rcn. Squadron, Cavalry Division.	Approved for production. Preparation not yet started.
	Cav. Rifle Plat. (revision of TF's 65, 73, 74, silent, and TF 18, sound).	Approved for production. Preparation not yet started.

Cavalry Camouflage in Winter

By Captain E. C. Sanders, 10th Cavalry

SINCE before the days of recorded history camouflage has been practiced. In nature we have protective coloring of birds and animals that blends so well with their native surroundings that they are hard, if not almost impossible, to perceive at a distance.

In the Finnish-Russian Campaign the hardy Finn added to his laurels as a soldier by his remarkable use of camouflage that would enable him to blend with his snow-covered surroundings in the below zero cold of the Arctic winter.



10TH CAVALRY

Top—Patrol emerging from woods. Center—Reconnaissance detachment. Bottom—Message received at regimental command scout car

We commonly associate the term "camouflage" with efforts to conceal big guns and their emplacements, hangars and air fields and machine gun nests.

To Cavalry, the use of camouflage is important.

To instantly take advantage of terrain and natural concealment is part of a Cavalryman's training. The art of camouflage is practiced to some extent by every seasoned trooper.

Somehow, whenever one thinks of Cavalry in campaign, he does not associate ice and snow and cold weather with possible conditions of field service. Yet Cavalry has operated in blizzards and under climatic conditions that would seem to foredoom any effort that could be made.

With this in mind, the 10th Cavalry took advantage of a heavy snowfall in January at Fort Leavenworth to perform some practical experiments in Cavalry Camouflage. Troops were taken out and observed in close and extended order formations at varying distances.

Under favorable circumstances it is harder to conceal a mounted trooper than it is a man dismounted. In the snow, unless protected by trees or other cover, a mounted trooper stands out distinctly as far as the eye can see. If that same trooper and his mount were covered with a white material what would be the effect at varying distances? In picture No. 1 an officer's patrol from Troop A, 10th Cavalry, is shown at a distance of fifty feet. Animals and men were draped with ordinary bed sheets. While they show up very plainly, and the contrast is pronounced at the short distance in the photograph, when this same patrol operated in lightly wooded areas the camouflage was surprisingly effective even as close as 100 yards. Uncamouflaged parts of horses did not stand out and it became more difficult with increasing distance to see the patrol at all. At 200 yards, the mounted patrol could not be seen while motionless, and at 500 yards could hardly be seen while in motion.

Similar experiments were carried out with a draped scout car. Photograph No. 2 shows the scout car delivering a Radio message to Major R. G. Lowe, Commander of the Officers' patrol. Major Lowe, almost invisible, may be seen standing at the right front fender of the scout car.

Taken in the same high, dense spot, photograph No. 3 shows a reënactment of picture No. 2, Major Reed is shown handing a message to the noncommissioned officer. Behind Major Reed stands Major L. L. Doan.

The contrast shows very clearly the effectiveness of improvised camouflage, as well as the ease with which this protective covering may be made.

Winter Campaigns

By Colonel C. A. Romeyn, Retired

NOTES *from the Cavalry Board* in The CAVALRY JOURNAL, November-December, 1940, brought up questions concerning Cavalry campaigning in real winter; and those questions stirred up the brain cells of this "old fogy" and evoked memories of a real winter "campaign" of thirty-four years ago in South Dakota. Some of the lessons we learned then may be of value if our cavalry is again ordered into the field in zero weather. This campaign, I believe, was the last real winter operation undertaken by our cavalry in severe cold weather; it took the troops about one hundred miles from our railhead. Supporting troops were equally far, or farther, away. No supply dumps existed nearer than the railhead, so that supplies forgotten at the start were obtained a week or perhaps a month later, perhaps not at all. Practically nothing except hay could be purchased in the field.

1907

In the fall of 1907, the entire Second Cavalry was at Fort Des Moines, Iowa, having been concentrated that summer from Riley, Snelling and Assiniboine. A large part of the Ute Indian tribe had become dissatisfied with conditions on their reservation in New Mexico and had trekked northeast to Montana and South Dakota. They had been rounded up by the 10th Cavalry and, I believe, the 4th Cavalry and placed on a part of the Cheyenne River Agency (Sioux), in South Dakota. They did not like that location either, and becoming ugly the Agent asked for troops.

The Second Cavalry received a warning order to prepare a squadron for field service in South Dakota; and a short while later the order came to send a squadron at once to the Cheyenne River Agency to quiet the Utes. This was about the first of November. The Second squadron was commanded by Major F. W. Sibley, who probably knew as much about Indian campaigns as any officer then on the active list, and for that reason I imagine his squadron was selected.

We were to move by rail to Gettysburg, South Dakota, about a thirty hour trip, then by marching to Thunder Butte Creek where the Utes were located, about one hundred and twenty miles from Gettysburg.

At that time we had no tables of equipment for various types of field service, and few of the officers and enlisted men had ever been in the field in severe winter weather. We cudgelled our brains to think of everything we would need. The supply of real winter clothing was limited, but we managed to get equipped with muskrat caps, and the wool lined one-finger winter gauntlets. The officers managed to get the muskrat gloves; though I believe the enlisted men were better off with their one-finger gauntlets. We did not have enough blanket-lined canvas overcoats for the entire command but took enough along for guard duty. The enlisted men took all the blankets and comforters they possessed. Thirty days field rations, thirty days oats, two hundred rounds of rifle ammunition and fifty rounds of pistol ammunition per man were taken. Our horses luckily were not clipped and were smooth shod.

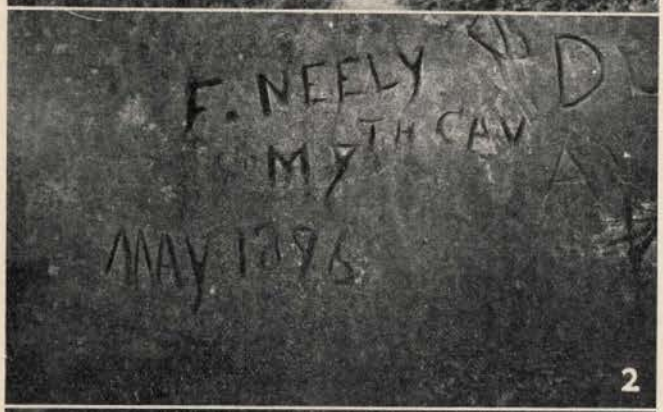
We marched into Des Moines from the post and loaded on the train in the yards. Wagons were run up on ramps and lashed and chocked in place. Horse equipments were sacked and tagged and loaded into box cars. We finished loading at about midnight of the day after we had received the warning order.

SOUTH DAKOTA

About thirty hours later, when we awoke we found ourselves at Gettysburg. The ground was nearly bare of snow and the thermometer was below zero. Major Sibley had given orders that we were to travel light as we did not know what we might run into or how far we might have to go if the Utes decided to hit the trail again. Officers were to be allowed one tent per troop. They could take a cot or a mattress but not both (the wise ones took the mattress). Yours truly, prided himself on being a rough field soldier and took neither, having a heavy canvas bed roll, a heavy Navajo blanket 6′ x 8′ and three other blankets. I was not cold either. No stoves. Officers would mess with their troops. Enlisted men were to use shelter tents, but could take squad-rolls of extra bedding. Each troop had two "Army" wagons. For the benefit of the younger generations I might explain that the "Army" wagon was a six mule "jerk-line" wagon that would carry about eight thousand pounds.

We spent all morning unloading our stuff, sorting it out, and loading wagons. Major Sibley said to load to the limit with oats and rations. The surplus equipment and stores were left at Gettysburg with a detachment to guard them. That afternoon we marched twenty miles and camped on the left bank of the Missouri, opposite the Agency. And for the first time in their lives many of the youngsters heard coyotes yelping, and wondered how dangerous they might be.

The Missouri was of course unfordable and the nearest highway bridge was several hundred miles away (if any existed). The only means of crossing was on a small scow ferry that held about twenty horses. It took



"HOOF PRINTS"

1—Custer's Trail of May 20, 1876, as it appeared in fall of 1939. 2 and 3—Names of Frank Neeley and W. C. Williams on rock at Custer's 12th camp site on Davis Creek about 6½ miles east of the Little Missouri River, May 20, 1876. 4—Charles Windolph, first sergeant, Troop H, 7th Cavalry, 1873 to 1883. Awarded Medal of Honor. He was eighty-nine years old on December 5, 1940

practically an entire day to get the squadron and equipment over to the Agency side.

All telephone lines to the neighborhood of Thunder Butte Creek were out of commission so nothing was known of conditions. In consequence we did not linger long at the Agency but marched out the next morning on our hundred mile trip. We covered about twenty-five miles (as I said before marching hours in the far north in winter are few) and it was a cold, cheerless, camp we made that first night out from the Agency.

Bivouac

We were on the bank of a small creek. No ranch was nearby so we had no hay. Horses were grazed, some held by men on lariats, a few picketed out. Some of the latter caused considerable commotion by pulling up the pins and then running amuck through the herd. A runaway horse throwing around a lariat with picket pin attached is no joke. Grass was plentiful, however, so in a couple of hours the herd was pretty well fed. Holes had to be cut through about six inches of ice to get water for horses and men. Wood was plentiful, dead cottonwood, and the camp was filled with fires for warmth. During the night a courier came in with a message that Captain Tilford whom we had left sick at the Agency was desperately sick, apparently appendicitis. Doctor Johnson was sent back at once, but with orders to rejoin as soon as possible as he was our only surgeon. He rode back that night; operated on Tilford (on a kitchen table, by kerosene light) and rode back to rejoin us at our next camp. He rode about a hundred miles in thirty-six hours with practically no sleep. (Tilford is still living though he had to be retired as a result of his operation and subsequent primitive care.)

In the morning, orderlies built camp fires in front of the officers' tents, around which we stood or squatted while we ate breakfast. We found a hot cup of coffee to be a grand handwarmer; and dropping knife, fork, and spoon handles into the coffee made eating more pleasant. No shaving or even face washing was indulged in, in the morning. Shaving in fact ceased until our return to the Agency. I left my fountain pen out of my pocket for the night and of course it froze solid, shoving the feed and pen point about an eighth of an inch out of the barrel. All morning reports had to be made out in pencil as the ink in the field desks was frozen. Water holes were chopped out again in the morning but it was labor wasted for the horses would not drink. We watered later at a creek crossing where it was still open.

We reached Thunder Butte Creek the fourth day out from the Agency, found things quiet, and started in to make ourselves as comfortable as possible.

Temporary Camp

The enlisted men started burrowing, making small dugouts roofed over by their shelter tents. Some went so far as to make small fireplaces in these dugouts. The mess gangs dug into the bank of the creek and made half dugouts, roofed by paulins or flies.

A prospect of hay shortage started us herding the horses. This was a new experience for men and horses.

We worked them slowly into it by knee haltering, i.e. tying the halter-shank around a fore-cannon with a round turn and two half-hitches so that the horse's head could not be brought up far enough to permit a trot. Even at a walk the heads bobbed up and down giving the herd the appearance of a lot of cripples. These hobbles were removed a few at a time from the quieter horses until soon we had the entire herds coming in at a walk. The usual procedure was to have half of the horses ridden out to the grazing area; the other half, led. The horses were knee haltered and turned loose, with a guard of five men. Coming back to camp, four men would ride in front equipped with long switches to slap the noses of over-ambitious leaders of the herd.

Conferences with the Utes and Agency officials soon ironed out the troubles; but we saw that we had to remain for a while; and the wagons were sent back to railhead to bring up heavy baggage, more forage and more rations. With the arrival of these our camp grew quite luxurious. "E" Troop officers had a conical wall tent and sending over to a nearby trading store Captain Wade bought a half-glass door and some two by fours. Then he made a real door for his tent to obviate untying and tying the flaps everytime anyone entered or went out. Wade also established the first bath by draping a bed-roll canvas over four tent-pins in his tent. With the stove going and hot water from the kitchen we were able to have some comfortable baths. Previous to that, I had taken a bath in the creek with air temperature slightly above freezing, water same, and with snow on the banks. Daily baths are not a necessity in zero weather but there finally comes a time. . . . That creek bath was thorough but quick.

Rations did not offer much variety, and game was scarce. I decided to experiment, and killing some prairie dogs with a .22 caliber rifle I had brought along, I tried them. They were just like squirrel. Young ones were good fried but the old ones went better in a stew. Potatoes started to run low—they had to come from Gettysburg—so we stopped paring them with a resulting considerable economy. *I* think they tasted better baked, boiled, and even fried, with the skins left on. The "K.Ps" certainly approved of them.

We had two great troubles with the tent stoves; too much heat went up the chimney, and in doing so took many sparks up that dropped on the canvas. The troubles were lessened by dampers improvised from tin can tops and some wire. We made spark arresters from perforated cans. The tent burning was really serious. The khaki dyed canvas seemed much more inflammable than the undyed canvas, and few tents returned to Fort Des Moines without spark holes. Colonel West (our regimental commander who joined us later) was at one time railing at the carelessness of anyone who let a hole burn in his tent. Reaney, his quartermaster suddenly said: "Look at your tent, Colonel." By the time Reaney and the colonel got the fire out the hole was about eighteen inches in diameter!

About ten days after our arrival we were astounded to hear that the rest of the regiment was on the way to rescue us! For several days after our departure from Gettysburg no word had been heard from us. Then a rumor spread that we were surrounded by hostile Indians. The rescuing force was much astonished when they found us living so luxuriously. In many ways we were better off than the new arrivals for we had had first choice on all Q.M. supplies and also had had time to fix up our camp. We had a good officers' mess going and gave the incoming officers a lunch of coffee and hot cakes—a better meal than they had had for several days.

Everything was quiet now, and after a few days more we marched back to the Agency, leaving one troop at Thunder Butte Creek for the rest of the winter.

Permanent Camp

At the Agency we set up a permanent camp near the river and awaited orders. Lignite coal was available and improvised grates of old horseshoes, stones, etc., enabled us to use the same. The wood question became serious as we used up all the small stuff and had now to take large logs—sections of cottonwood trees—one to three feet in diameter and four to ten feet long. Chopping these up and splitting them was too much for our axes. We bought two-man cross-cut saws and our blacksmiths made splitting wedges. With our limited bath facilities some of the men became lousy. A general bath day was ordered. A tent in each troop was rigged up as a bath house, hot water in huge quantities was provided by special details and the lice were routed, *pronto!* We soon began to get uneasy about getting back to Fort Des Moines. Ice was floating down the Missouri and a freeze-up was due at any time. Then, the ferry would have to stop running, and it might be many weeks before the ice would be strong enough to permit our crossing with wagons and animals. Although we had not yet received orders to move, Colonel West finally decided to cross to the left bank on his own responsibility. It was lucky that he did so for the day after we were all across, the ferry was hauled out for the winter. Orders soon came to return to our station and we reached Des Moines about one month after our departure.

Other Difficulties

A few more difficulties of a winter campaign come to mind. On the Tongue River, Montana, 1902-trip, I carried a Luger pistol issued for test. In the extreme cold the oil congealed to such density that the slide would not operate. How about our automatics and the Garand?

In the open it was almost impossible to get a welding heat in our field forges and we had to dispense with toe calks. Luckily we had very little snow. The issue horseshoe "balls up" terribly in even light snow. A 45° bevel on the inner edge will obviate this, so why not have shoes purchased already beveled? The "Neverslip

Snowshoe," a commercial horseshoe, properly beveled and already shaped, has been used in the north for many years. I always used them on my own horse at Keogh and at Fort Ethan Allen, Vermont, in winter. They are easily fitted, do not "ball up" and *hold,* even on glare ice. I have jumped logs with them from ice to ice. They should be issued for winter use.

When temperatures are ten degrees or more below zero, sentinels should be relieved hourly. Toes freeze very quickly at those low temperatures.

Starting on a winter campaign the cook shack should have at least four well sharpened axes and spare helves. These axes should be guarded and cared for like jewels. The squadron should have a grindstone. After the Ute expedition my trumpeters carried sharp, hooded axes in their gun boots in lieu of rifles, and in addition to the mess axes. I found them useful more than once.

Water cannot be carried in the canteens with the thermometer below zero. On several of those winter trips the men who tried it found the canteens froze solid and in most cases the canteen (old style) burst. How the aluminum canteens will stand freezing I don't know but I think some of them also will burst. Troops stationed in Alaska in recent years should be able to tell us something about this. Newfoundland troops also should be able to give us some data.

On my Tongue River Agency trip I did not consult the thermometer, my nose knew. On the Ute expedition we had a thermometer hanging on the mess tent flap after we put up the mess tent and I recall one reading of minus 32°.

Curb bits should be left at home and bridles taken into the tents nightly. After a couple of days you won't have any pullers. The old fashioned watering bridle is all you need; and with a snaffle bit only horses can do considerable grazing at halts and water much quicker on the march.

On neither of these trips (1902 and 1907) were we bothered by snow. However, I have had considerable marching in snow (horse-exercise) at Fort Ethan Allen. Horses can handle themselves very well in soft snow up to three feet in depth. Heavily crusted snow that will almost hold them up will make it very difficult for them, if over six inches deep.

I don't know if the modern trooper uses "eatin' tobacco" or not but at Thunder Butte our men ran out of it and fussed about it. We had no commissary or post exchange, and money was awfully scarce. I bought a caddy of "Star Plug" from the troop fund at Mrs. A. Bear's store and doled it out personally, not more than half a square per diem per man. I cut it up on an axe with a hammer. No tailor made cigarettes were available and smoking tobacco had to be bought and issued little by little, by me.

I broke the stem of my pipe and made a new one from a piece of ash bough, burning out the pith with a hot wire. Half of a "fork" made a bent stem. I smoked "Wild Rose of Virginia" plug smoking tobacco which I whittled up. And believe me it was wild; at least Mrs. Romeyn said it was too wild for indoors when I started to smoke it in the house on my return to Des Moines.

As in 1902, the health of the command on the 1907 trip was excellent. Outside of Tilford's appendicitis I do not recall a single serious illness or injury.

* * *

Of the officers of the Second Cavalry who made that trip I believe Colonel W. W. Gordon★ is the only one left on the active list. He stayed there the rest of the winter and should remember something about winter service. Some are dead but there are quite a few left on the retired list. If asked, they could probably give considerable information about winter service.

The officers of the Second Squadron Second Cavalry on this trip were: Major F. W. Sibley, Captains J. P. Wade, C. A. Romeyn, Samuel T. Purviance, Dean Tilford. Lieutenants John W. Moore, Walter F. Martin, Charles G. Harvey, Joseph F. Taulbee, Charles McH. Eby. Doctor ——— Johnson, Contract Surgeon, and Doctor Burt English, Veterinarian.

★Colonel Gordon now commands the Third Cavalry at Fort Myer, Virginia.

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"The troops of every army have their weak moments, for these are part of human nature itself. The general must allow for them as for a given factor, the dimensions of which it is impossible to ascertain."—HINDENBURG.

General Hawkins' Notes

Colonel T. R. Phillips' Article

ANOTHER of the excellent articles by Lieutenant Colonel Thomas R. Phillips has appeared recently in The INFANTRY JOURNAL. It has received much notice, especially in civilian circles, on account of its severe criticism of the army.

I say that this article is excellent because of the characteristically clear expression of views and the exposition of the principles of war as recently developed in Europe. The article is well worth study from a technical point of view. I find myself in strong agreement with most of Colonel Phillips' ideas, but not all.

Discussion is what our military journals are for; so no one can take exception to some disagreement and argument. Colonel Phillips has made a number of criticisms of the army, some of which I think are unjustified. To understand which of these criticisms I refer to in these Notes, as well as to profit by other interesting things in Colonel Phillips' article, I recommend that the reader study his article before reading my Notes.

I think that the fault in the army was not in failing to have enough trucks to transport motorized infantry, nor in failing to mechanize a sufficiently large force. The army could not get Congress to give it enough trucks or enough tanks. As after every war in which we have been engaged, Congress, after the World War I, grew economical and parsimonious in its attitude toward national defense. It was told that European nations, especially Germany, were developing mechanized and motorized forces and air force. It was willing to increase our air force and to supply a few tanks, but in order to establish these new branches of the army it wanted to do so at the expense of the older branches. It would not increase the size of the army but wanted to pay Peter by robbing Paul. Germany did not do that.

This country was apathetic, talked of disarmament, listened to the growing number of pacifists and those who have since developed as fifth columnists. Attempts were made to frighten young men into believing that war was so horrible that peace at any price was better, and induced societies of young people to announce that they would refuse to join the army or navy in peace or war, unless the country was invaded. It never seemed to occur to these people that preparation was necessary and that after the country was invaded or even threatened, it would be too late.

I also disagree with Colonel Phillips that the army was at fault in relying too much on the old French 75's for our field artillery. I know that attempts were made to substitute new howitzers, the models of which were constructed by our Ordnance Department. But Congress, thinking of our large stores of the older guns, would not give the money.

I also disagree that the army failed to see the coming mechanization and aviation. These things were seen, but the army did not want to *replace* the old branches of the service by these new branches. Instead of replacing the older branches, the army wanted to add the new branches. That is what Germany did.

I don't think traditionalism had anything to do with it. I never saw an army officer who did not want to advance and progress toward new things if they were presented to him in a practical and convincing manner. In fact, there has been an inclination to jump to conclusions without thorough investigation.

Although the army was hampered in its training by skeletonized units, by lack of needed equipment, by the fateful scheme of detaching too many officers from troops, by the lack of enough troops to give sufficient training to the officers, by an unresponsive Congress and an apathetic people, I do not excuse it for certain failures in thinking, in teaching, and in practice.

To my mind the trouble has been in the failure of the War Department to insist and keep insisting upon the necessity of procuring large unrestricted areas for maneuvers and the necessary funds for assembling large forces in these areas and holding them there for long periods of training instead of the usual eight or ten days.

Those maneuvers should have been used for experimentation in new ideas, in judging the training of the troops and the capacity of officers under consideration for promotion, especially to the grade of general officer in the line. Watching or commanding troops in the field is the greatest inspiration to imagination and constructive thought that I know of.

The War Department, with the idea of decentralization, left training matters too much to Corps Area commanders who were so busy in administrative matters that they had little time for study and thought in tactical matters, and frequently no capacity for it. The service schools, particularly the Command and General Staff School and the War College, were not supervised enough by the War Department. The War Department itself was so engrossed in administrative affairs that it had no time for such careful supervision.

The Command and General Staff School, in which the instructors were merely former graduates, delighted

in teaching the use of formal and ponderous field orders in accordance with the French method derived from the long trench warfare in World War I. Initiative was discussed, but proper methods were not used to encourage and induce it. Open or movement warfare was talked about, but it was not understood that only by the initiative of lower commanders could it be carried out.

As mechanism grew in Europe, there was no consideration of the means of defense against tanks except in the use of an inadequate number of antitank guns furnished sparingly to each infantry and cavalry regiment. The enormous power of great mechanized forces moving against inadequate opposition was not appreciated. We were not alone in that. The armies of Poland, Belgium, France and England failed in the same way. The only idea in any of those countries was to oppose hostile mechanization by mechanization of their own; but unless you have a larger mechanized force than the enemy, this is a wrong use of your mechanized forces. Numerous and effective antitank guns, not only in the regiments but also organized into independent battalions in the division and corps, were necessary to stop the great German drives.

The German army was so strong that it would have succeeded without its mechanization against the weak opposition it met, but not so quickly. Mechanization in an army on the defensive should be used for counterattack, not thrown to certain destruction by headlong charges against the hostile superior force of mechanized troops. The Italians have made the same mistake in North Africa. This idea, however, is only one of the many that have been overlooked. Our infantry has failed to appreciate the importance of marching, either to study it as an art or to condition the men and officers. The marching power of the German infantry in this war has been reported as one of the most impressive things in their army. The same may be said of the use of cover. We talk about it, but do not practice it. The use of air force to coöperate with ground troops was talked about many years ago; but the air corps did not encourage it, and the War Department gave it no consideration.

Of course, these things are matters of opinion. Many officers in our army had these opinions, but there was no way to insure their consideration in the War Department. I agree with Colonel Phillips that there should be some organization in the War Department to receive and consider such ideas, and it should be supervised and directed by the Chief of Staff through the recently formed body known as G. H. Q. The G-3 section of the General Staff is not sufficient. It is not even accessible to the thoughts and ideas of officers out in the army. The only way an officer can air his ideas is by publication in the various service journals which are private affairs and not even read by the majority of higher officers.

There are plenty of able men in the army. The difficulty is to get them to the top. Ability to command troops in maneuvers, not only the solution of problems in schools, and contributions in thought and constructive suggestion ought to carry much weight in the selection of officers for promotion to the higher grades.

Of course, the evolution in tactics brought about in this war, and described so well by Colonel Phillips, has been apparent to everybody. In a very well written, very readable article which is both instructive and thought provoking, Colonel Phillips has clarified some of the new principles which must now be observed.

The article is weakened by rather unfair statements such as that one asserting that the shortage of tanks is exclusively our own fault. As I have already pointed out, Congress would not give the money. Certainly, we could not have supplied the army with the number needed now for our new army—and those we might have had a few years ago would have been obsolete now. They did however serve the purpose for which they were intended; i.e., for experimentation and the creation of a cadre which has made possible the development of the present armored force.

The statement that "The problem was further complicated by fear on the part of horse lovers that more tanks meant fewer horses" is unworthy of a writer of so much ability. I am a horse lover myself and, although recognizing the power of mechanized forces, do not hesitate to assert that cavalry is still very useful in every theater of war not devoid of water. This may be considered as traditionalism and ultraconservatism. It is not conservative at all. My ideas about our new cavalry I consider as advanced. Mechanization and aviation have their limitations, as Colonel Phillips admits. I believe that we should not throw away the new cavalry simply because we have added armored troops and aviation. We need everything.

I have read almost everything that Colonel Phillips has written, to my profit, but I cannot understand criticism of the army for not having enough trucks, tanks and new howitzers. In time of peace we never have enough of anything. I do agree that the Tables of Organization of 1939 for the hypothetical infantry division were stupid.

There is no use in complaining about the whole scheme of defense in the United States. This country is not going to have a big army in time of peace except in an emergency such as the present one. That has been the policy in all of its past history. Without a big army it will be caught wanting supplies and weapons in every emergency, and the regular army is going to be blamed for not having them—just as it has always been.

The age-old struggle between guns and armor goes on. Someday, perhaps soon, someone will invent a tank-killer, very mobile, that will lay out tanks like tin cans on a dump—and then mechanized forces will take a back seat, and those who did not foresee it will be called traditionalists, or old fogies, or something.

Mounted Attack Clarified*

IT seems that our cavalry is now being told by various persons of both high and low degree that the Mounted Attack is finished—it is senseless, ridiculous, suicidal—large units can never make a mounted attack —small units can do it only very exceptionally, which means not at all.

If all this be true, there is no sense whatever in teaching the technique of the mounted attack or in requiring the troops to practice it in training so as to be skillful in its performance.

Even if such training is required in order to provide for those very exceptional cases, we could not expect any enthusiasm, interest, or faith in it on the part of the troops after it has been discredited so completely. If the opportunity or considered necessity for it ever came, no one would know how or when to do it. And the probability is that if it were ordered, the officers might attempt to lead it but the troops would refuse to follow or do it so half-heartedly that it would fizzle out and result in a complete failure.

Under such conditions the cavalry will become a slow-witted, over-cautious, poor riding, unenthusiastic, spiritless outfit which is so timid in its riding that its mobility is gone, and so fearful of being caught under fire while mounted that its enterprise is gone also. In order to move rapidly across country, a cavalry unit must be trained in bold and skillful riding. But also, its mounted security patrols and covering detachments must be trained and willing to make mounted attacks against suddenly encountered enemy patrols and advanced elements which may be screening an enemy ambush or surprise attack. If these small elements dismount at the first hostile shot, they will be lost or accomplish nothing of the missions with which they are entrusted.

It is not true, as some assert, that the cavalry has been trained to make reckless mounted attacks frontally against superior forces of entrenched infantry and machine guns in position and all ready to receive the attack. Unless the enemy is inferior in numbers, or morale, and unless he is surprised or taken in rear or flank, mounted attacks are dangerous, and the cavalry has been warned of this repeatedly by the Cavalry School and by all competent leaders in the cavalry service.

The cavalry has been taught that certain requisites for success are necessary to warrant a decision for mounted attack. The most important of these for large units, by which is meant the squadron up to the brigade, is adequate fire support put into action first of all. The mounted riflemen must be properly deployed, not in one line, but in several successive lines or waves of horsemen deployed with intervals of about five yards. Some form of superiority either in numbers or in morale must be present. Surprise in some of its many forms is always sought. The character of the ground must be considered. If surprise is impossible and the ground affords *good cover* for advancing dismounted troops, a dismounted attack may be indicated provided the time element permits it and provided that superiority in numbers at the point of attack permits it.

Some foolish and ill advised mounted attacks have been made in maneuvers. They have been criticized severely. Often too severely. It must be remembered that in maneuvers and in actual war the commander of a cavalry force has not the information of the enemy that is usually given him in map problems and in stupid command post exercises where he is receiving a constant flow of messages and reports. In the real thing, a commander gets little or nothing of this sort, and what he does get is contradictory and confusing. He should not be held up to scorn if he guesses wrong, makes a mistake and launches a mounted attack that is unsuccessful. Severe criticism is more applicable when the mounted attack is launched unskillfully, without adequate supporting fire, crowding men into bottle necks of the terrain, or improper deployment, because these mistakes can always be avoided even though the information about the enemy is obscure. Nor should the critic condemn a mounted attack without stating what the alternative was. That is destructive criticism. Obviously, the officer so criticized wonders what the alternative was. Was it a dismounted attack? Were the conditions present that are necessary for a dismounted attack? Often, they are not, and it happens very often that a dismounted attack would be far worse than a mounted one because when repulsed the dismounted troops are unable to get away. Mounted attacks were made in the World War that succeeded with less loss than would obviously have been sustained by a dismounted attack.

No! You cannot rule out dogmatically the mounted attack for the hundreds of situations that present themselves in war.

The conditions in the present war are not so different from those in the World War that they should change the doctrine as far as cavalry is concerned. The chief developments that have been made are in aviation and mechanization. It has been written many times that mechanization owes its principal success to the support it has received from aviation. Would it not be possible also that cavalry mounted attacks in forces as large as a brigade could be supported by aviation in such a manner that they would be more feasible than ever before? The close support of ground troops by aviation was not an original idea with the Germans. But they were original in carrying it out. We used to talk about it twenty years ago in the Cavalry School. It was recommended in writing, but our air corps was not much interested in the idea at that time.

Many persons tried to rule out the mounted attack long before the World War. The result in our cavalry

*General Hawkins' Notes, continued.

was to destroy its usefulness by half. The World War came on and the cavalry of other armies, though antiquated in armament and training, gave literally hundreds of examples of successful mounted attack against dismounted enemy troops. One has only to read carefully the book *Cavalry Combat* to find himself astonished at the number of these cases.

It is obviously true that most of the future cavalry actions will be of the dismounted order, except, perhaps for patrols and very small forces. But that does not rule out the possibility nor even the probability that larger forces will sometimes be engaged mounted. Combined dismounted and mounted action may become very frequent. Especially on this continent will cavalry be useful, and the tactics of combined action will bring quicker and more satisfying results than any other form of attack. No doubt, such very important cavalry missions as delaying actions will be accomplished mostly by fire power. As antitank guns are developed more and more, a cavalry force equipped with squadrons of such guns will be the most effective force for delaying action against mechanization. Especially will this be true if cavalry is used in the "Trinity of Aviation, Mechanization and Cavalry" as described in the brilliant article by General Richardson in the January-February, 1941, number of The CAVALRY JOURNAL. Since the present trend seems to be to combine mechanization with motorized infantry and artillery in divisions like the German Panzer divisions, it would not be safe to predict that, when this "Trinity" is operating in delaying action against such divisions, the cavalry would have no opportunity for mounted action. Mounted action against tanks would be absurd, but against motorized troops caught in flank by surprise it might be very effective.

The spirit of mounted action and the training that it requires are absolutely essential in a cavalry force even though it may be employed habitually dismounted.

For either mounted or dismounted attack, the front of each deployed squadron must be covered by fire of supporting machine guns and sometimes by other supporting weapons. Therefore, there must be a group of these supporting weapons posted on one or the other flank of each squadron for this purpose. If we try to cover the front of more than one squadron by a single group of machine guns, the front will be so long that the ranges for the machine guns will be too long for effective fire on the whole front of the enemy line which confronts these squadrons. Each squadron must have its own fire support. Intervals of several hundred yards must be contrived between squadrons for this purpose unless there are no more than two squadrons abreast in the movement echelon, when the supporting fire units might be placed on both outer flanks.

When a cavalry division has developed its forces into various columns while approaching an enemy, its artillery and machine guns should be placed in their relative positions all ready to open fire if the enemy is suddenly encountered. The several columns of rifle units will probably be squadron columns prepared to deploy instantly into formations for the kind of action contemplated. If attack is contemplated, it is not known yet whether it will be all dismounted or whether some columns may find it feasible to attack mounted. As the covering forces gain contact with the enemy it will probably become known whether the hostile forces are mechanized, motorized or marching infantry. We must not expect to find the enemy in a fixed position making it convenient for us to maneuver our forces at leisure so as to attack by some deliberate or preconceived plan. In open warfare it is probable that he will be moving. It may be a strong mechanized force or a combination of some few mechanized troops with marching infantry or motorized infantry.

Whatever it is, the division commander must now decide how he is going to attack. If the enemy force is a strong mechanized column our cavalry division must maneuver to avoid a head-on clash. Falling back and swinging around to the flank to bring antitank guns into action on ground that is not favorable to tank movement, then working around to the rear to attack the hostile motorized infantry supporting its mechanization, giving way to retire to ground more unfavorable to the hostile mechanization, or whatever the movement may be, it must of course be mounted even if under fire. If the enemy, whatever be his composition, is supported by hostile aviation not neutralized by our own aviation, our division must resort to dispersion while maneuvering to attack the enemy. This requires great initiative on the part of the various column commanders, great flexibility and mobility over rough ground. The enemy will be active also. There may be combats between some of his flank or covering detachments and some of our columns.

One or more of our column commanders may have an opportunity to attack mounted, or such an attack may be imperative to avoid being stopped and pinned to the ground by one of the enemy detachments. Some columns may be forced to dismount in order to advance toward the point on the terrain that they wish to reach in the general maneuver of the whole division. Cooperation between columns may take the form of a combined mounted and dismounted attack. This is most probable. How could there be any coöperation in rapid maneuvering if the leaders are told that they cannot make a mounted attack but must dismount if opposed even by a very small force of the enemy trying to interfere with the general maneuver of the division?

These things obtain whether it is only a delaying action that is contemplated or a decisive attack required by the mission of the division. It may be a pursuit and the enemy may have a shattered morale. Such a loss of morale is very frequent during and after a severe battle. A well conducted mounted attack or combined attack under such circumstances is almost certain to bring wonderful results.

We must get over the idea of always acting with stereotyped movements. The division must be able to move suddenly and rapidly to the right, left, forward or backward, under the general direction of the division commander and by means of the initiative and audacity of the column commanders when there is not time enough for even brigade commanders to issue orders to all columns in his command. Both division and brigade commanders must have a sufficient number of aides or officer riders to carry messages to the leaders of the several columns and to remain with these columns long enough to make sure that the message is understood and is being complied with. Such brief messages as, "Division moves instantly by the right flank to attack enemy left rear" should be frequent. The commanders of the several columns must know what to do to obey such orders and how to do it.

During a maneuver in the face of the enemy, every column commander must know his relative position in the division and be willing to fight, either mounted or dismounted, to maintain it without waiting for messages to go to the brigade or division commander and for the answering orders to return.

No negative training—you cannot do this or you cannot do that—will produce the flexibility, the initiative and the audacity necessary for the success of a cavalry command.

Finally, it cannot be repeated too often or emphasized too much that the great necessity for mounted attack, and therefore the training for it, lies in the fact that a cavalry force moving swiftly to perform its mission is often interfered with or impeded by smaller forces of the enemy sent out to hold it up or delay it in its arrival at its prescribed destination. The intention may be to fight dismounted, or by fire action without forward movement, after arrival at the proper destination. But, in order to get there in time, the cavalry must not permit itself to be halted or made to make wide detours which would cause effective delay. If it is forced to dismount it loses valuable time and the enemy's object is attained. But if it attacks boldly, skillfully and instantly, against such inferior forces, by mounted action, it probably will surprise the enemy, disconcert him, and make it impossible for him to fight delaying actions in successive positions. Detouring or dismounting will often cause fatal delay. Prompt mounted action will save time when time is of the essence.

Thus, cavalry may fight its main battles dismounted but it is the intervening or preliminary fighting that will often require mounted action.

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"SUN TZU said: The art of war is of vital importance to the State.

It is a matter of life and death, a road either to safety or to ruin. Hence it is a subject of inquiry which can on no account be neglected.

The art of war, is governed by five constant factors, to be taken into account into one's deliberations, when seeking to determine the conditions obtaining in the field.

These are: (1) The Moral Law; (2) Heaven; (3) Earth; (4) The Commander; (5) Method and Discipline.

The Moral Law causes the people to be in complete accord with their ruler, so that they will follow him regardless of their lives, undismayed by any danger.

Heaven signifies night and day, cold and heat, times and seasons.

Earth comprises distances, great and small; danger and security; open ground and narrow passes; the chances of life and death.

The Commander stands for the virtues of wisdom, sincerity, benevolence, courage and strictness.

By *Method and Discipline* are to be understood the marshalling of the army in its proper subdivisions, the gradations of rank among the officers, the maintenance of roads by which supplies may reach the army, and the control of military expenditure.

These five heads should be familiar to every general; he who knows them will be victorious; he who knows them not will fail."

—The Writings of Sun Tzu on the Art of War (505-496 B.C.).

LEADER OR ADVISER?

*By Major General William J. Snow, U.S.A., Retired**

WHEN we have done a good piece of work, it is always a satisfaction to have it recognized as such by some outside and wholly disconnected agency, and particularly when that agency exists for the sole purpose of giving an independent and impartial appraisal. Such an agency is the Inspector General's Department of the Army. The following extract, therefore, from the Annual Report of the Inspector General of the Army covering the Field Artillery in 1918 is interesting:

> "In that period covering the appointment of a Chief of Field Artillery, and also following the graduation on a larger scale of officers from the School of Fire, instruction of officers became more uniform and the efficiency of instruction, in general, more marked. Officers' Schools, in most cases, were very satisfactorily conducted, and a more or less definite policy in training followed, generally. In that period since the organization of new divisions in August, 1918, methods of instruction were by far the most efficient. In the case of this instruction, field officers were selected for their efficiency, a very definite policy as to what was to be accomplished, and how, was followed. Where sufficient matériel and men were available, organizations advanced rapidly in training. At the time of the signing of the Armistice, field artillery instruction was intensive and non-essentials eliminated.
>
> "The facts most important in making for efficiency in training were:
>
> 1. Appointment of a Chief of Field Artillery.
> 2. Organization of The Central Officers' Training School.
> 3. Operation of the School of Fire.
> 4. Establishment of Firing Centers where matériel and equipment were concentrated, and where expert instructors in the various specialties were sent.
> 5. The establishment of Replacement Depots where replacements for overseas were instructed, and which also furnished a nucleus of good, partially trained men for newly organized regiments, also contributed to the general efficiency of instruction."

All of the above five "facts most important in making for efficiency in training" are really summed up in the first one—"the appointment of a Chief of Field Artillery"—for all the others were originated by him, except the School of fire and, by chance, it also was his creation a short time prior to his appointment as Chief of Field Artillery. Even the School of Fire failed to make progress until after the appointment of a Chief of Field Artillery, in that the first enlarged class as planned by me, when Commandant, did not enter the School until I became Chief and could push this vital matter.

In the interval between my leaving Fort Sill in October, 1917, and my appointment as Chief of Field Artillery in February, 1918, my successor as Commandant of the School wrote me a personal letter saying that the War Department had apparently forgotten the enlarged School project and that it was on the verge of collapse. It is not at all improbable, therefore, that but for the creation of the office of Chief of Field Artillery the School would have died, for, when appointed Chief, I found that there were but few students and only a small and wholly inadequate amount of equipment at the School and but very little interest in the matter in the War Department.

In my stressing the importance of having a Chief of Field Artillery, there is, of course, the implication that such Chief has the necessary power to act. Manifestly the mere existence of a Chief without accompanying power would accomplish nothing. Prior to my appointment as Chief, the War Department General Staff had run the field artillery. They had made a miserable failure of the job and had not only wasted ten months of valuable time (and in war, time is of the essence) but, even worse, the General Staff had allowed an absolutely chaotic condition to arise in the arm ("Chaotic" is a strong word and it is used here because it is accurately descriptive). Had I, after my appointment as Chief, been a mere agency or mouthpiece of the General Staff to carry out their decisions, no improvement whatever would have resulted from my appointment; I would have been merely another cog in the machine. Fortunately General March recognized this fact and not once did he tell me during the war (or after) that I was exceeding my authority. He was a man who wanted results and wanted them quickly. And he knew that only by delegating power to his assistants could he get results; and the same situation must exist in the next war.

I am laying stress on this matter for, in the eight or nine years following the war, and while I was still Chief of Field Artillery, there was a gradual encroachment by the War Department General Staff upon the powers of the Chief of Field Artillery—a strong tendency to reduce him to a mere agency of the General Staff. If such a tendency were to continue in existence, it would mean delay, confusion, and even chaos again in the next war until it was rediscovered that the Chief MUST again be clothed with real power.

It stands to reason that a Chief rather than an impersonal staff is the official most interested in, and concerned with, the organization, equipment, training, morale, and efficiency of his arm.

I am not by any means hostile to a General Staff. I thoroughly recognize and understand its importance and value, but because of my service as Chief for a period covering nearly ten years, and involving both war and peace, I had the opportunity to form definite and positive views as to the relationship that should

From The Field Artillery Journal, January, 1941.

exist between a Chief of Arm and the General Staff in order that the team as a whole might function with the highest possible degree of efficiency. I am presuming therefore to indicate and emphasize this relationship in the paragraphs that follow.

The office of the Chief of Field Artillery was created during the World War to bring order out of chaos; it proved so effective and valuable that, in the reorganization of the Army following the War, similar Chiefs were created for the other Combat Arms, and all Chiefs made statutory.

In the hearings before Congress preceding the enactment of this law, General Pershing stated that the object was to make the Chief a LEADER of his arm; he used the very word "Leader." A Chief is *not* a leader of his arm if the General Staff makes decisions concerning that arm without consulting the Chief, and then directs him to carry out such decisions; or if the General Staff asks his advice on a purely technical question of that arm and then does not accept his advice. In such cases, the Chief, instead of a Leader, is a figurehead. Yet this happened during my service as Chief subsequent to the War. The result is, of course, that if decisions of the General Staff are harmful enough to his arm, the Chief of Arm concerned has to appeal to the Chief of Staff for a reversal of the General Staff decision, which incidentally was likely made by a subordinate far junior to the Chief, that is, the appointed expert, on the matter. Much time is thus wasted, feeling is engendered, and, if the Chief of Arm appears often enough before the Chief of Staff in the capacity of complainant, the Chief of Staff naturally gets into the mental attitude of regarding the Chief of Arm merely as an objector, and more or less of a nuisance, and a "Nuisance" is 180 degrees from being a Leader. Basically, this relationship between the Chiefs of Arms and the General Staff is entirely in the hands of the Chief of Staff. The relationship established by General March could well be taken as a model. It was he who realized and understood the value of a Chief of Arm as a technical adviser, and he decentralized to me as Chief of Field Artillery the responsibility and the authority that I should properly carry as the Leader of my arm.

A Chief of Staff who follows the line of least resistance will likely regard the Chiefs of Arms as advisers to the five War Department "G's" and not to him. There is a vast difference between adviser to the Chief of Staff and to the General Staff; in the latter case it is adviser to an adviser; and also the General Staff may (and it has happened in my experience more than once following the War) substitute its own views for those of the Chief without the Chief of Staff knowing anything about this substitution. If the reader will refer* to the memorandum fixing the status of the Chief of Field Artillery when he was originally appointed, he will see that it includes the following paragraph:

> "All questions pertaining to field artillery, arising in the War Department, will be referred to the Chief of Field Artillery, and his decision, given in accordance with the policy of the Chief of Staff, and subject to review by the Chief of Staff, will be final."

In looking back now after twenty years, I think that in drawing up that memorandum fixing the status of the newly appointed Chief of Field Artillery, I did a far better job than I realized at the time; and not the least important part of it was the paragraph quoted above. The proof is the fact that it stood the supreme test of war. In a short time no one on the War Department General Staff even considered writing anything about the field artillery without previously consulting the Chief of that arm. The result was a smoothly working organization of highest efficiency, and a confidence on the part of the Chief of Staff that when he received a paper from any War Department source, the part relating to field artillery was authoritative and represented my action as Chief.

There is one other phase of this question that I desire to touch upon briefly, and then I have finished. I refer to the failure, so likely to prevail in time of peace, of making a distinction between Chiefs of the Combat Arms, and those of the Services. Both the Chief of Staff and the General Staff are inclined to regard all Chiefs as exactly the same. This is wrong. It overlooks the fact that the combat arms are really the Army—they do the fighting. The services exist solely for the purpose of assisting the combat arms to reach the battlefield properly supplied and equipped. It is the combat arms that win or lose battles, and in this statement I am not ignoring the importance of command and staff work, or the importance of the supply departments. I am merely calling attention to the fact that these supply agencies exist solely to help the combat arms win these battles. Such being the case, a Chief of Staff should recognize this fact and give to his Chiefs of Combat Arms the authoritative status necessary in time of war.

I state unequivocally, and because my convictions are strong, and are based on that best of all teachers, experience, over a period both of peace and war, that unless this coördination between Chief of Staff, Chiefs of Combat Arms, and General Staff, is effected, and harmoniously functions in time of peace, confusion and delay will again result in the event of war, and will continue until it is reëstablished.

I would therefore earnestly recommend to those who at any time chance to be in authority, that they read the memorandum of 1918 fixing my status; and having done so, I would recommend with equal earnestness that the memorandum, modified to include all Chiefs of Combat Arms, but not modified as to principles, be adopted and promulgated as a doctrine continuously to be followed by the War Department in developing and maintaining the highest possible degree of combat efficiency in our army.

*F. A. *Journal*, January-February, 1940, p. 10.

Editorial Comment

Cavalry Heritage

For over three thousand years of recorded cavalry history, through the ancient cycle of heavy armor and back—*and now again, in another cycle of heavy armor and armament*—cavalry has faced the snows of winter, plodded through desert sands, climbed rugged and wooded mountains, crossed arid plains and has swum rivers in the execution of cavalry missions. It has suffered and again it has thrived!

Horse cavalry *in the modern sense,* however, first appeared in the Southern forces during our Civil War. The great efficiency of Southern cavalry, able to make sustained rapid marches across country; expert in scouting, and equally prepared to fight mounted or to use their firearms dismounted in battle, soon was realized by the Northern leaders, who, by the end of the war, utilized masses of cavalry with decisive effect. In the succeeding years of continuous fighting with the Indians in the West and in guarding our southern frontier, the characteristics of mobility, *firepower* and shock, as well as the *adaptability to all types of fighting,* were further developed. By constantly keeping *heads up* and abreast of modern trends, our cavalry with its unequaled battlefield maneuverability of effective fire power over all manner of terrain, continues to loom on the military horizon as an all purpose element of the *Army Combat Team.*

Let us, thus, pause in reflection and speculation. Just what does Frederick Remington's famous etching of the *Old Timer,* on our cover, symbolize for cavalrymen today? The record of the United States Cavalry and American history of the pioneering of the West and the expansion and defense of our frontiers obviously are synonymous. But what of the cavalry trooper? Our *Old Timers* were resourceful, virile, courageous, loyal, rugged, substantial and dependable—typical American plainsmen. With characteristic faith in their ability to use weapons and mounts; with a canteen of water, a sack of dried corn and a strip of jerked beef or venison in their saddlebags, they scorned hardship. Often alone on missions far removed from supporting elements, they welcomed adventure and combat. They stood for law and order and relentlessly imposed their will in its accomplishment, to the glory of our mounted service and our country. Yes, our *Old Timers* gave us a cavalry heritage; and an inspiration.

* * *

Regulations Quoted

Army Regulations No. 345-105 — War Department, Washington, November 18, 1929.

MILITARY RECORDS

Historical Records and Histories of Organizations

7. *Regimental day.*—The commanding officer of each regiment, or other separate units similarly organized, will select a day in the calendar year which will be designated as regimental day, battalion day, company day, or similar appropriate name. This should be preferably a day noteworthy on account of some event in the history of the organization. It will be observed as a holiday by that regiment or organization for the purpose of commemorating the history and traditions of the organization and engaging in such suitable ceremonies as the organization commander may prescribe. Addresses on the history of the entire organization will be included. The selected day will be reported officially to The Adjutant General. As far as practicable, on that day all military duty for the organization concerned will be suspended. If it falls on Saturday, Sunday, or a holiday the day following or the day preceding will be designated as the official day.

The following are suggested as the basis of a program for observing that day:

a. General assembly of the organization.

b. Reading of citations and official commendatory orders or other commendations.

c. An address embodying a brief history of the organization and noting conspicuous events participated in by the organization.

d. An address by the commanding officer on the spirit of the organization and its future.

e. Addresses on the accomplishments of the men and officers of the organization.

f. Presentation of recruits to the colors.

g. Music and other forms of entertainment.

Following this, a brief program of celebration may be held by companies in their mess halls or assembly rooms.

Unit Anniversary

Unit	*Organized*	*Station*
1st Cavalry (Armored)	March 2, 1833	Fort Knox, Kentucky
2nd Cavalry	May 9, 1836	Fort Riley, Kansas
3rd Cavalry	May 19, 1846	Fort Myer, Virginia
4th Cavalry (H & M)	March 3, 1855	Fort Meade, South Dakota
5th Cavalry	March 3, 1855	Fort Bliss, Texas
6th Cavalry (H & M)	May 4, 1861	Fort Oglethorpe, Georgia
7th Cavalry	June 25, 1866	Fort Bliss, Texas
8th Cavalry	Nov. 23, 1866	Fort Bliss, Texas
9th Cavalry	July 28, 1866	Fort Riley, Kansas
10th Cavalry	July 28, 1866	Fort Riley, Kansas
11th Cavalry	May 5, 1901	Seeley, California Campo, California
12th Cavalry	June 29, 1901	Fort Bliss, Texas
13th Cavalry (Armored)	May 1, 1901	Fort Knox, Kentucky
14th Cavalry	March 5, 1901	Fort Riley, Kansas
15th Cavalry	Feb. 2, 1901	(Inactive)
16th Cavalry	June 3, 1916	(Inactive)
17th Cavalry	June 3, 1916	(Inactive)
26th Cavalry (PS)	Oct. 1, 1922	Fort Stotsenburg, P. I.
1st Cavalry Troop, Reconnaissance (Sep)	July 1, 1940	Fort Davis, Panama Canal Zone
1st Recconnaissanse Troop	Constituted July 20, 1940	Fort Devens, Mass.
2nd Reconnaissance Troop		Fort Sam Houston, Texas
3rd Reconnaissance Troop		Fort Lewis, Washington
4th Reconnaissance Troop		Fort Benning, Georgia
5th Reconnaissance Troop		Fort Custer, Michigan
6th Reconnaissance Troop		Fort Riley, Kansas
7th Reconnaissance Troop		Fort Ord, California
8th Reconnaissance Troop		Fort Jackson, S. C.
9th Reconnaissance Troop		Fort Bragg, N. C.

NOTE: Organization dates of our National Guard Regiments will appear in the next issue of The CAVALRY JOURNAL.

* * *

Remount Division of Quartermaster Corps Organized

In a move to simplify administration, the *Remount Branch* of the Supply Division, Office of the Quartermaster General, has been redesignated the *Remount Division*. Former sections of the Remount Branch will become branches in the new set-up. The Remount Division will be headed by Colonel E. N. Hardy. Colonel Hardy, a graduate of the United States Military Academy, was commissioned a second lieutenant in the Cavalry in 1911, and transferred to the Quartermaster Corps in 1937. He is a graduate of the Command and General Staff School and the Advanced Course, Cavalry School. Our salute to you, Colonel Hardy!

* * *

Rank and Address

Our circulation clerk has been working nights trying to keep abreast of the numerous changes in rank and address. Nearly all of his over 3,000 addressograph plates have been changed, not only once but several times, in recent months.

For a while we changed addresses upon receipt of War Department Orders. This method proved unsatisfactory as numerous officers desired having The CAVALRY JOURNAL mailed to their home addresses, which could be determined only at a later date.

If your CAVALRY JOURNAL envelope does not bear the proper name, rank and address, please send us a card giving the correct information so that desired changes can be made.

Army Wimmen

"'Round and 'round she goes and where she'll stop, nobody knows!"

Doubtless, all of us are familiar with Major Bowes' opening salutation in his weekly amateur radio program—it serves to remind us of our cavalry "wimmen folk" today. Several of our cavalry regiments recently have changed station, with all of those backstage heartaches of leaving civilian and army friends; and reëstablishing homes under new circumstances and usually amongst strangers. This is true irrespective of rank!

Those of us with years of service behind us probably can remember many incidents when army families generously have "leaned backwards" in an effort to be hospitable to "newcomers"—moving at best is never pleasant, particularly for our women.

Let us, therefore, continue our effort to ease over the rough spots. With all mutually trying to be considerate the *middle of the road* surely can be found.

* * *

Our Journal in Demand

In anticipation of the popularity of our January-February issue of The CAVALRY JOURNAL, we provided 260 extra copies—which were sold almost immediately. One unfilled order was for 100 copies for instructional purposes.

* * *

Due to the increase in organizational strength, and increased demand by enlisted men for our JOURNAL, several units have ordered additional subscriptions for their DAYROOMS.

* * *

Army Song Book Now Being Distributed

The War Department has announced that distribution is being made of the new *Army Song Book,* containing words and music of sixty-seven popular favorites. All components of the Army will receive copies of the book. A smaller edition, which will be distributed to each individual in the service, and which contains only the words of each song, will be published soon.

* * *

Author's Credit

Upon the request of Lieutenant Colonel E. A. Hyde, F.A., announcement is made that due to a misunderstanding, the name of Lieutenant Colonel Hyde appeared as author of the article, "Artillery, Cavalry Division," in our January-February, 1941, issue. The author of the article was, in fact, *Major Charles D. Palmer, F.A.*

Apologies and regrets are in order, Major Palmer, and congratulations and thanks for an excellent article!

Antitank Troop, 1st Cavalry Division, to be Activated

The War Department has announced that the Antitank Troop, 1st Cavalry Division, Fort Bliss, Texas, will be activated as soon as housing, equipment and personnel permit the action. Not more than 28 men from already active units of the division will form the cadre for the new unit, while the balance of the personnel will be made up of selectees who have completed their basic training at the Cavalry Replacement Center, Fort Riley, Kansas.

Shoulder Sleeve Insignia

Shoulder sleeve insignia has been authorized for wear *only* by troops of units definitely assigned to a Division, an Army Corps, or an Army. Other units will not be permitted to wear such insignia.

Shoulder Sleeve Insignia—Armored Force

The design of a distinctive sleeve insignia to be worn by personnel of the Armored Force is made up with the World War Tank Corps insignia *on which is superimposed the insignia of the 7th Cavalry Brigade Mechanized.* The color make-up of the triangle of the World War Tank Corps insignia—*yellow,* blue and red—indicates the Arms of the Service from which the majority of the combat troops are drawn. *The tracks of the 7th Cavalry Brigade insignia symbolize the mobility of the Armored Force and the basic vehicle, the tank, which is the backbone of the combat power; the gun symbolizes firepower; and the chain lightning symbolizes speed and shock.* The sleeve insignia is applicable to all elements of the Armored Force, including the GHQ Medium Tank Battalions. The divisions will be indicated by the appropriate Arabic numeral placed in the apex of the triangle. The Corps troops will be indicated by Roman numeral and the GHQ Battalions will be indicated by Arabic numerals. There will be an olive drab border around the patch.

Announcement

(By request U. S. Army Information Service, New York)

"Army Information Service, 90 Church Street, New York City, the Public Relations Office of the Second Corps Area is located in the news center of the Nation. This office is being constantly called upon by the Metropolitan Press and other news media in the city, for information relative to the shoulder patches of various units of the Army. A number of organizations have sent in patches for our file as the result of direct requests. Funds are not available for the purchase of these items so a call is being made for donations from units of a sample insignia and shoulder patch for file and reference in this office. Also, if a brief organizational history and interpretation of the heraldic design of the insignia could be submitted, it would make the files more complete."

Editor's Mail

Editor, The CAVALRY JOURNAL:

Congratulations to Colonel Chamberlin on his article, "Crossing Rivers," in the January-February issue.

May I make a few comments, considering the fact that in Cuba in 1899 and in Mindanao in 1912 I and my troop did a lot of "Horse Swimming."

Colonel Chamberlin's idea of a training pit is one of the best yet. Such a pit should be made and used at every cavalry post. The hardest work in teaching horse swimming is to get horses to go ahead to swimming depth.

"Herd Swimming" I found too difficult, the only time I tried it. That was at the Cagayan River in Mindanao. The stream was about two hundred yards wide. I had a large group of men on the far side and a few horses and mules that had been led across. But the herd would not go in. I laid the trouble to the fact that we tried to cross at a spot where we had been watering for about a week. We finally got the horses across by towing some with bancas, leading others out into swimming depth with good swimmers (men) mounted on good swimming horses getting them started across and turning them loose.

Individual swimming: hanging on to the tail is the best method if the horse will go ahead across. If a rider slips off to swim (or be towed) alongside, I favor the downstream side. I have personally had a horse go over backwards with me swimming alongside and have seen other horses do it. In each case the horse turned upstream as he went over. Not so good for the upstream trooper!

We had little success in trying to guide horses by splashing water in their faces—a "leading rein" (as distinguished from a "bearing rein") worked very well.

Tight cinches are extremely important. If a packed saddle slips back to the loins the horse will turn over. Horse and rider are both apt to be drowned.

Incidentally, considering swimming, mounting and dismounting, isn't it about time we abandoned "horse-show" necks and gave the soldier a horse's mane to use for various purposes?

I agree heartily with Colonel Chamberlin's closing paragraph. Many times I have told civilians that no motor vehicle has yet been made that can cross a stream three feet deep (there are claims of such), but horse cavalry can cross rivers two hundred yards wide and ten feet (and over) deep.

Signed: C. A. ROMEYN, Colonel, Cavalry, Retired.

Deadline

The deadline date for the May-June issue of The CAVALRY JOURNAL is May 10, 1941. Material received subsequent to that date cannot be considered for appearance in that issue.

Please address all communications for *The Cavalry Association* and The CAVALRY JOURNAL to 1624 H Street, N.W., Washington, D. C.

The Remount Service

By Colonel Edwin N. Hardy, 2.M.C.

MOUNTED units, the Remount Service, and the Veterinary Corps, must be on their guard not to accept entirely the method of supplying animals that was used in the stabilized situations of World War I. We must all recognize that military operations of today are of a very mobile character and that if we should depend upon the methods used in France in 1918, we would not be able to keep front line units supplied. This is true of other items as well as animals. As a consequence, Remount installations in the Theater of Operations must be such that they can be rapidly established and moved as circumstances require. We must not get the idea that elaborate permanent or semi-permanent remount depots can always be established. It will be necessary to improvise and to use any method which will permit the uninterrupted supply of suitable animals to mounted units operating in the face of the enemy. Due consideration will have to be given to attacks from the air, and this will require an avoidance of congestion. Existing stockyards, stock ranches, etc., must be utilized as far as practicable and whenever indicated. Very often the situation will not permit the time necessary to build remount depots such as were used in France.

In normal times our thought with reference to remount depots is confined principally to our three permanent remount depots. In times of emergency involving actual field operations against an enemy, there will be a necessity for additional remount depots of various types. The plans of the Remount Division provide for depots of various types, and general instructions as to their operation.

Remount Depots

In time of war, remount depots may be classified as follows:

a. Remount depots in the Zone of the Interior—These depots would include our three permanent depots and such additional depots as may be required in the Zone of the Interior to receive newly purchased animals and to put them in proper condition as to health, flesh and training for issue to troops not engaged in active field operations, or to other depots. In other words, remount depots in the Zone of the Interior would perform the functions now being performed by our three permanent depots, except that various schools would be conducted at the various depots to cover instruction for officers and enlisted men in various subjects such as horseshoeing, saddlery, animal administration, etc.

b. Field remount depots in the Theater of Operations—These depots may vary, according to distance from the front lines, from camps with nothing but picket lines for the maintenance of animals to well-established depots of permanent or semi-permanent construction, very much like depots in the Zone of the Interior. The purposes of field remount depots are to receive animals from depots in the Zone of the Interior or from veterinary hospitals and to issue them as may be required to front line units. Animals issued from field remount depots must be in excellent health and flesh, in hard condition, and sufficiently trained for immediate use of mounted units in active operations. Schools may be conducted as a part of a field remount depot, depending upon circumstances. The main difference between the functions of a field remount depot and a remount depot in the Zone of the Interior is that a field remount depot must issue horses sufficiently conditioned and trained for immediate use of mounted units in active operations. Field remount depots, therefore, require a greater number of men so that all horses not on sick report may be ridden or driven for conditioning and training every day.

When animals with front line units are no longer fit for use with those units on account of sickness, injury or wounds, they will be evacuated by Veterinary Corps units to veterinary hospitals and there maintained until they no longer require hospitalization. These animals are then issued to field remount depots to be put in fit condition for issue to front line units. It will therefore be seen that field remount depots should be conveniently located with reference to veterinary hospitals.

c. Remount depots at Ports of Embarkation—These depots may be in the Zone of the Interior or in the Theater of Operations. In either case they are for the purpose of receiving animals from depots or units for trans-shipment overseas. They resemble in their nature remount depots in the rear areas of the Theater of Operations and their capacity is regulated by the estimated rate and volume of shipments required to sustain operations overseas.

d. Remount depots at Ports of Debarkation—These depots may also be in the Zone of the Interior, or Theater of Operations, depending upon circumstances. They are for the purpose of receiving animals shipped by depots at Ports of Embarkation for temporary maintenance until they can be issued to some depot in the overseas area. Ordinarily a depot should be located within a short distance of the Port of Debarkation for the purpose of receiving animals from depots at Ports of Debarkation and to get them ready for issue to troops. Consequently, depots located immediately at Ports of Debarkation may ordinarily be designed so as to permit

the maintenance of animals only for a few hours, or at most, for a few days.

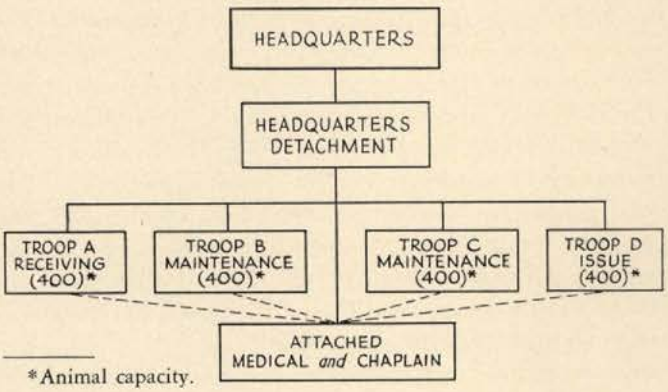
The Open-Air Plan

There is a general concurrence among horsemen of experience that the "open-air plan" of maintaining animals, if properly guarded by efficient animal administration, is better than a plan which provides for stalls for all animals. The open-air plan is more economical, the plant is easier and quicker to construct, simpler to operate, and prepares animals for active field operations in the open. Such animals are toughened to prevailing climatic conditions, and are also strengthened and conditioned by the large amount of voluntary exercise they obtain incident to their freedom in the open air, provided that such areas are sufficiently large. As a consequence, these animals can be counted upon to fare better under field conditions and to be more immediately available for issue to troops than animals maintained in stalls. The Remount Service for various reasons has been operating on the open-air plan in its present program, which involves only the use of our three permanent remount depots. To date, the open-air plan has proved very satisfactory; our administrative losses in animals since July 1, 1940, have been approximately two per cent, which is considered excellent in view of the fact that our losses from now on should be appreciably lower. However, consideration should be given to the fact that the open-air plan at our three permanent remount depots has provided a large area per animal. In depots of smaller area, conditions would not be as favorable and some sort of shelter would have to be provided in order to keep animals out of deep mud in inclement weather. A large number of animals congested in a small area during muddy weather brings about a very unfavorable situation prejudicial to the health and well-being of the animals. Furthermore, if such a condition is allowed to exist too long, it will result in serious infection of the horses' legs from the knee down. A great deal of trouble was experienced in this respect, during World War I, in France. There are so many considerations which have to be given to the administration of animals in large numbers, that it is impracticable in the scope of this article to even attempt to enumerate them. In any case, the solution is to have personnel in charge who are experienced in animal administration and who have sufficient knowledge to enable them to anticipate pitfalls and thereby take steps to avoid them.

Horses Must Be Conditioned

Since remount depots in the Theater of Operations must supply front line units with horses ready for active duty, such horses must be ridden and conditioned every day. Under such circumstances it would not be necessary to put as much dependence in animals obtaining voluntary exercise in large areas as is done on depots in the Zone of the Interior. Animals being worked every day can be maintained satisfactorily in a stable shed or in the open while not being used. In all cases, however, arrangements must be made so that animals can obtain a generous supply of good forage and reasonably clean and dry places for their maintenance while not being used. Undoubtedly, in many cases in the Theater of Operations, picket lines will be used to take care of the animals when they are not being ridden, the only protection from the elements being a horse cover. This is all they would get when in campaign and they may just as well learn how to stand it before being put on campaign duty.

Quartermaster Squadron, Remount
T/O 10-95



*Animal capacity.

Authorized Strength:

	Officers	*Men*
Hdqrs. & Hdqrs. Det.	3	14
4 Troops	16	660
Attached Medical	8	44
Attached Chaplain	1	..
Total	28	718

Personnel

In considering remount depots, attention is invited to the manner in which the various depots are operated with reference to personnel. Permanent depots and additional depots in the Zone of the Interior are required to be operated by Quartermaster Detachments with such additional civilian personnel as circumstances may require. The number of civilian personnel required is usually in proportion to the number of animals being processed at a depot. Remount Squadrons and Remount Troops (Tables of Organization 10-95 and 10-97, November 1, 1940) provide the personnel for operating field remount depots in the Theater of Operations. They may also be used to operate depots at Ports of Embarkation and Ports of Debarkation if circumstances justify. In view of the fact that animals issued from field remount depots should be sufficiently trained and conditioned so as to permit their immediate issue to troops engaged in field operations, it is necessary that all animals be worked every day and that field remount depots have more men in proportion to the number of animals

than other depots. For this reason a Remount Troop of 165 men is supposed to be capable of operating a depot of 400 horses, while a Remount Squadron composed of 4 Troops operates a depot of 1,600 horses. This arrangement is convenient as it provides for the establishment of depots of various capacities with appropriate personnel to operate them. Depots may be conveniently increased or decreased in increments of 400 animals while maintaining the integrity of the basic unit, which is the Remount Troop. Where two or more Troops are required to operate a depot, a field officer and necessary staff should be provided; where two or more Squadrons are required to operate a depot, an appropriate field officer and necessary staff should be provided.

Depot Operation

In general, all depots should be operated in three sections, as follows:

a. Receiving.
b. Maintenance.
c. Issue.

a. As far as the terrain will permit, each of these sections should be located as a unit. In a field remount depot of a capacity of 1,600 animals, the plan of operation would probably call for the receiving area being operated by one Troop which would care for about 25 per cent of the depot capacity, or 400 animals. In this area there should also be located the veterinary installations; not veterinary hospitals, however, as all animals requiring hospitalization are sent to separate veterinary hospitals. The receiving section would isolate newly received animals for at least three weeks, treat minor injuries and sickness, dip all animals as soon after receipt as practicable, and prepare all animals for issue to the maintenance section.

b. The maintenance section would probably be operated by two Troops and would have charge of approximately 50 per cent of the depot capacity, or 800 animals. The purpose of this section is to put animals in an excellent state of health and flesh, and to progressively harden them until fit for issue to front line troops. In order to accomplish this, there must be a proper balance between feeding, exercising and grooming.

c. The issue section would probably be operated by one Troop caring for about 25 per cent of the depot capacity, or 400 animals. The purpose of this section is to receive from the maintenance area about 25 per cent of the most fit animals for issue, and to continue their processing with the idea of preparing them for issue in the least practicable time. Animals issued from the issue section must be freshly shod, neatly trimmed, and fit in every way for immediate field duty. According to the number of animals that may be in any one section at any one time, adjustments may have to be made in the personnel assigned to each section. This can be taken care of by temporary assignments from one section to another, but it should always be accomplished by an observance of the integrity of units and not by temporary assignment of individuals. For example, if a squad is required in the maintenance section, a complete squad with its squad leader should be sent; if a platoon is required, a complete platoon with its platoon leader should be sent.

Plans are now being effected to organize and train a Remount Troop each at Fort Robinson, Nebraska, and Fort Reno, Oklahoma. Each Cavalry Division requires at least one Remount Squadron to take care of its animal supply problems when in active campaign. Each of these two Troops will be used, therefore, as a nucleus upon which to expand into a Squadron if and when required.

A group of young horses on a Western range. Every horse in this picture was sired by a Remount stallion.

The Armored Force

Editor's Note: The Cavalry Association has extended an invitation to The Armored Force to share its space in The Cavalry Journal. Approximately 163 Cavalry Officers (Regular Army) at present are on duty with The Armored Force in prominent command positions. In combat it is anticipated that our Cavalry and The Armored Force will work in close coöperation. In furtherance of this objective therefore it obviously is mutually advantageous that we respectively should keep informed as to each other's activities and development and that our present friendly and harmonious relationship be perpetuated.

CARDED

The Armored Force School

By Colonel Stephen G. Henry, Infantry, Armored Force

THE organization of the Armored Force in July, 1940, brought with it the immediate problem of training a vast number of technicians.

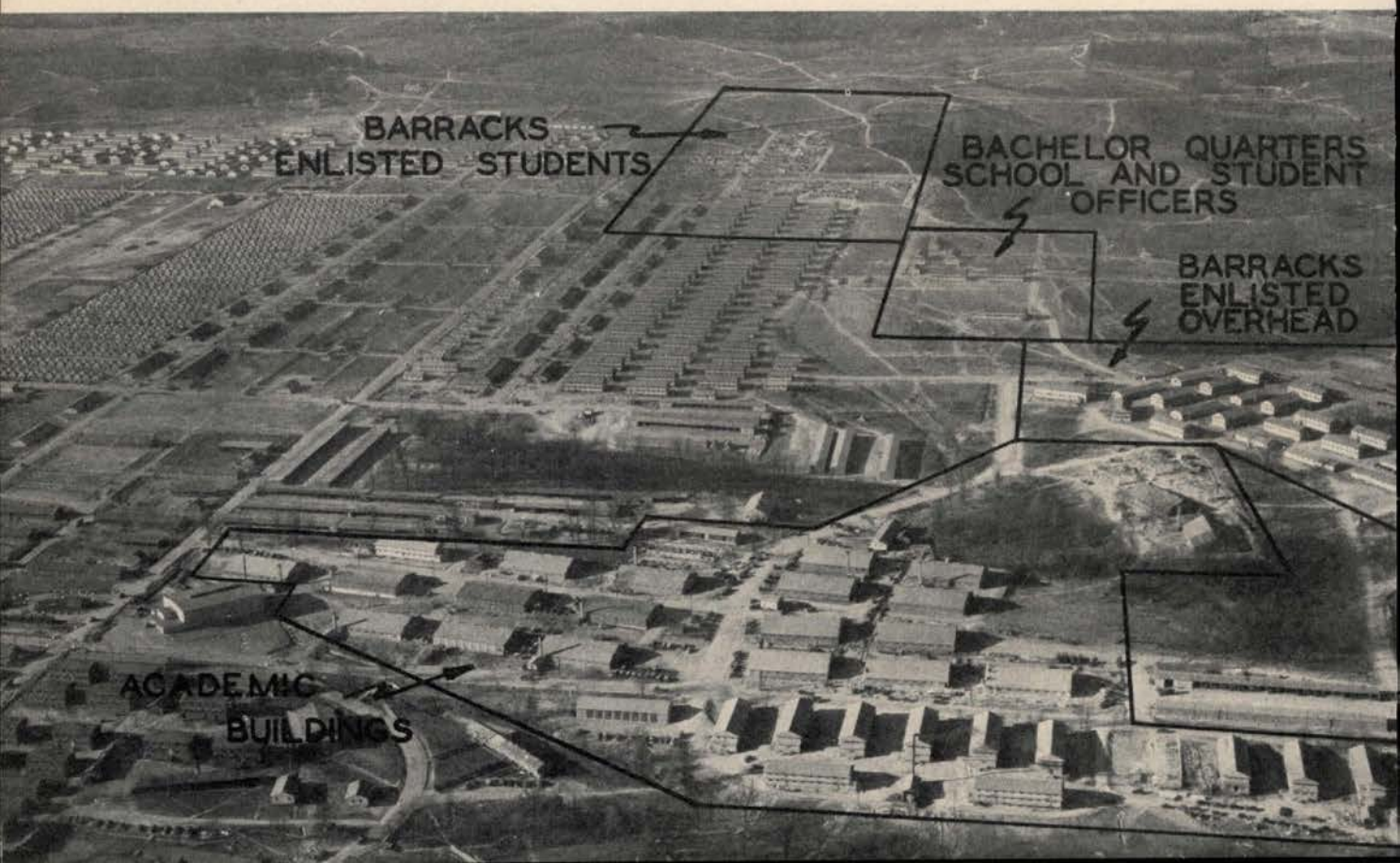
While it is true that there were specialists in the units of the Force which had been active previously, and many of these were school-trained, the activation of new units and the expansion of others threatened to drain this supply below any reasonable minimum.

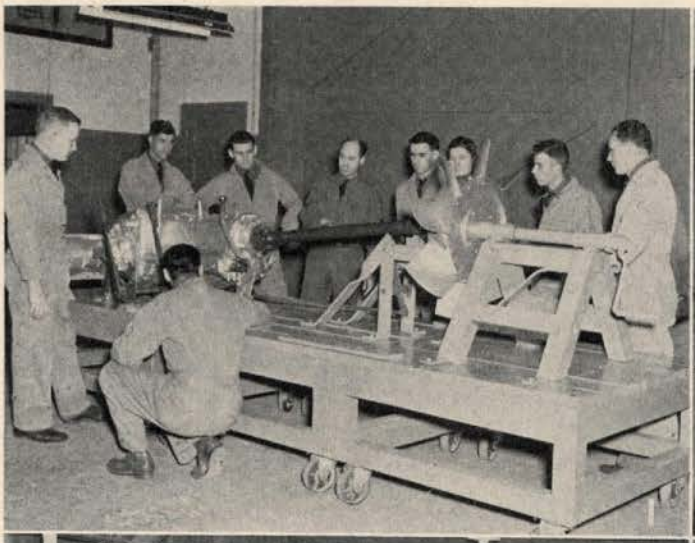
A single armored division contains 1,149 combat and 2,235 non-combat vehicles. Of these, 747 are equipped with radio. A General Headquarters Reserve light tank battalion has 160 vehicles and 66 radios, a medium battalion, 186 vehicles and 73 radios. It was apparent by simple arithmetic that the number of operating and maintenance personnel for this matériel, plus the clerks needed to administer the new units, would reach into thousands. In addition, there was an immediate shortage of trained junior officers able to handle the duties of maintenance and communication.

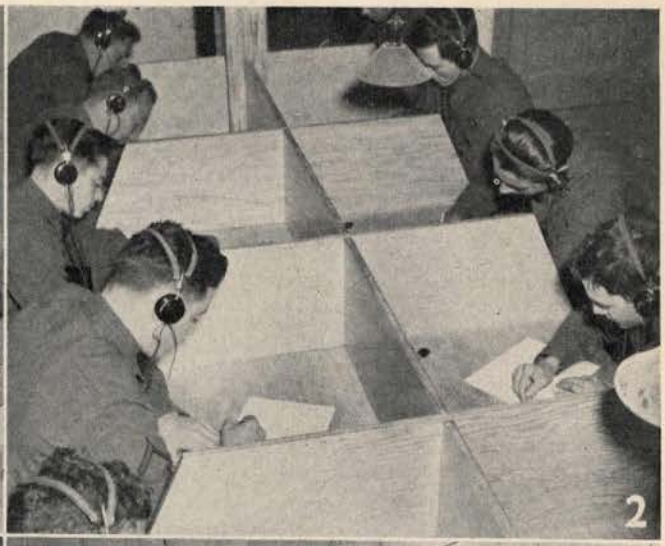
Certainly existing service schools, already overtaxed to produce specialists for divisions already planned, would be unable to furnish the Armored Force anywhere nearly these numbers. Besides, it was realized at once that Armored Force officers and enlisted men alike face different problems, both in maintenance and operation, from those in other branches.

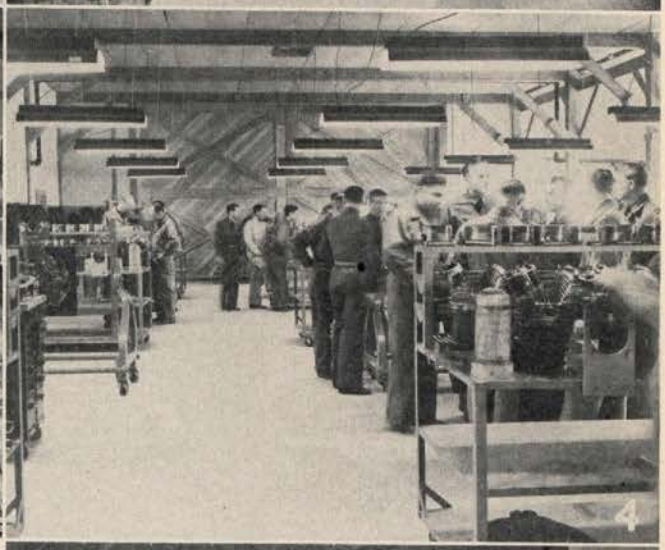
The answer was the Armored Force School, estab-

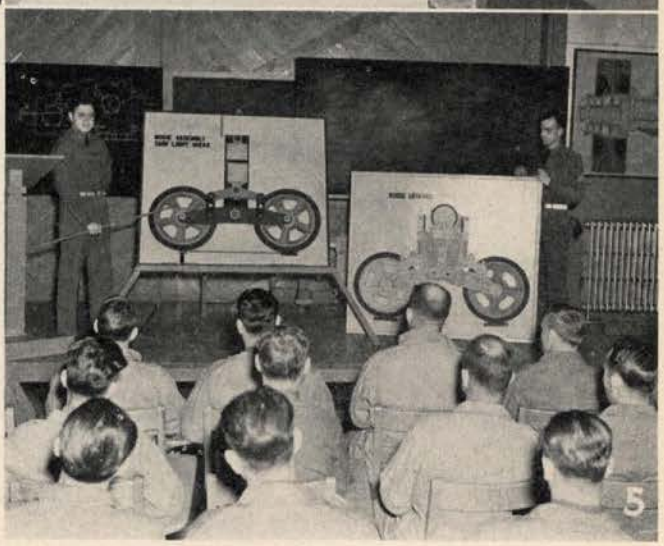
Area occupied by buildings of the Armored Force School











ARMORED FORCE SCHOOL

1—Students receiving instruction in tank department. 2—Students in radio section, communication department. 3—Section of motorcycle department. 4—Engine section, tank department. 5—Class instruction, tank department.

lished by directive of Major General Adna R. Chaffee, Chief of Armored Force, on August 7, 1940.

The Tank School at Fort Benning, with its equipment, was made available at once. The 1st Armored Division had been conducting some instruction at Fort Knox and this personnel could be utilized.

The problem of a physical plant was the most urgent. Land along First Avenue and to the north of the avenue was allocated to the school but the only building which could be used for a headquarters was an old summer mess hall. It was in this structure that the Armored Force School was established.

It was here, also, that the plant was laid out and the curriculum planned. An analysis of the requirements of the Force, as then constituted, showed that about 800 officers and 7,200 enlisted specialists should be produced in 12 months. The physical plant of the school was laid out for this capacity.

The instructional system was broken down into eight departments. These were tanks, wheeled vehicles (including half-tracks), communications, tactics, gunnery, field engineering, motorcycle and clerical. Motorcycles were placed in a separate department because of the intensive and highly specialized use of this machine in the Armored Force.

The War Department officially authorized the establishment of the school on September 20, 1940, with an

initial capacity of 200 commissioned officers and 1,800 enlisted men. Authorization was given also to utilize civilian trade schools to step-up the production of specialists in the emergency. Already a survey had been made of trade schools within a radius of 400 miles of Fort Knox, and equipment and curricula studied with relation to their application to the needs of the Armored Force. Five schools, located in Chicago, St. Louis, Cincinnati and Valparaiso, Indiana, were selected. On October 9, 1940, details totaling 731 enlisted men from the 1st and 2d Armored Divisions were enrolled in these schools.

The trade school courses were for automotive mechanics, Diesel mechanics, radio operators, radio electricians, welders, and machinists, and ranged in length from six weeks for welders and machinists to sixteen weeks for radio operators. Included in the plans for these trade school students were finishing courses at Fort Knox where the instruction received would be given practical application to Army equipment, and final examinations held to determine whether the students were able to meet the standards set in the regular courses at the Armored Force School.

In the meantime at Fort Knox construction and planning were going on at top speed. The capacity of the school, set by the War Department, was approximately one-fourth of the requirements of the Armored Force. It was planned to operate the school in four cycles of three months each to produce the quota. The first cycle was scheduled to run from November 4, 1940, to January 31, 1941.

On November 4th the Armored Force School enrolled the first students in its own plant. There were 219 commissioned officers and 1,619 enlisted men from the 1st and 2d Armored Divisions, and the 70th Tank Battalion, Fort Meade, Maryland. Included were ten enlisted men of the United States Marine Corps, from the bases at San Diego, California, and Quantico, Virginia. For the officers there were courses in communications, tank maintenance and wheeled vehicle maintenance. For enlisted men there were classes for radio operators, radio electricians, motorcycle mechanics, motorcycle operators, cryptographers and clerks. In many cases these classes met while carpenters still were building walls around the students.

A great deal of attention was given to the curricula of the officers' courses in order that they might not be too narrow. All the courses, regardless of the technical specialties of the students, included work in gunnery, tactics, field engineering and motorcycles. A similar policy was set up for the tank and wheeled vehicle mechanics' courses for enlisted men. Before graduation all were scheduled to work in gunnery, field engineering and motorcycles. The special problems involved in the tactical operation of motorcycles were recognized by including a week of study in field engineering. In this week instruction was given in recognition of enemy installations such as road blocks and tank traps that these men were liable to encounter.

A tentative plan to include a general course for officers of all grades newly assigned to the Armored Force was discarded. The need for orientation or "indoctrination" study was recognized, but it was decided that the Armored Force School would confine itself to the production of specialists.

There necessarily was some experimentation in the first cycle of training. For instance tank and wheeled vehicle operation was scheduled and taught in the first courses. This was found to be impractical and subsequent plans eliminated this subject. It was found that vehicle operation except motorcycle could be taught more efficiently in units. Later, even motorcycle operation was discarded.

Similarly the course for cryptographers in the Communications Department was consolidated with the radio operators' course.

Because of the pressing needs of the two armored divisions, then being trained, the first officers' classes at the Armored Force School were composed entirely of reserve officers assigned directly from their respective corps area in quotas of 25 each. Upon arrival at the school the students were assigned to the departments for which they seemed best fitted. Later this policy was not necessary and officers are assigned directly by their respective divisions, or in the case of the 70th Tank Battalion, by the commanding officer of their unit.

Very soon after the school opened in November the projected expansion of the Armored Force made all the production plans of the school obsolete. The enlargement of the Armored Force to six divisions, 15 Regular Army GHQ tank battalions, and 10 National Guard GHQ tank battalions multiplied the requirements for specialists.

The expansion of the physical plant of the Armored Force School to care for the production of these additional quotas was obviously impracticable if not impossible in the time allowed. Besides, it would certainly leave the school with an enormous excess capacity whenever the emergency was over. Another problem was the procurement of more technical equipment, which appeared insurmountable.

Experience with the three-months-cycle system had indicated that the entire plant was not being utilized all of the time. For instance, students who had progressed to the chassis section of the tank department no longer needed the engine section equipment and it lay idle. A similar condition prevailed in nearly every department.

Remembering that the mass production methods of the auto industry do not await the completion of one unit before starting another, a plan was made to utilize all of the equipment of the school all of the time. The major courses were broken down into phases. The tank department, for example, was divided into nine phases of eight days each. In that department there was room

for seventy students in each phase. Therefore, 630 students could be given training at the same time.

To augment further the capacity of the school a two-shift day was directed. The first shift was scheduled from 6 AM to 12 noon, and the second from 1 PM to 7 PM, both shifts to attend school six days a week. This involved a loss of only three hours a week from the former 39-hour schedule. It required, however, considerable study to reduce administrative hardship on the organizations of the 1st Armored Division with men in school. It was found best to schedule 1st Division students to morning classes and those on detached service from Fort Benning and Fort Meade to the afternoon.

The same procedure was followed with the officers' classes except in the communications department. Officers in tanks and wheeled vehicles were divided between tactics and gunnery on a single shift basis until they were ready for work in their principal departments. They were then to go on a two-shift schedule until work in that department was completed.

All these changes were made and arrangements completed before the first cycle of operation of the school ended on January 30th. In the meantime, to meet the need for gunnery officers, particularly for the new 37-mm. pieces and the Thompson submachine gun, a course intended to qualify officers of the Armored Force as instructors was scheduled and carried through.

During January, at the request of the War Department, the Armored Force School stretched its facilities to accommodate a class of automotive mechanics from the 4th Infantry Division at Fort Benning.

By January 30th, the Armored Force School had graduated 279 officers and 2,083 enlisted men from all departments. It was prepared to plunge into mass production of specialists in totals that would have looked astronomical a few months before.

The physical plant of the school, non-existent a few months ago, has grown to 299 buildings, 46 of which are used exclusively for instruction. There is a theater with a seating capacity of 1,038. The operating and instructional personnel has grown to 182 officers and 1,847 enlisted men. Construction is still in progress on additional barracks, mess halls and recreation buildings for students on detached service from other posts. The establishment includes a branch officers' club, a branch post exchange, and a separate post office.

By means of the two shift system and weekly increments of students the capacity of the school has been raised until the quota of 1,440 officers and 21,000 enlisted specialists will be met at the end of the first year of operation. Beginning about May 1, 1941, graduates will be emerging from the school and returning to their units at the rate of 430 every Saturday.

Stresses due to shortages of equipment are gradually being eliminated. Much technical machinery has been delayed by the pressure of demand for war supplies, thus multiplying instructional problems.

Nothing, however, is delaying the production of Armored Force Specialists. In great industries raw materials flow through the plants, are worked on by skilled technicians, and emerge as finished articles. In the Armored Force School, the untrained man is the raw material. He moves through the schools where instructors impart detailed information and teach operations which he later will perform in his organization. He progresses from phase to phase and emerges with the basic training necessary to work at his specialty.

He is not an expert when he leaves the Armored Force School. Only the man himself and the opportunities given him by his organization commander can make him that. But he is qualified to do his part in the Armored Force.

Armored Force Library

The Armored Force School at Fort Knox, Kentucky, has established a school library. It has been requested by the school commandant that all officers who have books on the subject of Tanks, Armored Cars, Motorcycles, Motors and related subjects in general, which they no longer need, please send them to *The Librarian, The Armored Force School, Fort Knox, Kentucky.*

Sub-Caliber Devices at Fort Knox

*By Lieutenant Colonel L. D. Tharp, Infantry**

THE efficient training of personnel for large caliber weapons requires sub-caliber equipment that will provide gunnery practice at minimum cost and with minimum range safety requirements.

An efficient sub-caliber device should:

a. Fire a small caliber inexpensive cartridge.
b. Provide the same ballistic characteristics as the shell it represents.
c. Require the same operating procedure as in combat.
d. Be simple in design; inexpensive, practical and stable in operation, and easy to mount and adjust.

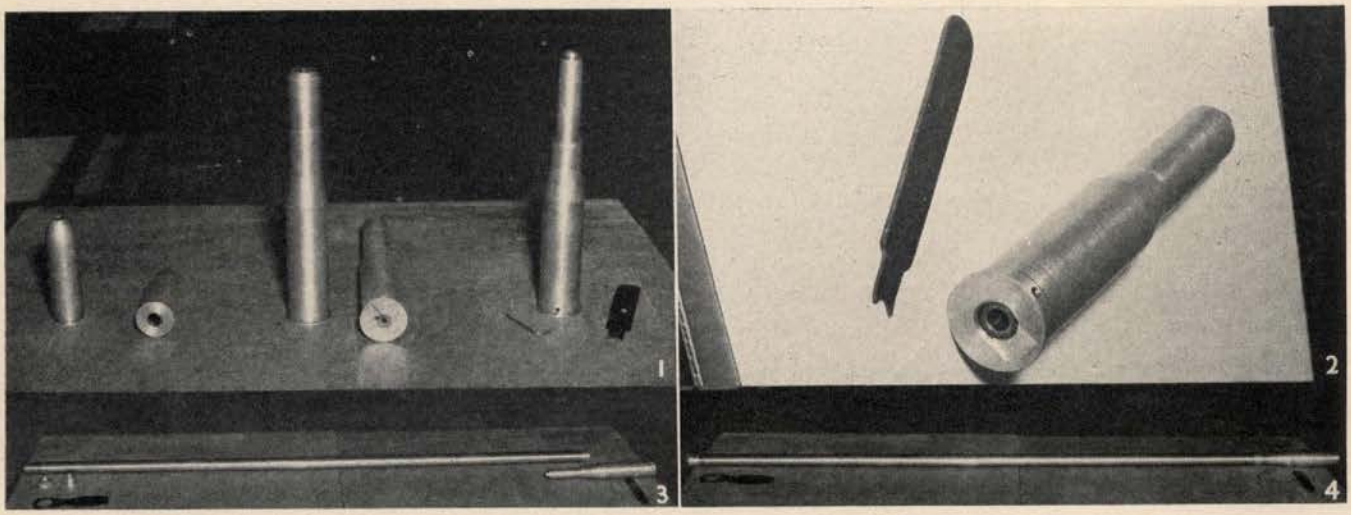
One of the most effective designs which meets many of the above requirements consists of a small caliber rifle or pistol barrel inserted in a brass or bronze replica of a standard shell. (See Plate No. 1.) Here are shown a .45 caliber pistol barrel in a brass replica of the old 1916 model 37-mm. shell; a .22 caliber barrel in a bronze replica of the shell for a modern 37-mm. M-3 or M-5 antitank or tank gun, and a .30 caliber barrel in another replica of the same shell.

The first of these sub-caliber devices was designed and used at Fort George G. Meade, Maryland, by the writer in 1920 and is believed to be the first of this type. It gave excellent results when used in the old six-ton tank in combat training. A .45 caliber pistol barrel was used with tracer ammunition in order that the strike of the bullet could be observed by the gunner and proper correction for errors in aim and range estimation be made. The same design with a .30 caliber barrel was used for the six-pounder tank cannon in the 40-ton Mk. VIII tank with equally good results. Now there is a demand for a sub-caliber device for our latest 37-mm. antitank and tank guns, due to the shortage of ammunition and the lack of ranges meeting the safety requirements for this weapon.

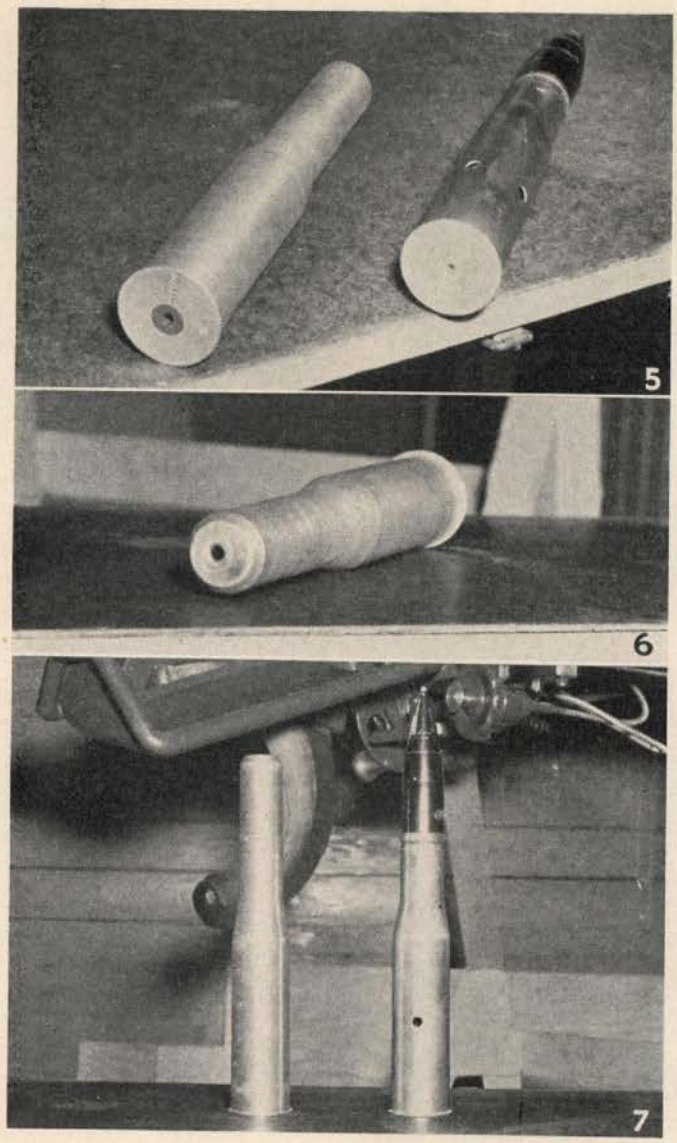
Therefore, at the Armored Force School the Gunnery Department has designed and obtained twenty of the .22 caliber sub-caliber devices for the 37-mm. M-5 tank gun. These are in daily use on the indoor miniature range, and provide excellent training at minimum cost. They meet practically all of the requirements of sub-caliber training. They fire inexpensive cartridges, provide the same mechanical training required to operate the gun in combat, are simple in design, inexpensive, practical and stable in operation, and require no complicated mount or adjustment.

A rough casting of the general outline of a 37-mm. M-51 shell is made so that the walls will be about 3/16 of an inch thick when finished. Then it is machined to the exact size of the 37-mm. shell from the base to the rotating band on the projectile. From the rotating band to the nose it can be of any convenient shape that will allow proper clearance in the gun.

*Gunnery Department, The Armored Force School, Fort Knox, Kentucky.



Plates 1, 2, 3 and 4



Plates 5, 6 and 7

Top—Rear view of .22 caliber device and standard 37-mm. shell. Note sighting mark on rear face of casting. Center —Front of .22 caliber sub-caliber device. Bottom—Comparative sizes of casting and standard 37-mm. shell

A cheap .22 caliber rifle barrel about 24 inches long is then cut into two pieces of approximately 12 inches each and a smooth surface about one-half inch long is turned on each end. Also, a small shoulder is turned at the rear end of the barrel to act as a stop when the barrel is forced into the casting.

Since the 37-mm. gun is a center-fire weapon and the .22 caliber cartridge is rim-fire, the barrel must be offset .060 of an inch at both ends to permit the center-fire firing pin to strike the rim of the .22 cartridge and still keep the barrel parallel with the axis of the casting.

Therefore, the casting is reamed .060 of an inch off center at each end, sized to a press fit for the barrel and the barrel pressed home. A one-eighth inch Allen set screw is inserted at the breech end of the casting to hold the barrel in position. The rear end of the barrel should be flush with the base of the casting for proper head space adjustment.

To prevent rupture of the .22 caliber cartridge, the standard firing pin spring in the 37-mm. M-5 gun is replaced with one just strong enough to detonate the small shell. The cost of this device complete with barrel is $18.00 when manufactured in lots of twenty.

For convenience in rapid manipulation fire, a supply of two shells for each gun is advisable so that one shell may be loaded while the other is being fired. One .22 rifle barrel cut in two will provide barrels for two castings. When all the shells are assembled they must be targeted in and marked on the rear face to make certain that the casting will be placed in the breech of the gun in approximately the same position each time. If extreme accuracy is required, this is necessary because .22 caliber rifle barrels are not true and a new rifle barrel will fire a circular pattern about two inches in diameter at 1,000 inches, if rotated. At the Armored Force School all castings are targeted and marked on the rear face so that a bullet from any casting will strike a one-inch paster at 1,000 inches with the same telescopic sight setting.

The same general principle is applied to the fabrication of the .30 caliber sub-caliber device except that the barrel is not offset and the rear opening in the casting is threaded to fit a water-cooled machine gun barrel. The barrel is cut about 13 inches long so that it extends about one-half inch beyond the nose of the casting. Two plates sized to fit any standard wrench are cut on the muzzle-end of the barrel to facilitate turning for head space adjustment. An Allen set screw is used to fix the barrel in place when the proper head space adjustment has been determined. The base of the casting is cut to facilitate extraction of the empty shell. A hand extractor and Allen wrench are provided as accessories. (See Plate No. 2.)

The muzzle blast of the .30 caliber cartridge will burn and pit the 37-mm. barrel if adequate protection is not provided. This is accomplished with a tube or pipe, 1-7/16 inches outside diameter and 1⅛ inches inside diameter. The rear end of the tube is provided with a ¾-inch brass collar which engages the lands in the 37-mm. barrel, thus preventing the tube from passing entirely through it. The front end of the tube is provided with a brass collar and nut which are used to lock it firmly in the barrel. That portion of the sub-caliber device from the rotating band to the nose is trimmed down to fit inside the tube so that the muzzle of the .30 caliber barrel projects about 3½ inches into the tube. A spanner wrench is provided to tighten the muzzle gland nut. (See Plates 3 and 4.)

Since the trajectory of the 37-mm. shell and the .30 caliber cartridge are very similar this device affords excellent training in firing at field ranges.

Tests with the .30 caliber sub-caliber device have not been completed and therefore further modifications may be indicated.

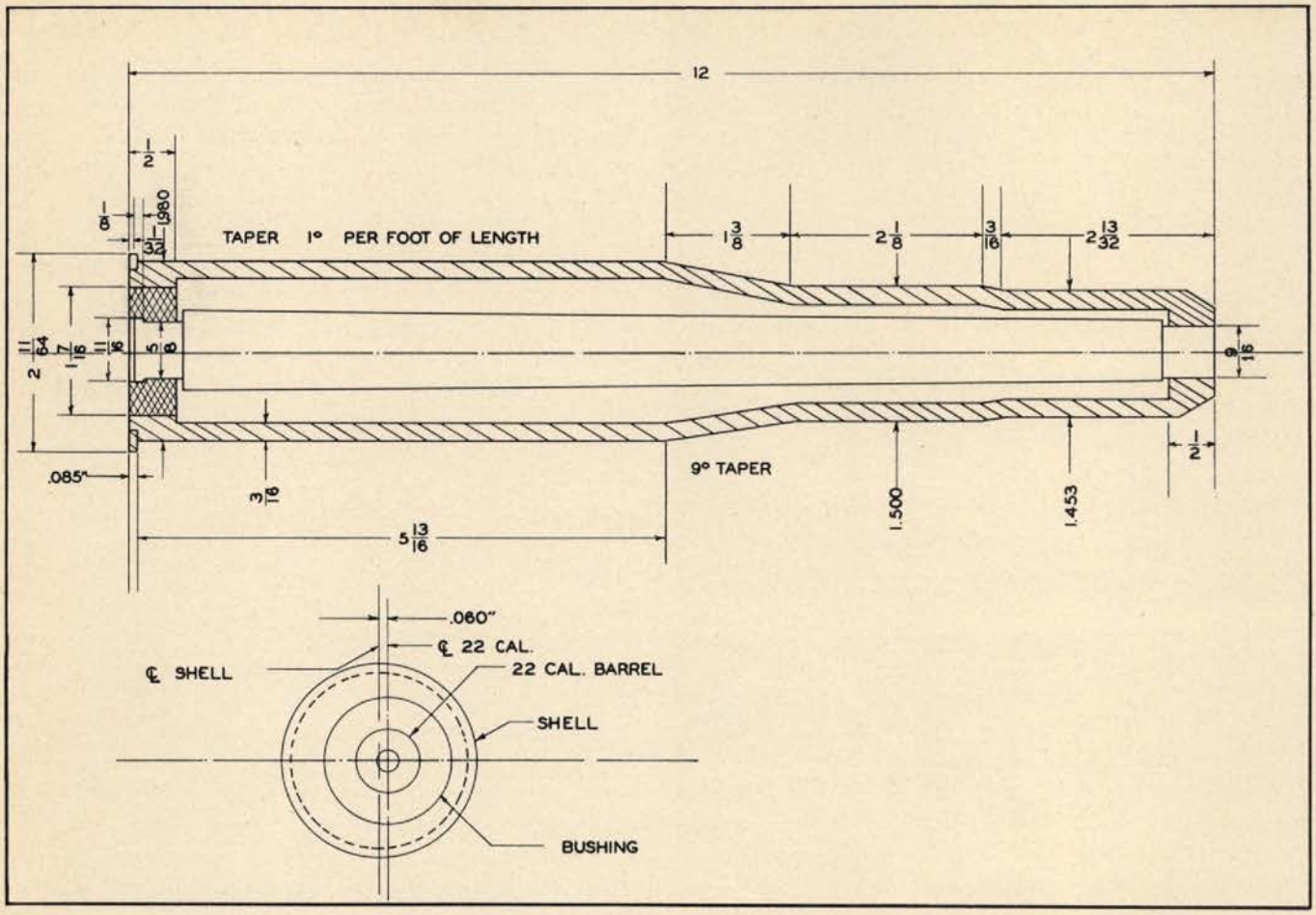


Plate 8: Details of casting .22 caliber sub-caliber

All devices of this type provide actual training in loading and serving the gun under virtually the same conditions as those required in the field and are, therefore, very satisfactory for combat training. They are now in constant use at the Armored Force School with excellent results. If desired, further details may be obtained from the Gunnery Department of The Armored Force School at Fort Knox, Kentucky.

★ ★ ★

First Armored Regiment Has 61 Battle Honors

The First Armored Regiment (L) is the oldest regiment of cavalry in the United States Army and was the first regiment of cavalry to be completely mechanized.

In 1833, as the result of a need for a mounted force to protect the pioneers who were pushing westward across the Mississippi River into the Indian country, Congress authorized the organization of "The United States Regiment of Dragoons," which became the "First Regiment of Dragoons" in 1836, and the "First Regiment of Cavalry" in 1861.

The outbreak of the Civil War found the Regiment in Arizona and on the Pacific Coast. The Regiment joined the Army of the Potomac and fought with that army in all of the principal battles of the Civil War. With the close of the Civil War the Regiment resumed its Indian campaigns fighting Apaches in Arizona and various other tribes throughout the West.

From its far western posts the Regiment was assembled at Chickamauga for the Spanish-American War, took part in that war and the Philippine Insurrection which followed, and returned to the United States in 1903. The Regiment served on the Mexican Border during the World War and in 1933 became the first regiment to be completely mechanized, being stationed at Fort Knox, Kentucky.

Of streamers carried on the regimental standard, the 1st Armored Regiment (L) is authorized to bear 61 Battle Honors, a greater number than any other regiment in the United States.

The Second Armored Division Grows Up*

LIKE MINERVA, the 2d Armored Division sprang fully matured, but in reduced size, from the ambrosial forehead of Major General C. L. Scott. The day of this epoch-making headache was 15 July, 1940.

At birth it consisted of little more than the 66th Armored Regiment and a few cadres from other units, 2,202 men and 99 officers in all.

Now, in March, 1941, some eight months later, it consists of 10,121 men and 776 officers. In addition it is training some 4,875 men and 687 officers to act as cadre for the 3d Armored Division which the best medical advice now believes will first see the light at the new laying-in hospital at Fort Polk, Louisiana, some time in April. In passing one may note that the said laying-in hospital is also in the process of creation at the present moment.

Obviously, it is impossible in the limited space and more limited time available, to trace all the stirring events which have transpired since last July.

From its beginning the Division has been imbued with General Chaffee's belief that an emergency exists and that it is its duty to be ready for action at any time.

To this end General Scott, and since his departure for Fort Knox on November 3, 1940, General Patton has stressed both unit instruction and division training so that by working from both ends, so to speak a maximum of results will be obtained in a minimum of time.

From the unit training standpoint emphasis has been placed on combat effectiveness. For example, after their second lesson, drivers are taught to function with the ports closed; after the third lesson they are required to maneuver in formation by platoons using only flag signals. Also every new soldier is taught to manipulate and fire all types of weapons during the first month of his service.

*By G-2, 2d Armored Division, Fort Benning, Georgia.

Scout car stripped for action

The command has been impressed with the fact that the expression "Fire and Movement" is not just a catch phrase but a vital necessity. In other words that they are not to *FIRE OR MOVE,* but to *FIRE TO MOVE,* for the Division believes in the words of the immortal Farragut that, "The best Armor is a rapid and well directed fire."

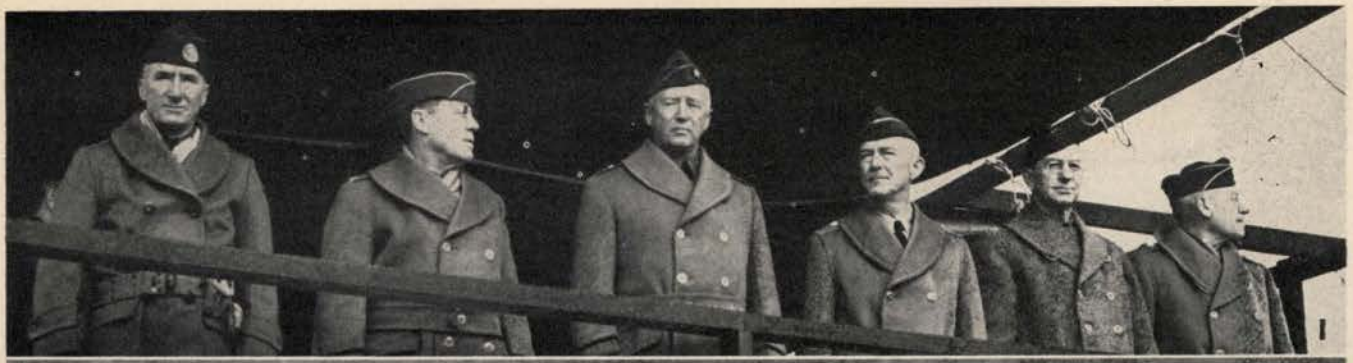
In order to give reality to this belief General Scott laid out 15 ranges, of which 4 are combat, 4 are moving target, four are moving vehicle, 2 are thousand inch, and 2 are pistol. One range serves both thousand inch and pistol. The thousand inch ranges, it should be noted, are capable of training 340 men at one time.

In order to give tactical facility in the use of this fire a course has been set up to demonstrate, first by platoons, then by companies, and so on. In staging these demonstrations each type of platoon, etc., has worked out a typical problem and after a rehearsal has demonstrated it to as many officers and men as could profitably observe. These problems have illustrated the action of the Reconnaissance Battalion and of the Reconnaissance Companies of the Light Regiments. Similarly, the machine gun companies, the tank companies (both light and medium), the infantry, the artillery, and the engineers have all given several examples of how their specific missions are to be accomplished.

It has been stressed that the solutions presented are not the only ones possible but rather that they are intended to provide a datum plane from which further developments may be carried on. In addition to the above the Division as a whole has participated in seventeen problems. The details of these are shown in Table I. One of the Division exercises, played in several phases, has been used as the build up for a tactical demonstration in which the whole division participates. The final phase, which is the demonstration, shows a coördinated attack, using all weapons—including bombardment aviation—followed by the forcing of a river by fording under the cover of supporting fires by infantry and artillery and facilitated by the operation of the engineers.

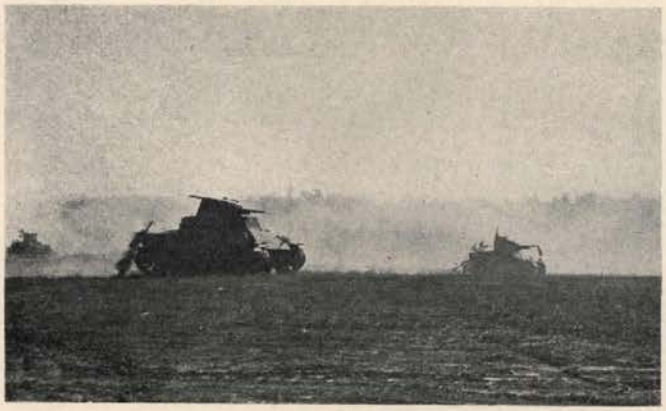
In addition to the foregoing comprehensive program, all the officers of the division assembled each Monday

Bridge built by Battalion A, 17th Engineers



SECOND ARMORED DIVISION REVIEW

1—Reviewing Party. Left to right: Brigadier General Alvin C. Gillem, Jr., Brigadier General Henry W. Baird, Brigadier General George S. Patton, Jr. (C.G. 2d Armored Division), Brigadier General Courtney H. Hodges, Brigadier General Fred C. Wallace, and Brigadier General Oscar W. Griswold. 2—Motorcycles moving into position. 3—The ride around. 4—Motorcycles passing in review



Tank attack

evening from August through December for lectures by different officers on the organization, tactics and logistics of the Armored Division; including a brief discussion of the German operation in Poland and a comparative study of a German Panzer Division and our own Armored Division.

These meetings not only permitted rapid orientation and instructions of all officers, but also allowed the Division Commander to personally talk to the officers and emphasize points of current interest. In these talks emphasis was placed on the care of the men and the material, on the prevention of social diseases, on military courtesy, and on smartness of dress, etc. Beginning in January all unit commanders and their staffs have met each Monday for a conference problem covering the consecutive operations and orders of all elements of the Division in a rear attack against the perfidious Reds from Florida, who have had the temerity to attack Alabama through the neutral state of Georgia. At this writing, it seems certain that, owing to the heroic efforts of the 2d Armored Division, the Reds are about to go down in bloody and ignominious defeat.

In closing, the Division feels justifiably proud in calling attention to the admirable record disclosed in the following statistics as of the month of February. (See Table II.)

Not only has the Division been bountifully supplied with men and officers but also in both number and quality the material being made available to it is most ample and satisfactory. Indeed, it is safe to say that no unit in the world possesses better equipment of every type.

It is the ambition of the Division to be worthy of the traditions of the American soldier and of the equipment with which it has been provided. Finally, the Division would be niggard in appreciation if it failed to take this opportunity of thanking the editor of The Cavalry Journal for the opportunity he has given it to describe its activities in the pages of his august publication.

Table I

Date	Type of Exercise	Units and Remarks
July 15, 1940		Division organized. Cadres began arriving.
August 27, 1940	Field Exercise	Entire Division. March into assembly positions for attack.
September 18, 1940	Dismounted Review	Entire Division.
October 4, 1940	Combat Exercise	All Combat Elements in attack. This has been repeated 6 times as a demonstration.
October 7, 1940	Command Post Exercise	All units. March, bivouac, reconnaissance and security.
October 10 and 11	Field Exercise	Entire Division. Same problem as C P X.
November 7, 1940	Field Exercise	All combat units. Two-sided combat problem.
November 14, 1940	Field Exercise	All combat units. Two-sided combat and river crossing.
December 6, 1940	Command Post Exercise	In conjunction with 4th Division.
December 12 to 17	Field Exercise	Entire Division March to Panama City, Florida and return with intermediate bivouac. March in two columns. One night march, participated in by 392 officers, 6,079 men, 1,126 vehicles including 241 tanks.
January 17, 1941	Field Exercise	All ground Reconniassance units.
January 20, 1941	Field Exercise	Armored Regiment vs. Infantry, Field Artillery and Engineers.
January 25, 1941	Field Exercise	All Field Artillery and Aviation.
February 3, 1941	Field Exercise	Armored Regiment vs. Infantry, Field Artillery and Engineers.
February 14, 1941	Mounted Review	Entire Division. Approximately 2,000 vehicles and 10,000 men and officers.
February 25, 1941	Field Exercise	Division Headquarters, Headquarters Company, Signal Company and Reconnaissance Battalion.
March 4, 1941	Field Exercise	All Field Artillery, Engineer Battalion and Observation Squadron.

NOTES

1. Combat aviation has participated in all division and most regimental and brigade exercises.
2. In addition to above, Division has carried out two Air Ground coordination exercises for GHQ.
3. Above list does not include brigade and smaller unit demonstrations for Infantry School which are given regularly.
4. Above does not include regular division and brigade communication exercises.

Table II

Statistics on 2d Armored Division

(Percentage of Command Average over period from July, 1940 to March, 1941)

Total number of men	10,835
Total Courts-Martial	1.9%
General Courts	.22%
Special Courts	.36%
Summary Courts	1.55%
A W O L	1.54%
Desertions	.277%
Admissions to Hospital	5.87%
Venereal Rate	.24%

The Motorcycle in March Control

By Lieutenant Colonel Charles R. Johnson, Jr., 106th Cavalry

THE remarks in this article apply primarily to a horse-mechanized regiment moving by road in a non-tactical situation. I believe the principles and procedure set forth to be equally applicable to a fully mechanized regiment. These principles are highly satisfactory in the 106th Cavalry (H-Mecz). Following these principles the mechanized squadron of the 106th Cavalry recently made an eight hundred mile march from home stations in Illinois to Camp Livingston, Louisiana, without having a single incident of interference with civilian traffic and coming through completely free of accidents. There were even no near-accidents. Experience in the 106th Cavalry and, previously, in the 7th Cavalry Brigade Mechanized have indicated to me that the prevention of accidents, while it depends on careful driving to a great extent, varies directly with the efficient use made of motorcycles, particularly solos. This experience also ties very closely together the duties of traffic control and route marking.

The first mooted question regarding the use of motorcycles is as to whether motorcycle control should be by regiment, squadron, or troop. I believe that more efficient control results from the procedure of grouping the motorcycles by regiment. Certainly this practice is easier on the vehicles, from a maintenance standpoint. The present type of motorcycle heats up rapidly in making slow runs and frequent stops and starts. From the maintenance standpoint the motorcycle's stops should be long and runs relatively long, and at speeds over thirty-five miles an hour. This prevents overheating, and overheating is at the root of most motorcycle breakdowns. A motorcycle engine cannot be cooled at slow speeds. Where control is by regiment, a motorcyle, falling out at a critical point, has approximately forty-five minutes in which to cool off while a horse-mechanized regiment passes it. In regaining its place at the head of the column the cycle runs at relatively high speed for nearly an hour. The number of times that it falls out throughout the day is greatly reduced. The other extreme, control by troop forces each motorcyclist to fall out at least ten times as often and to remain halted and cooling only one tenth as long as it would were control to be by regiment. Where eight separate control groups pick what appears to them to be critical points I believe that the critical points will not be so well chosen as they would be if one officer selected them for the entire regiment.

Procedure in the 106th Cavalry is as follows:

First: March the entire motorcycle troop ahead of the Regimental Command group, grouping within the motorcycle troop all solos at its head. All these solos are used before any sidecars function for traffic control. The sidecar cannot run up the column as fast or as safely as the solo, and it should be used as a last resort.

Second: Strip all other troops of their solos except for one solo to trail each squadron, troop, and platoon command car, attaching all other solos to the motorcycle troop for traffic control purposes. This procedure leaves the other troops sufficiently well provided with motorcycles for stick-message service.

Third: Designate the commanding officer of the motorcycle troop to select critical points. Have him indicate to his leading solo riders, by pointing, the exact locations where he desires traffic guards to fall out. These traffic guards are to remain in place until the rear vehicle of the Regiment, exclusive of Regimental Maintenance and cripples, has passed. These solo riders then move forward to rejoin the motorcycle troop. They are instructed to use every means at their disposal, as they go forward, to assist civilian traffic in passing the column. They are further instructed, on call, to take stick-messages in any event that the stick-messengers trailing the command cars are out of commission. It will be noted that as they go forward these men make no attempt to relieve traffic guards along the line of march. This prevents the possibility of a traffic guard's relieving himself when he sees another motorcyclist approaching, thereby leaving a point uncovered. A cyclist going forward, however, will occupy any critical point that he sees is not covered. As an example, certain points become critical after they have already been passed by the head of the control group. This might occur where a civilian truck has stalled along the road, creating a bottleneck that did not exist when the head of the column passed that point. Such temporary bottlenecks are abandoned after they cease to be bottlenecks. All traffic guards are instructed to point out emphatically the route of the column wherever a change of direction takes place. These gestures must be plain and unmistakable and held until acknowledged by the approaching vehicle.

Fourth: Where a bottleneck is caused by the routine halt of the column, or by the temporary halting of any one vehicle, the cyclists make no attempt to protect this

bottleneck, but continue on their way to the front. It is the duty of the crew of a stalled vehicle, creating a bottleneck, to post two dismounted guards with flags. Similarly, the column, on halting, always posts dismounted guards at the head and tail of each troop.

Fifth: This Regiment has seen no occasion to require the use of radio with the control groups. If such need should arise, there is the organic radio of the motorcycle troop.

Sixth: The following critical points are covered by cyclists unless positively controlled by civilian police:

Stop lights	2 cyclists
Stop signs	2 cyclists
Cross roads	2 cyclists
Roadforks	2 cyclists
Side roads	1 cyclist
Railroads	1 cyclist
Narrow bridges	1 cyclist
Changes of route	1 cyclist
Defiles caused by parked cars	1 cyclist

Cyclists at the above points must be alert to pass civilian traffic through whenever gaps in the column make it safe to do so. They must never halt civilian traffic unnecessarily, and must be extremely courteous in performing their duties. They should carry red flags.

* * *

In the 106th Cavalry, the control group is not used to contact police authorities. It has been found that this Regiment, using each village ordinarily marked on the highway map as a check point, can march on a predetermined schedule, hitting these various villages within two minutes one way or the other of the scheduled time. These schedules are hectographed and furnished each car commander. They give not only the time the head of the Regiment passes each village, but the time that the head of each troop passes. Copies of these schedules are invariably sent to the chief of police of each locality on the map, with a request that he put a man at each stop sign or stop light along the road or permit our motorcyclists to perform that duty. He is further requested, in case he has preference as to our route through his town, to have a guide meet us. In the march from Illinois to Camp Livingston we found that the police invariably acceded to this request and all seemed very much flattered at our having asked them to do this. An advance agent also precedes the Regiment by one day, reporting by telephone at night any unforeseen detours.

I have heard of a system whereby a unit guarded itself but did not await the arrival of the leading cyclist from the following unit. This system delegates the selection of critical points to the individual cyclist, which is bad. It also fails to mark the route. It creates a lack of continuity in the control and I believe that it would tend to make safety a haphazard matter.

Regimental Maintenance and cripples usually run without protection, and therefore must stop at all lights and stop signs. It is possible, of course, to assign three or four cycles to this group, if desired, but inasmuch as maintenance may be well in rear of the tail of the regiment, the route for it cannot be marked. One cycle should, however, be sent back from the bivouac to lead it in.

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The strength of an army, like the momentum in mechanics, is estimated by the weight multiplied by the velocity. A rapid march exerts a beneficial moral influence on the army and increases its means of victory.—NAPOLEON.

CARDED

Ferrying Operations

By Major Albert Whipple Morse, Jr., Cavalry

FERRYING operations in the crossing of a river under adverse conditions were shown clearly in a demonstration and practical exercise held on March 6, 1941, for the 3d Basic Horse and Mechanized Class and Noncommissioned Officers Class at The Cavalry School, under the supervision of Lieutenant Colonel William B. Bradford, Cavalry, Chief of the Department of Tactics, and under the direction of Major Thomas T. Thornburgh, Cavalry, of that department, with the assistance of Captain Norris McL. L'Abbe. In charge of the engineer phase was Lieutenant Robert I. Dice, 9th Engineers.

Operations were conducted across the Smoky Hill River near the 6th Street Bridge in Junction City, and snow and ice added difficult features which might be encountered in actual practice.

Standard 10-ton ponton bridge equipment was used to construct the ferry in taking a scout car across the stream.

Due to the lack of a well defined current in the river at the point of crossing, neither the trail ferry in which the ferry itself acts as an inclined plane against the current of the river nor the flying ferry in which the ferry is swung from bank to bank, similar to the action of a pendulum, could be used. Consequently, an anchor cable was used to guide the ferry and to draw it from one bank to the other.

As shown in No. 1 of the accompanying photographs, the vehicle was loaded slowly under its own power. At the stream side of the ferry, a safety curb was employed to block movement of the scout car.

The most important feature of either loading or unloading of a vehicle on or from a ferry is anchoring the ferry to the shore to prevent the thrust of the vehicle, as it comes upon or leaves the ferry, from separating the ferry from the abutments.

In addition to the shore anchor cables of the ferry, added security and rigidity is provided during the loading and unloading operations by firmly leashing the gunwales of the abutment ponton and the near ponton

1—Loading vehicle at near bank. Note ponton boat replacing the trestle in abutment span; the heavy lines to the shore, and lashings between boats used to hold the ferry securely against the abutment span during loading operations. 2—Leaving near bank. Note the four oarsmen used to maintain proper alignment of ferry during crossing. 3—Ferry in midstream. Pontons parallel to current. Four men propel ferry hand-over-hand on line at side of vehicle. 4—Unloading the vehicle at the far bank. Way planks were used to bridge a small gap between the flooring of the ferry and the abutment. Lieutenant Dice is shown supervising the unloading.

of the ferry, as shown in No. 2 of the accompanying photographs.

A deviation from normal erection of a ponton bridge may be observed in photograph No. 1 of the point of embarkation, and in photograph No. 4 of the debarkation operation.

The trestle normally used with the abutment span at embarkation was replaced by a ponton boat, and at debarkation a single ponton boat replaced the hinge span usually employed at a ferrying terminal.

An aid to the ferry crew in handling the cable, as shown in photograph No. 4, was the loose stringing of the anchor cable along which the ferry was pulled.

No difficulty in the operation was provided by the tire chains on the vehicle or by the extremely slippery condition of the flooring of the ferry and abutments, caused by the snow. Despite adverse weather conditions materials were assembled and the crossing was effected promptly and without difficulty.

In all cases where the stream has any depth and width, wheeled transport must depend upon existing bridges or upon means of crossing improvised and provided by the engineers. This demonstration of ferrying provides an example.

Ponton equipment is not organically a part of the cavalry division engineer squadron and must be drawn from Corps or Army. A foot bridge can be placed in position quickly and effectively by the engineers. The cavalry division engineers carry approximately 450 feet of this bridge.

By using this foot bridge in triple width, animals as well as men can be passed over. Naturally, when this is done the total effective length is reduced to 150 feet.

When it can be avoided, troops and animals should cross rivers without swimming to avoid any injurious effects to their health, and it is desirable to avoid the floating of equipment across a river because of the difficulty in its subsequent use.

In river crossings conducted under the difficulties of the winter season, the efficiency of the command is reduced in extremely cold temperatures.

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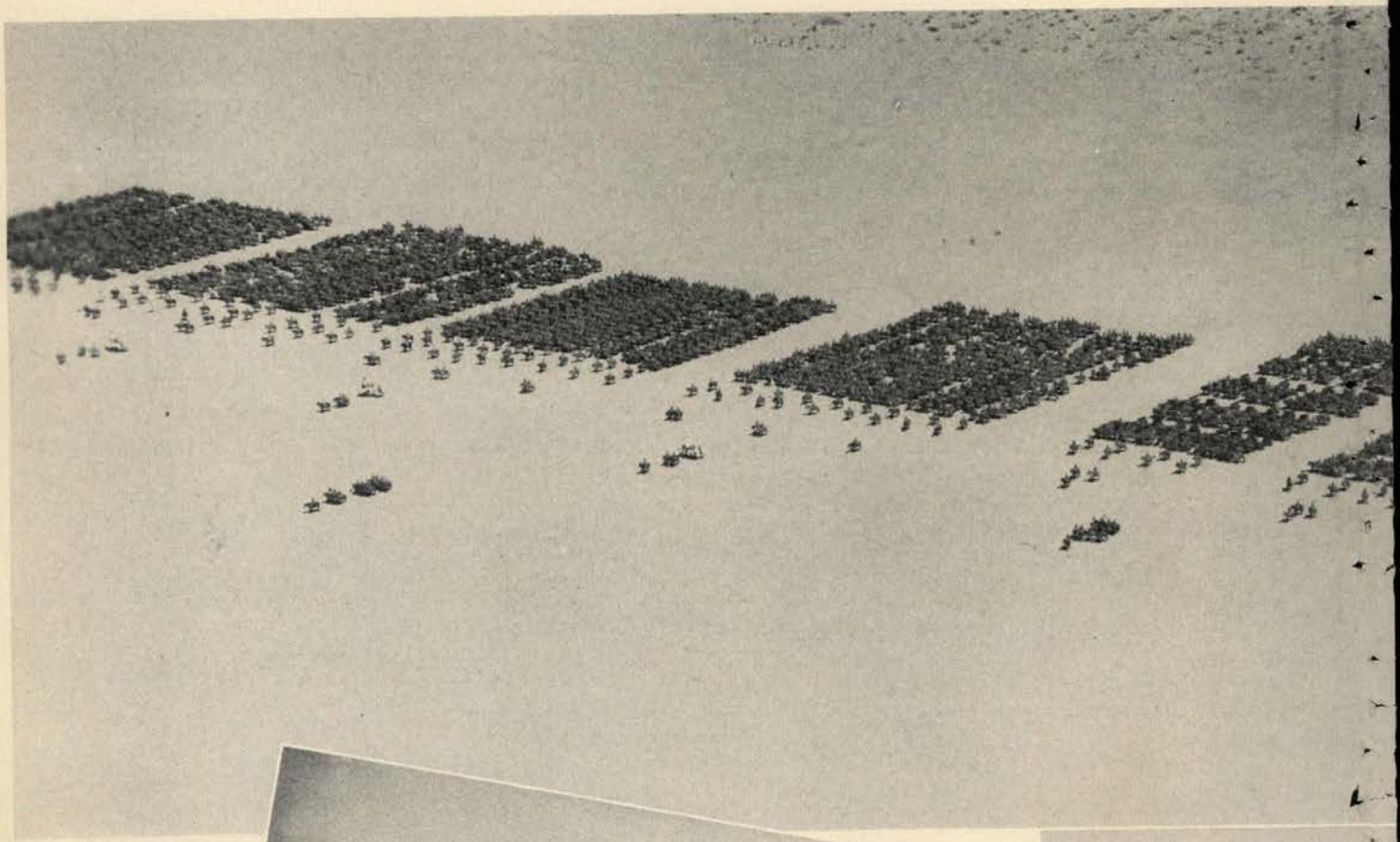
A well-established maxim of war is not to do anything which your enemy wishes—and for the single reason that he does so wish.

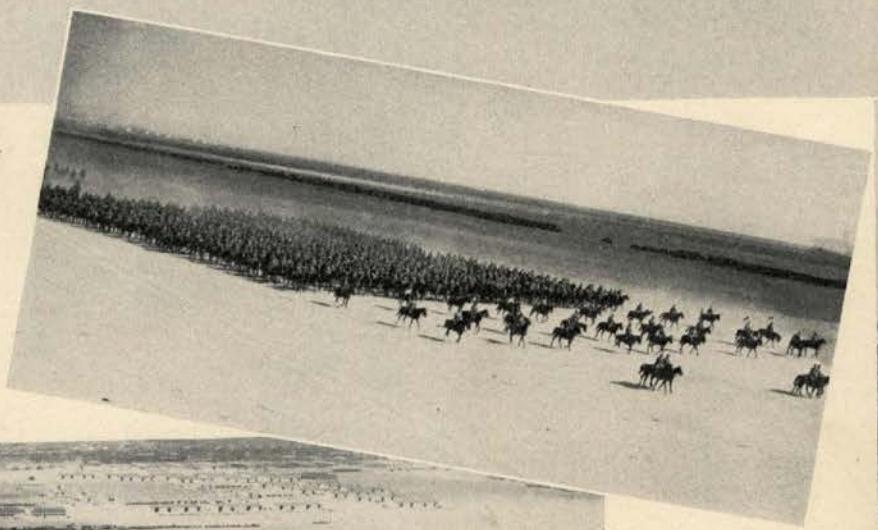
You should, therefore, avoid a field of battle which he has reconnoitered and studied. You should be still more careful to avoid one which he has fortified and where he has entrenched himself. A corollary of this principle is, never to attack in front of a position which admits of being turned.

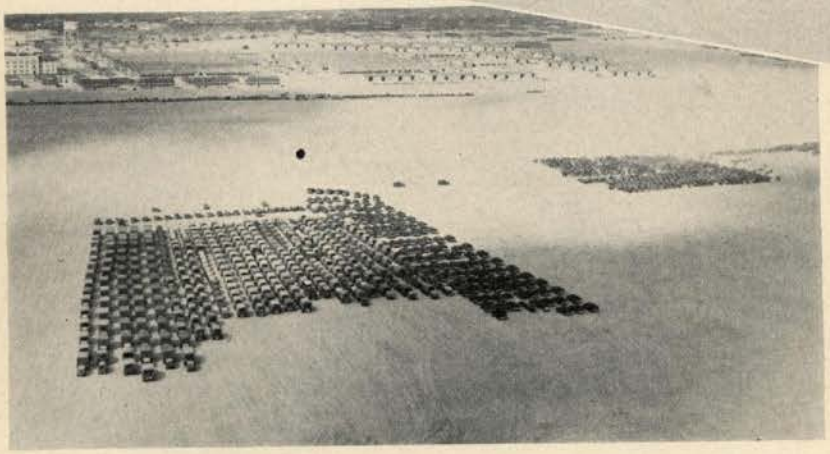
—*Military Maxims of Napoleon.*

THE 1st CAVALRY DIVIS

Celebrating its assembly at

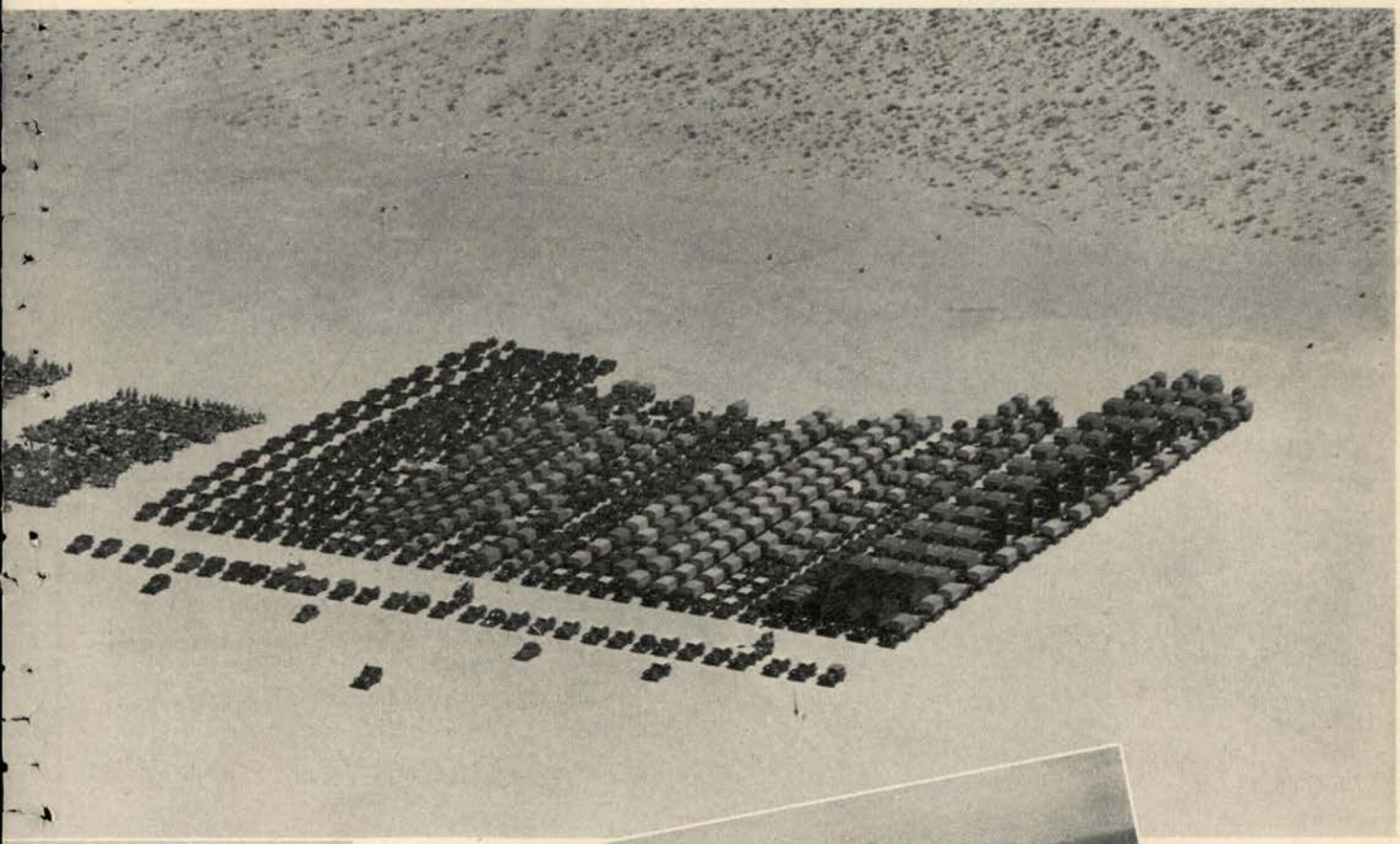


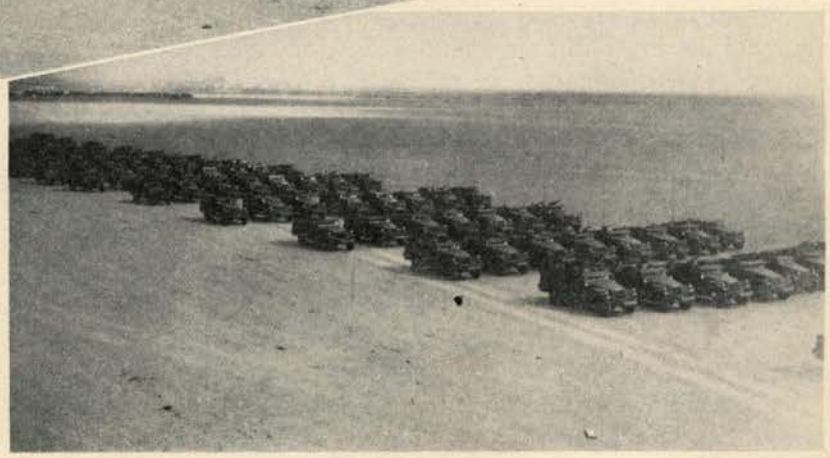




ON PASSES IN REVIEW

ort Bliss, Texas, in February





Signal Communications in the First Cavalry Division

By Lieutenant Colonel Norman L. Baldwin, Signal Corps

STONEWALL JACKSON WASHINGTON aged six and the color of weather beaten charcoal had been whisked up, whirled through the air along with the sideboards and scantling which had been his family home and been dropped in a thicket a half-mile away by a passing tornado. At Sunday school two days later he was much astonished to hear from his Sunday school teacher that "the Lord was with him all the time," and his only reply was, "Eff'en he wuz, he sho' wuz goin' some!"

The same might well be said of the job of furnishing dependable communications to the 1st Cavalry Division in the field. "Blitzkrieg" tactics have for years been the normal function of this highly mobile branch of the service and the only change has been that modern equipment has made the "blitz" faster, the "krieg" heavier and the intercommunication speedier and more dependable.

Radio and messenger communication channels have in the past carried the main traffic load in the Cavalry Division but during the last two years wire communication has become increasingly important and effective for three very definite reasons:

(1) Increased mobility and wider range of action have been provided by the many scout cars in the division and each scout car is provided with a comparatively powerful radio set. New organizational units have been set up for the division adding considerably to the fire power and each unit has been provided with radio communication. The net result (both literal and figurative) has been to complicate the difficulties normally encountered in radio operation within the division. Available frequency channels for the many activities of command, reconnaissance, spotting fire of the different units, etc., have become so congested that only a high degree of technical ability and radio net discipline will prevent a disastrous interference situation if too much traffic is handled by radio.

(2) All such divisional radio communication traffic is subject to interception by the enemy.

(3) With the advent of modern wire laying equipment mounted in sturdy, dependable 1½-ton 4 x 4 trucks, the use of telephone circuits and simplexed telegraph circuits to brigade and other subordinate headquarters (if acting as Division Reserve or on certain special missions) has relieved the division radio net of a tremendous volume of traffic.

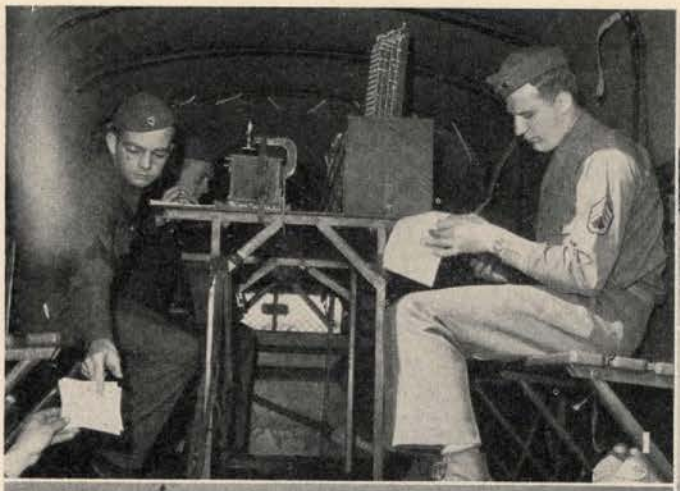
A wire team whose mission is to maintain wire communication between Division Headquarters and a Brigade Headquarters is beset with many difficulties. At times a Cavalry Brigade Headquarters is one of the fastest moving tactical headquarters imaginable and the wire crew must be "on the ball" every minute, especially if the brigade is the maneuvering force in an envelopment.

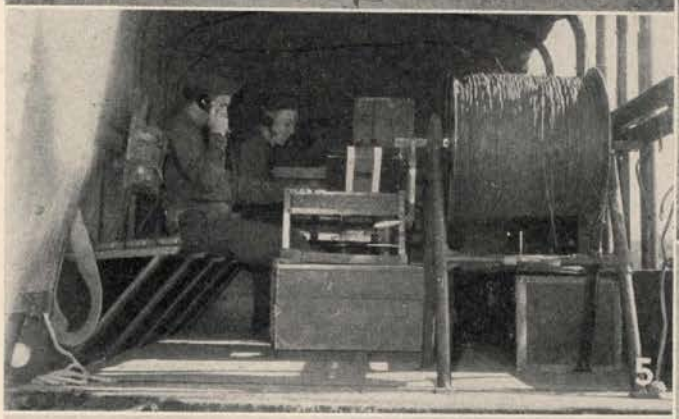
The Signal Troop

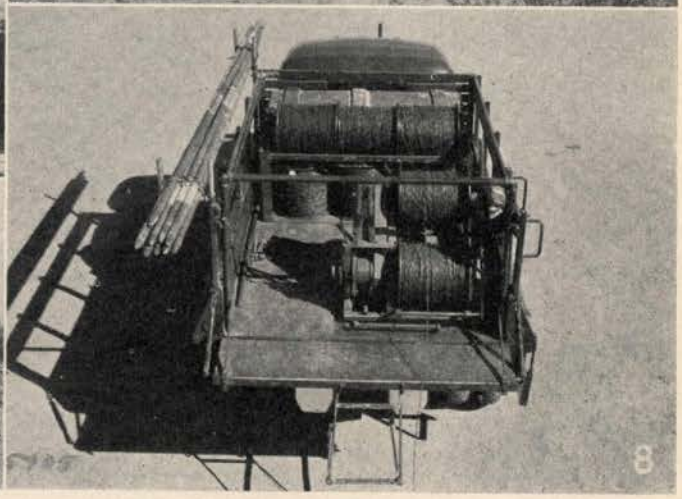
It might be well to explain the detailed breakdown of the wire personnel of the Signal Troop. The Wire Platoon is divided into two sections: The Operation Section and the Construction Section. Since the duties of the Operation Section are primarily to operate the wire system which the Construction Section installs, we will consider the operation of the latter section only. Although under the general supervision of the Wire Chief, the Construction Section is directly controlled by the Construction Chief, normally a Staff Sergeant. The section itself is divided into four wire crews each led by a sergeant "crew chief." The basic wire construction unit then comprises the crew chief and seven privates with their associated equipment. The crew chief with four privates (one of whom is the driver), lays all circuits using a 1½-ton 4 x 4 truck, equipped with the gasoline-driven wire-layer RL 26A and the other three men on a half-ton 4 x 4 pick-up truck "secure" the circuit and shoot trouble. The basic idea is that the 1½-ton truck crew gets the wire on the ground and the half-ton or "tender" crew follows along and makes all changes or repairs necessary to keep the circuit in operation.

Of the four wire crews, one is normally at the Rear Echelon of Division Headquarters, while the other three are with the Forward Echelon. Two of the three crews at the Forward Echelon are attached to brigades (one to each), and the third crew is held at the Division Command Post as an emergency crew, a relief crew and general trouble shooting crew which may be called upon to augment the initial wire installation.

Upon the success or failure of the system of communications employed, usually lies the success or failure of all military operations.







1—Interior of Message Center truck. Note time stamp and peg board above files. Peg board shows at a glance the status of the various communications agencies ("In" or "Out") radio, telegraph, telephone, etc., to the various other units. 2—Delivering radio messages on the move. 3—Simple overhead lance pole construction. The circuit itself is used as two of the four guy wires. 4—Switchboard truck. Note frame uprights which allow adequate clearance for overhead construction, the terminal strips are permanently cabled to the switch board. 5—Interior of Switchboard Truck showing BD 14 40-line switchboard and EE 65 Wire Chiefs test set. On floor in center foreground is 12-line BD 72 switchboard which is used outside the truck as a switching central. 6—Command Radio Car used by the First Signal Troop. These cars are equipped with 12-volt systems 180 ampere battery and heavy duty generators and are completely bonded and shielded. 7—Wire crew in action: Cavalry Pack Radio Set SCR 203 in background. 8—1½ Ton (4 x 4) Wire Layer.

We can visualize then, for example the wire crew attached to the 2d Brigade starting its initial installation. At the Division Command Post the crew chief gets his initial order to install a circuit from the Division Command Post to the 2d Brigade Command Post which will be in the vicinity of such and such coördinates. In addition, if the Command Post is to remain fixed for more than a few minutes, the wire circuit is to be simplexed for telegraph operation. (If the 2d Brigade Liaison Officer is present he checks the approximate location of his Brigade Command Post.)

The crew chief checks his map, his wire, and his crew and starts out. He checks each reel of wire for continuity as he lays it but concentrates on making a speedy installation, leaving it to his tender crew to "secure" the circuit: i.e., protect the circuit from mounted and motorized elements, get the circuit off the road, check and dress ties and splices, check clearances on overhead crossings, and otherwise insure that the circuit will remain in constant operation.

When the wire crew arrives at the Brigade Command Post, an EE8 telephone is placed at the terminus of the circuit, normally at the Command Post scout car and the circuit simplexed for telegraph operation. The crew chief reports back to Division immediately that the wire is in and working, and he is awaiting orders. Normal instructions in this division require that this crew remain at the Brigade Headquarters where it may advance the wire axis, retreat, or tie in on some commercial circuit. In other words the crew chief is then on his own to maintain wire communication from Brigade to Division Headquarters. In some cases an officer is sent with the wire crew to Brigade, in which case he automatically becomes "crew chief," or the Signal Troop "advance agent."

If there are any who doubt that wire communication can be satisfactorily maintained between a Cavalry Division Headquarters and Brigades, let it be mentioned here that during the Third Army Maneuvers in East Texas and Louisiana in 1940, during which the 1st Cavalry Division acted as an integral part of the VIII Corps, practically constant wire communication was maintained between Division and Brigades. Where the scout car can go, the 1½-ton 4 x 4 wire layer can go and does go, and there is no substitute for the person-to-person conversations between the Division Commander and the Brigade Commanders.

The simplexing of wire circuits between Division and Brigade Headquarters gives an additional channel of communication which, in the case of many types of tactical (and administrative) messages, is much more satisfactory than either radio or telephone. It is not necessary to encode messages to be sent over the simplexed TG 5-A telegraph circuit, and any radio operator can operate it, so the speed, accuracy and security of messages sent by telegraph are self-evident. Another advantage of simplex telegraph operation is that instead of having two separate telegraph sets, each simplexed on a brigade circuit, the Division telegraph set may be used as a "way station." With this type set-up, the telegraph set at Division is bridged across the switch board, still leaving a talking circuit to each brigade, and a message sent from any one of the three stations reaches both of the other stations. This means that information, requests for information, position reports, and orders which are sent between any two stations are transmitted automatically to the third station. The disadvantages of using a "way station" are that it cuts down on the volume of traffic which may be handled by simplex, and, in certain types of terrain where the resistance of the ground is great, a relatively high resistance to ground at either end station will render the whole telegraph system inoperative. In this division, ground stakes are driven at all three points as soon as the wire circuits are in so that division may operate the circuits to brigades (and to Divisional Artillery) either as individual direct circuits or as a three station loop depending upon the requirements of the situation and the technical difficulties mentioned.

To round out the picture there are 48, SCR 194, "Walkie Talkie" radio sets authorized in the three battalions constituting the 1st Cavalry Division Artillery. Characteristics and functioning of these sets are well known and need no description in this article. Twenty of these sets have been in the hands of the former two battalion artillery regiment which has just lately been superseded by the three battalion divisional artillery organization. The addition of an Antitank troop for the division and a Weapons Troop for each of the brigades adds fifteen more SCR 245 radio sets to bring the total of radio sets of the division to 211.

Technical requirements and operational records in the matter of unit message center operation have been streamlined to the maximum consistent with efficient operation. Air-ground communication by panels, "pick-up" messages and radio are orthodox but mounted and motorcycle messengers are taught the elements of battle reconnaissance in order to augment their effectiveness and efficiency as communication and intelligence personnel.

With an organization such as the 1st Cavalry Division, fundamentally capable of greatly increased fire power coupled with the ability to feint, weave, dodge and strike, the proper solution to the problem of establishing and maintaining efficient coördination of all the means of communication now available between the various elements has become more than ever of para mount importance.

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MEDICAL SERVICE
In First Cavalry Division

By Lieutenant Colonel Charles W. Riley, M.C.
and
Lieutenant Colonel Adam G. Heilman, M.C.

THE Medical Service of the Division is divided primarily into two groups. The first group consists of the Medical Detachments of the regiments and smaller units. The second group is composed of the 1st Medical Squadron. These two groups form the Hospitalization-Evacuation system within the division, from the front line to the divisional rear boundary.

Regimental Detachments

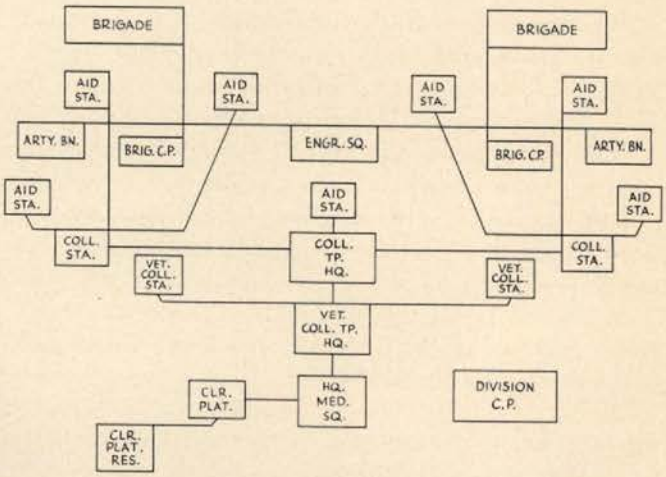
All regiments of the division and many of the smaller units are provided with medical detachments. These detachments furnish medical, dental, and veterinary service to their organizations on the march, in camp, and in combat. When troops go into action the detachments accompany them, furnishing first aid and establishing aid stations for men and animals. Cavalry moves rapidly and covers wide areas, so that the problem of keeping in contact with the troops at all times is a very difficult one. In order to best accomplish this, most of the men of the detachments are mounted.

The Medical Squadron

The Medical Squadron is a divisional unit and is responsible for the evacuation of wounded men and animals from the Aid Stations to the Clearing Station and for their care and treatment during this period. From the Clearing Station to the rear, the transportation and care of the sick and wounded is a responsibility of the Corps or Army. The collection and evacuation of men and animals in a cavalry division offers, it is believed, some peculiar and difficult problems. Cavalry moves rapidly for fairly long distances over diversified terrain and under all weather conditions. On reconnaissance, wide enveloping movements, and in combat the troops may scatter over wide areas. Horse cavalry is not "grounded" due to poor roads, unfavorable terrain, such as streams and woods, or adverse weather conditions. In fact, under such adverse conditions of terrain and weather, the horse shows its greatest value. The Medical Squadron is motorized except for a part of the Veterinary Troop, so that the difficulties in carrying out its mission effectively (i.e. the maintenance of communications and contact and the collection and evacuation of patients) can readily be visualized. Units of the Squadron must be organized and trained so that they are able to move quickly at all times and under any conditions developed by the tactical situation.

The Medical Squadron consists of the Headquarters and Headquarters detachment, the Collecting Troop, the Clearing Troop, and the Veterinary Troop.

Squadron aid station.



Communications

The Medical Squadron is not authorized radio or telephone equipment. It must therefore depend on more primitive methods of communication. One of the greatest problems that it has to overcome is the maintenance of contact between the aid stations and the most advanced echelon of the squadron, the collecting station. It is vital to maintain this contact at all times, as

the knowledge of the movements and location of the aid stations is an absolute necessity in planning and carrying out their evacuation. Several methods of keeping contact are employed. Distances are usually too great for dismounted contact agents to be of value and the Collecting Troop has no horses. However, the Veterinary Collecting Stations are usually established in the same area as the collecting stations for men, and mounted contact agents sent forward with the regiments by the Veterinary Troop can also bring back information for the collection station. Contact agents are normally sent forward with the regiments on motorcycles, and this is practicable except in very rough country, where streams are to be crossed and heavy woods transversed. Every advantage is, of course, taken of the divisional communications network, in relaying messages between aid stations and the collecting station, or between the collecting stations and the squadron headquarters or other elements to the rear. In order to follow the movements of the troops more easily and facilitate the keeping up of contact between the various echelons of the medical chain, it is very important that commanding officers of the various medical units be thoroughly conversant with the tactical plans. Continuous contact between the division command post and the squadron headquarters is maintained through a medical liaison officer, kept at the division command post during combat conditions.

Squadron Headquarters and Headquarters Detachment

This unit carries on the administrative and supply functions for the squadron and coördinates all matters pertaining to it. The Supply Officer has very important functions to perform, as he is not only the unit supply officer, but the medical supply officer for the whole Cavalry Division. As such, he obtains medical supplies from the Corps or Army and distributes them to the units as they are needed. During combat conditions the Squadron Headquarters is often established in the vicinity of the clearing station, as this has been found to be a convenient place from which to coördinate the work. Telephone communications with the division forward and rear echelons are usually available here. All plans for medical service of the division, and movements and location of various elements are coördinated and approved by the Division G-4 before being issued.

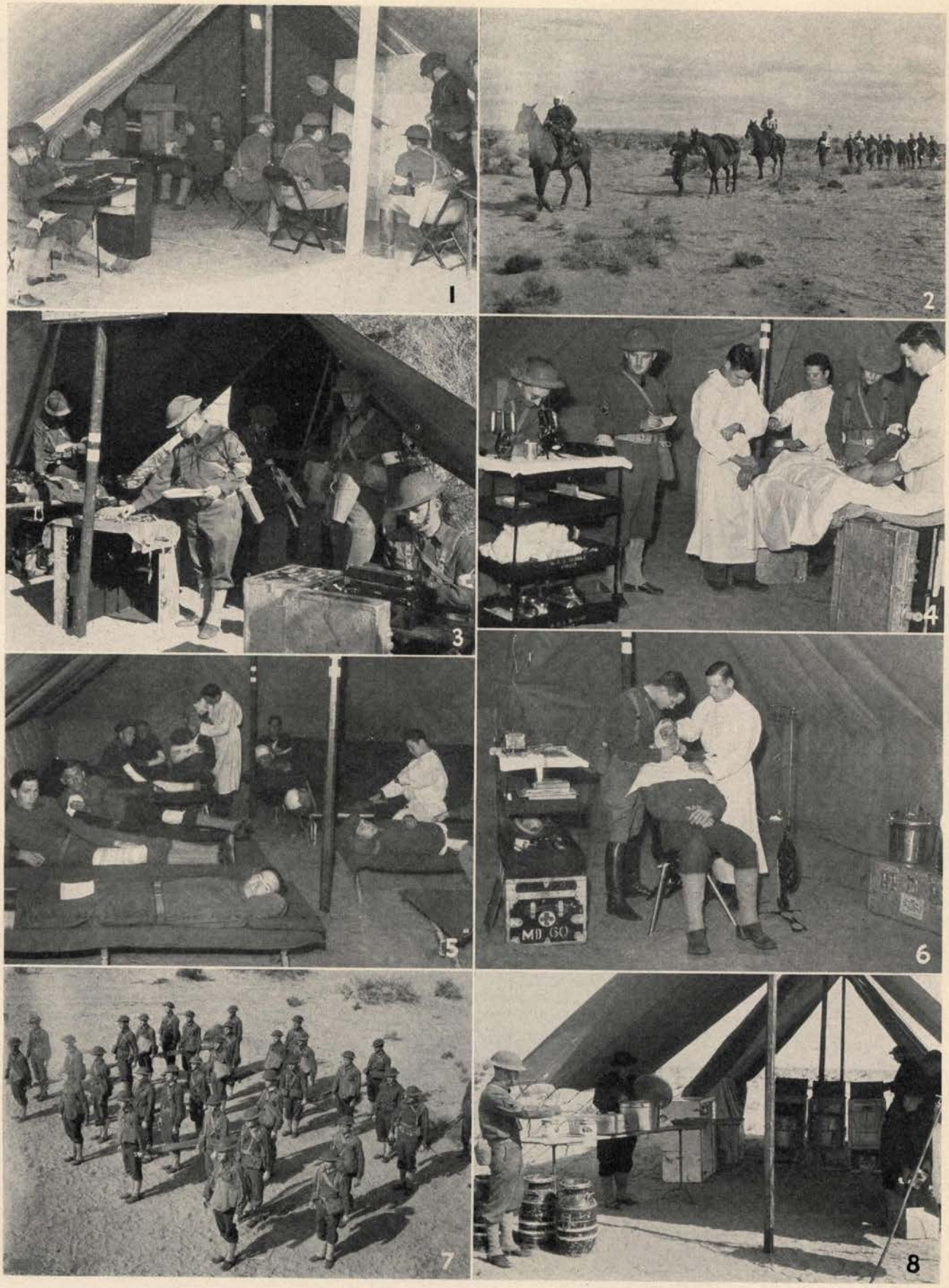
Evacuating collecting station.

During combat such approval is usually oral in character and is transmitted to subordinates in brief messages or orally.

An efficient system includes temporary treatment on the battlefield and the transport of serious cases to the rear.

Collecting Troop

This troop is organized into a troop headquarters and two collecting platoons. Each of these platoons is further sub-divided into a station section, a bearer section, and an ambulance section. With this organization the troop may readily function with a platoon attached to each of the cavalry brigades. In combat the Collecting Troop follows the troops into action. In this division it has been found practicable and convenient to attach a platoon to each brigade, these being under the control of brigade commanders during advances and until contact with the enemy is made. At this time they revert to the direct control of the squadron commander as approved by the division G-4. The plan outlined above leads to some loss of control of these elements by the squadron commander, during marches and advances in the face of the enemy, but has some decided advantages as learned by experience during the past year. While advancing into combat, contact agents are sent forward to keep in touch with the regimental detachments and so are able to inform the Commanding Officer of the Collecting Troop of the progress of events and especially of the location of aid stations, when established, and the number of wounded to be expected. As indicated by the situation, collecting stations are established, usually one in the rear of each brigade. Theoretically the sites are chosen beforehand and approved by G-4, but this procedure has not been found practicable in this division, and usually the time and place of location is left to the unit commander. As soon as the stations are established, immediate notice is sent to the squadron commander giving hour of opening and location. Subsequent sites in advances or withdrawals may be chosen by the squadron commander or left to the unit commander. The collecting stations are as far forward as circumstances permit, up to within 1,000-1,200 yards of the front lines. Litter bearers are sent forward to the aid stations and patients brought back to the collecting station. Any horses of wounded men which are available are used for transporting patients. It may be possible at times to run an ambulance forward of the collecting station, perhaps even as far as an aid station, but probably very seldom, except at night. At the collecting station such emergency treatment is given as is necessary to keep the patient in the best possible condition for further evacuation. Evacuation is accomplished as



1—Squadron headquarters. 2—Casualties arriving. 3—Treating casualties. 4—Operating. 5—Surgical shock. 6—Dental. 7—Litter section. 8—Kitchen.

Air view of clearing station.

rapidly as possible and the sorting begun at the aid station is continued. From the collecting station patients are evacuated by ambulance to the clearing station. With two stations or collecting points operating the Commanding Officer of the Collecting Troop has to coordinate the work, assigning the ambulances to one or the other platoon as the circumstances demand. On marches ambulances and personnel of the Collecting Troop are used to establish March Collecting Points, where patients are collected and subsequently evacuated.

Clearing Troop

This troop, formerly called the Hospital Troop, is organized into a troop headquarters and two clearing platoons. Each platoon is so organized that it can function separately, being able to maintain itself and to operate a hospital of 100 beds. In practice only one platoon or one half of the station is usually established at a time. The other half is held packed up in a position of readiness. Thus it can be moved forward in an advance or to the rear in a withdrawal, without disturbing the functioning half. When a new station has been established, the other packs up and follows. Continuous service is given by this method. In selecting the site for a clearing station the same factors must be kept in mind as for other units. Good roads are even more important, and protection from air observation more difficult to obtain. The usual distance behind the front is 4-7 miles. The clearing station is better equipped to treat casualties than any unit discussed previously. However, even here, during combat conditions, the treatment given is strictly of an emergency type. Wounded coming in are carefully inspected and records (The Emergency Medical Tag) checked. Dressings are renewed if necessary, splints readjusted, shock treated, tetanus antitoxin administered and any drugs or other treatment given to make the patient more comfortable and to keep him evacuable. A certain number of patients will be received who are classified as non-transportables. These must be held temporarily and will be discussed later, but all others should be evacuated as rapidly as possible. The first principle of the divisional medical service is that all units should be mobile at all times and be able to follow the division wherever it goes. They must not be immobilized by casualties. Sorting, which has been mentioned in connection with

1—Treating animals, collecting station. 2—Loading animal casualties. 3—Veterinary collecting station.

forward echelons, becomes very important here. The strength of the division must be conserved by every means. Many slightly wounded, malingerers, and slightly sick and gassed will come to the clearing station and every effort is made to separate them from those requiring further evacuation. The clearing station is evacuated by ambulances from the Army or from the Corps if an independent Corps is functioning. During rest periods and in bivouac areas the clearing station operates as a camp hospital and sick and injured of a mild type are treated for several days at a time, thus keeping them within the division.

Veterinary Troop

This troop is organized into a troop headquarters, two collecting platoons and a clearing platoon. The functions and location of stations of this troop are similar to those described for the collecting troop. In fact, these two troops function together, although under separate commands. The Collecting Station and the Veterinary Collecting Stations are usually established in close proximity.

In the matter of contact and communications they assist each other. Animals are collected in the regiments, brought to the aid stations, and from there evacuated to the collecting stations by personnel of the Veterinary Troop. Lead lines or trailer ambulances are used. Here sorting and treatment take place and animals are prepared for further evacuation. The more seriously injured are destroyed wherever they are found. The Veterinary Troop differs in one respect from the Collecting Troop, in that the clearing platoon furnishes temporary hospitalization for animals. It therefore combines the 2nd and 3rd echelons of the evacuation system.

Division Surgeon's Office

This is not an integral part of the Medical Squadron, but since the Division Surgeon is also the Commanding Officer of the Squadron there is a very close connection and coördination between the two. This office is normally a part of the division rear echelon and is often established there during combat. It has been found convenient and satisfactory in many instances, however, to establish it in the vicinity of the clearing station.

In his capacity as Commanding Officer of the Medical Squadron it is necessary for the Division Surgeon during combat to be in very close touch with the tactical situation and he should visit all forward units of the evacuation chain frequently. At other times it has been found that it is possible to keep in closer touch with the progress of events at the division forward echelon than at any other place. Here close contact with the division G-4 can be maintained. At all times during combat, a medical officer is kept at the forward echelon. The Division Veterinarian has the same responsibilities in the care and treatment of animals as the Division Surgeon has for men. He spends much time in personally inspecting the animal evacuation system, and the care of animals during marches and in bivouac.

Reinforcing Service

During combat, casualties may become so heavy that the division evacuation service is unable to handle them. Under such circumstances the Division Surgeon calls on the Army Surgeon, or the Corps Surgeon in a separate Corps, for assistance. He may ask for additional ambulances, litter bearers or even hospital facilities. Such reinforcing troops are taken from an Army Medical Regiment and dispatched to the place where they are needed. When such assistance is called for the request should normally go through the Division G-4 and the Army G-4. In serious emergencies, or when communications are not working, it is desirable to get such requests through by the most direct route or method.

Non-transportable wounded: head injuries, sucking chest wounds, severe abdominal wounds or any wounded showing marked shock are always a problem. They cannot be kept in the clearing station as this must be kept mobile at all times. The procedure outlined above will therefore be followed. Hospital facilities from an Army Medical Regiment may be sent or under certain conditions a Surgical Hospital may be used. This latter is a rather elaborately equipped organization and capable of giving any kind of definite treatment.

Conclusion

The 1st Medical Squadron has been in existence since 1925, but until recently only in a fragmentary form. In its present form it has been organized for less than a year and is still lacking some personnel and transportation. Nevertheless, during the past year it has been possible to test it on three maneuvers of a month or more under simulated combat conditions, and on innumerable shorter exercises. In its present form, it is believed that it is well organized and equipped to carry on the medical service of a cavalry division. It is realized that this is the only unit of its kind functioning with the field forces and that at the present time changes are taking place very rapidly. There is no basis for comparison. However, it is believed that this is a well balanced and workable unit, capable of carrying on under average conditions.

In the words of its motto the 1st Medical Squadron is "STANDING BY."

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Viewpoint of the Division Quartermaster

By Lieutenant Colonel C. C. Strawn (Cavalry), 2.M.C.

RECENT press dispatches state that Britain's historic offensive in Northern Africa hinged on the question of a few days' supplies. The British forces which opened the drive with an attack on Sidi Barrani were issued five days' supplies. Had the Italians held out a day or two longer than they did, the British might have been compelled to withdraw to their Marsah Matruh defense line. How often during the course of military history has this been true—that the success or failure of a military venture has depended upon a few days' supplies. And how often on maneuvers have we seen the supply phases of the situation either disregarded completely or touched upon lightly. Now that we are faced with an emergency, where the old axiom of the map problem room, "Class I supply—automatic," may not hold true, it behooves all of us to become supply minded, at least to the extent that we are familiar with the possibilities and limitations of the supply and evacuation facilities of our own Cavalry Division.

It has been said that the principles of supply and evacuation in the Cavalry Division are the same as in the Infantry Division. This may be true, but due to the difference in the types of transportation employed, the great mobility of Cavalry, the problem of forage supply, and the ever increasing problem of gasoline supply, the application of these principles must of necessity differ.

First I wish to point to the complete reorganization, modernization, and streamlining of the horse cavalry division. It now consists of two powerful combat teams, *i.e.*, two brigades, each with its supporting battalion of 75-mm. howitzers (horse) which combined with the battalion of 105's (motorized), the Mechanized Reconnaissance Squadron, the motorized division Antitank Troop, and other auxiliary troops and services constitute a powerful striking force, endowed with great fire power and increased mobility.

Paralleling the modernization of the combat elements of the Division, the organization and equipment of the supply and evacuation services have proceeded with the idea of augmenting the mobility and increasing the flexibility of the combat elements by providing them with the munitions of war at the time, the place and in the quantity needed.

The supply and evacuation services of the cavalry division consist of an engineer squadron, a medical squadron, a quartermaster squadron, a signal troop, and an ordnance company.

General Data—The size of the quartermaster squadron, in the horse cavalry division, has been materially increased in order to keep pace with the increase in firepower, and the general expansion in man, animal and vehicular strength. Let me present you with a few general facts and figures which may give you some idea of the problem involved and the means we have for solving it. The vehicles of the Quartermaster Squadron have a total cargo capacity of 354 tons, exclusive of those hauling squadron administrative supplies, maintenance supplies and spare motor parts. The pack train can carry 20 tons, making a total of 374 tons of cargo, exclusive of gasoline. In addition the squadron has ten gasoline tank trucks, capacity 750 gallons each, and 400 ten gallon drums of gasoline carried on any available cargo transportation, making a total of 11,500 gallons of gasoline reserve. The prescribed loads including 1 day's reserve ration, 1 day's grain, small arms and artillery ammunition, and gasoline in drums equal 197 tons or a surplus capacity over prescribed loads of 177 tons. The daily Class I and Class III supplies for the division weigh over 116 tons. For one cavalry regiment the weight of these supplies is over 14 tons. I might mention here also that there are 1,313 gas consuming vehicles in the division with a total tank capacity of 26,375 gallons. The daily average consumption of gas in combat for the entire division should be approximately 10,000 gallons. Further, I might add that in the Quartermaster Squadron alone there are 170 gas consuming vehicles and 62 one-ton trailers. Closed up on the road almost bumper to bumper this squadron in column of vehicles is 1.2 miles long and proceeding along the highway in convoy formation with only 50 yards distance between vehicles it is 6 miles long. The new tables of organization provide sufficient transportation (96 trucks combination animal and cargo) to enable the squadron, under favorable conditions, to transport a reinforced horse squadron complete with men, animals, arms, equipment, food, grain and gasoline a sufficient distance to meet the requirements of any probable tactical situation where firepower has to be moved quickly from one portion of the battlefield to another, or where under cover of darkness it might be possible to move a unit some distance and arrive on the

flank or rear of an enemy in time to completely surprise him at dawn. Further, this procedure would provide for men and animals arriving at the jump-off in a comparatively fresh condition after moving considerable distances.

Cargo capacities and Prescribed Loads, Quartermaster Squadron, Cavalry Division (Horse)
T.O. -10-115, Nov. 1, 1940

CARGO CAPACITY:

2 Quartermaster troops (truck)		
(*a*) 48 trucks, 4 -ton (combination animal & cargo)	354	tons
48 trucks, 2½-ton (combination animal & cargo)		
42 trailers,1 -ton, cargo		
1 Quartermaster troop (pack)	20	tons
(*b*) 10 trucks, 2½-ton, gasoline tankers (7,500 gals.)		
Total (7,500 gals.)	374	tons

PRESCRIBED LOADS:

1 day's reserve ration	35	tons
1 day's grain ration	40	tons
Small arms ammunition	79.5	
Artillery ammunition	26.5	
Gasoline (7,500 gals.)		
(*c*) carried in 10-gal. containers (4,000 gals.)	16.0	
Total (11,500 gals.)	197	tons
SURPLUS CAPACITY OVER PRESCRIBED LOADS	177	tons

NOTE.—(*a*) Capable of transporting one reinforced squadron cavalry complete with men, animals, equipment, and one day Class I, III, and V.
(*b*) In addition to trucks for general cargo purposes.
(*c*) Carried on any available cargo transportation.

Cavalry Division (Horse)
Class I and III (1 day)

	(*a*)		
	Rations @ 6 lbs. per man = 11676 X 6 =	35	tons
I.	(*b*)		
	Grain @ 10 lbs. per animal = 7994 X 10 =	40	tons
		75	tons
	(*c*)		
	Gasoline, for vehicles 1313 X 7.3 gals. = 9,585 gals.	38.4	tons
III.	(*d*)		
	Gasoline, for kitchens 77 X 10 gals. = 770 gals.	3	tons
	Total	41.4	
	GRAND TOTAL	116.4	tons

NOTE.—(*a*) Total officers and men 11,676.
(*b*) Total animals 7,994.
(*c*) Total gas consuming vehicles = 1,313, average daily consumption per vehicle 7.3 gallons.
(*d*) Total messes = 77 @ 10 gallons per mess per day.

In order to provide transportation for such a move as this, however, the squadron would have to dump its service load of ammunition and Class I supplies. Further, it would be necessary to borrow sufficient transportation from the units of the division to provide for the regular delivery of the supplies of food, gasoline and ammunition. Therefore, in planning such a move a careful estimate of the entire supply situation must be made in order not to so deplete the amount of cargo transportation in the division as to cause a complete breakdown of supply.

With this general statement of facts we will now go into the more detailed operation of quartermaster activities in the Division.

QUARTERMASTER SERVICE IN CAVALRY DIVISION (HORSE)

The quartermaster service of the cavalry division (horse) performs the normal quartermaster service activities pertaining to any similar unit. In order to carry out these functions the Quartermaster Squadron, Cavalry Division (horse) has been organized. This organization will be discussed in more detail later.

The squadron headquarters consists of a lieutenant colonel, commanding, and five other officers, who form the nucleus for the staffs of both the squadron and division quartermaster. The lieutenant colonel commanding this squadron acts in the dual capacity as an organization commander and as a member of the division special staff. As the commander of the squadron he is charged with the duties and responsibilities of a commanding officer and therefore is responsible for the efficient operation of the Quartermaster Squadron. As a special staff officer he is advisor to the division commander and his general and special staff on Quartermaster Corps matters, including recommendations for Quartermaster activities and installations. He supervises all quartermaster activities throughout the division and is responsible for the efficient operation of the entire quartermaster service of the division, and all attached quartermaster units. All quartermaster activities and operations are under the direct supervision of the supply section of the general staff (G-4). The division quartermaster must work in close coöperation and harmony with the other members of the special staff and all sections of the general staff and commanders of all subordinate units. The division quartermaster's relations with the commanders of subordinate units are those of a special staff officer of a higher unit commander. He exercises none of his command functions in such dealings. As a special staff officer he has authority to call on unit supply officers for such technical reports as may be necessary in supervising the quartermaster activities in the division.

The division quartermaster must keep himself constantly informed as to the status of supply and transportation in the division and be prepared to advise G-4 and the division commander regarding same at any moment. He must keep fully informed of the tactical situation and make plans and preparations in advance so that no time is lost when he is called upon to submit recommendations as to quartermaster activities.

An operations map should be kept in the office of the division quartermaster and it should be kept posted to date showing the location of all units in the division and all possible information (a knowledge of which might facilitate the supply of the units of the division). All officers in the quartermaster squadron should be required to keep themselves posted regarding the tactical situation and the location of all units and installations. They should be required to consult the operations map frequently and keep thoroughly posted regarding the supply situation.

In order for the division quartermaster's office to keep constantly in touch with the tactical situation, and in order that G-4 can maintain liaison and be fully informed regarding the activities of the quartermaster squadron it has been found necessary for the division quartermaster or a representative to remain forward with G-4 during periods of active operations.

Division Quartermaster's Office

The division quartermaster's office should be divided into three divisions: administrative, supply and transportation. The senior major of the squadron acts as squadron executive, second in command, and assistant division quartermaster. He exercises general supervision over all activities of the quartermaster's office. In actual operations the quartermaster will frequently be toward the front in the forward echelon where he can contact and confer with G-4. During such periods the squadron executive is in active command of the squadron and must act for the division quartermaster in all matters pertaining to this activity.

The administrative division operates under the squadron adjutant, who combines the activity with his duties as a squadron staff officer. This division maintains an office of record and performs such other administrative duties as are assigned to it.

The supply officer, who is a major or a captain from squadron headquarters, operates the supply division of the office, which handles all classes of supply and salvage matters.

The transportation officer from the squadron headquarters, who also is a major, operates the transportation division of the division quartermaster's office. He is assisted by the commanders of the truck troops and by the commander of the maintenance troop. The commanding officer of the light maintenance troop is division motor maintenance officer. The transportation officer is also division motor officer.

The relationship existing between the heads of these three divisions and the division quartermaster is that of a staff officer to his commanding officer. These officers make such reconnaissances as are necessary and after thorough estimates of the supply situation, submit recommendations to the division quartermaster concerning the work of their divisions. After thorough study and necessary modification, these recommendations are usually transmitted to the division commander as the Division Quartermaster's recommendations, for which he assumes full responsibility. The office of the division quartermaster will usually be located at or near the rear echelon of division headquarters because the offices pertaining to administrative, supply, evacuation and welfare activities of the division are housed there. Whenever possible, the division quartermaster's office and the command post of the squadron should be grouped together inasmuch as all of the staff officers of the squadron perform both squadron and divisional quartermaster staff duties.

Squadron Organization

The quartermaster squadron in the horse cavalry division now consists of a headquarters troop, a light maintenance troop, two truck troops, and a pack troop.

The headquarters troop of the quartermaster squadron, is, in addition to furnishing detachments for squadron headquarters and the division quartermaster's office, divided into a troop headquarters, a gas supply section and a service section. The gas supply section is charged with the operation of the gas supply points in the division and provides drivers for the ten gasoline tank trucks of the squadron. The service section furnishes the necessary labor for operating the division supply points and forms the nucleus of the division labor pool.

The light maintenance troop is organized to furnish the necessary maintenance and repair for quartermaster motor vehicles of the division to include the 3d echelon of maintenance. During protracted and severe operations, this troop will have to be reinforced by Corps or Army maintenance units for it does not have the capacity under such conditions to maintain all the vehicles in the division. It is organized into a troop headquarters, a supply platoon and two maintenance platoons. The maintenance platoons are capable of operating one mobile repair shop each. There is a wrecker section containing one 4-ton wrecker and one 2½-ton wrecker in each maintenance platoon. Those vehicles which cannot be repaired promptly by the combat units will be evacuated to the division repair shops by the wrecker sections of the maintenance troop. The quartermaster squadron may replace temporarily, vehicles of combat units which have been turned in to the quartermaster squadron for repairs and those vehicles which have been destroyed.

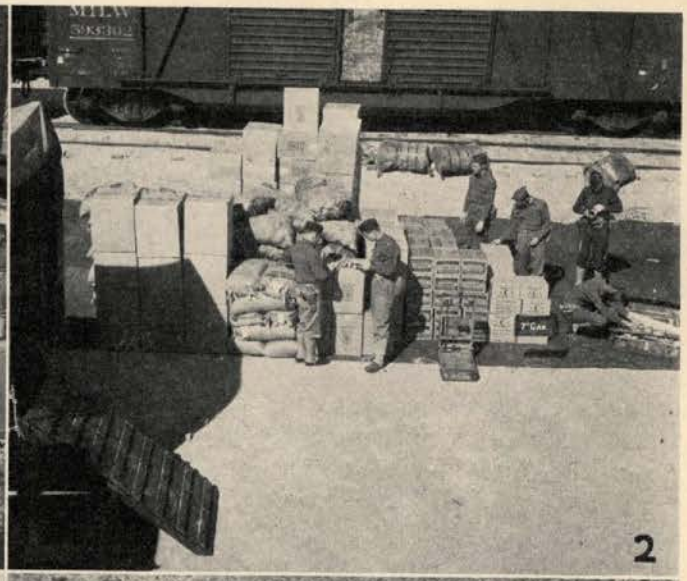
One of the truck troops is equipped with 48 4-ton trucks, semitrailer (combination animal and cargo carrier bodies), and the other truck troop has 48 2½-ton trucks, stock rack, also capable of carrying both animals and cargo. The two truck troops provide the necessary means for transporting such reserves as may be authorized by the division commander, furnish transportation for troops and supplies whenever required, provide a source of replacement vehicles when needed by the troops and form a nucleus for a division motor pool. Each troop is divided into two platoons; there are two sections in each platoon, with 12 trucks in each section.

The pack troop consists entirely of animal transportation. It has 4 bell horses, 5 riding horses, 217 pack mules and 77 riding mules. It is divided into 4 platoons and is capable of carrying 20 tons of cargo over terrain impassable by motor transport. It can keep up with the horse cavalry moving at normal gaits.

Operations of the Quartermaster Squadron

Before discussing operations, it might be well to restate a few basic principles:

First:—"The impetus of supply comes from the rear



1—Part of service section Headquarters Troop, 16th QM Squadron sorting and loading Class I supplies at 1st Cavalry Division railhead. 2—Class I supplies for 7th Cavalry at railhead. Forage has not been unloaded. Class I supplies for this regiment will weigh over fourteen tons. 3—Guides getting their instructions at Class I control station. One unit train about to move out. Commander in motor cycle sidecar, messenger on solo. 4—Pack Troop, 16th QM Squadron, 1st Cavalry Division, unloading from trailers preparatory to transporting ammunition over terrain impassable by motor vehicles. 5—Gas section of service platoon, Headquarters Troop filling ten gallon drums by means of "Milker" attached to tank truck. 6—Troop C, 16th QM Squadron, Light Maintenance, replacing engine in vehicle in the field.

and is applied through all echelons down to include the front line units." It should be the recognized duty of each echelon of supply to deliver supplies to the area of the next lower echelon and this system should be modified only when the tactical situation requires a departure therefrom. This principle is based upon the precept that battle commanders should be relieved of all anxiety concerning questions of supply other than making their wants known.

Second:—Supply operations for all classes of supply are conducted by either regimental or divisional transportation moving from army supply points to the using troops, and such supplies are not normally transferred to other trucks or placed in dumps, from the time they are received at army supply points until they are delivered to the using troops. Neither should the troops be burdened with a greater quantity of supplies than is necessary for their well-being.

The division commander, through his subordinates, must insure that the requirements placed on the subordinate units for the utilization of their transportation in effecting supply are not excessive. In order to arrive at a decision regarding the matter he must evaluate the tactical situation, the reserves to be carried, the probable expenditure rate, the distance involved, the routes available, and the restrictions imposed by higher authority, and the terrain. The quantity and type of rations to be carried by individuals and on unit and divisional trains as a prescribed load is announced from time to time by the division commander. The following factors will influence his decision: "Probability of combat, distance to army supply points, defiles, amount of transportation available, character and condition of road net, danger of hostile air and mechanized attack, and the probable relative urgency of Class I supply versus other supplies."

The division quartermaster should constantly anticipate the needs of the front line troops. His actual responsibility begins with the transmission of the requisition or daily telegram and is continuous until the supplies are delivered to each regimental or similar unit of the division. In general, the quartermaster should make distribution of all supplies whenever the situation permits. The daily telegram is based upon the strength returns of the division. It is prepared by the division quartermaster and forwarded to the army quartermaster, who consolidates the daily telegrams of all units and transmits this consolidated daily telegram to the regulating officer. The regulating officer ships the supplies directly to the division railhead or truckhead.

Standing operating procedure in the 1st Cavalry Division covers the handling of Class I distribution very well by enumerating all methods and combinations of methods and designating in orders the one which best fits the tactical situation. These methods are designated as methods A, B, C, etc. At times unit transportation comes to the railhead for rations, and the grain and hay is loaded and transported in divisional trucks. Some units such as the services and others who may be close to the supply point habitually use railhead distribution, thereby freeing divisional transportation in supplying front line units. The 1st Cavalry Division has been very successful in the distribution of Class I supplies by establishing at or near the railhead or distributing point a Class I control station and by the habitual use of guides furnished by the units to be supplied. The guides report to the officer in charge of the Class I control station where they receive their instructions. It is the responsibility of the guide to lead the train to the bivouac of his unit.

Since the gas consuming vehicles of the division have increased so greatly, one of the more important duties of the division quartermaster is to supply the division with gasoline and oil. However, with the ten tank trucks now furnished the quartermaster squadron, plus its 400 ten-gallon drums and the liberal allowance of drums to be carried by the combat elements of the division, it should not be difficult to work out a scheme of supply whereby empty drums in the units can be replaced promptly with full ones by the division quartermaster. Of course the reconnaissance squadron with its 225 gas consuming vehicles will present a special problem. Normally this squadron will be out in front a comparatively great distance and probably widely dispersed. Nevertheless, with sufficient planning and ingenuity this unit can be supplied. Special gas distributing points will have to be established for them. The division quartermaster should dispatch a sufficient number of filled drums and portable gassing units to these points to fill the bill. A word about the portable gassing units, or "milkers." You will note in the illustration that one unit consists of one or more tankers, one trailer, with pump and eight outlets, and a 2½-ton truck with filled or empty cans. With the pump and eight outlets one 750-gallon tank truck can be emptied in about 15 or 20 minutes. It is possible to fill 100 cans in this manner in approximately 25 minutes, and it is also possible to gas eight trucks simultaneously if such method is desired.

Training

I am convinced that a change in the attitude of the combatant arms regarding the problem of supply is imperative. No matter how well trained the troops participating in an operation may be, such operation is doomed to failure from the beginning unless the essential ammunition, water and food is delivered to the troops when and where needed.

The individuals of the quartermaster squadron in a horse cavalry division are going to be called upon to endure untold hardships in campaign. They must be able to work long hours with little rest. They will be the constant prey of enemy aircraft and mechanization. Therefore these men must be physically strong, intelligent, mentally alert, aggressive, and resourceful fighting men. They should be just as highly trained and

just as well disciplined as soldiers of the combatant arms.

Every effort should be made to relieve the officers, men and equipment of the quartermaster squadron from post administrative work to the end that the individuals of this unit may be adequately trained in accordance with well balanced training schedules, and that the vehicles and equipment of the squadron may be kept in first class condition at all times. This cannot be accomplished if the men and equipment are used day in and day out in post administrative motor pools and engaged in other purely post housekeeping activities.

Too much emphasis cannot be placed upon the necessity for individual and group training of soldiers in quartermaster tactical units. They must be made disciplined, fighting soldiers first, and this element of their training must be carried on continuously throughout the period of service. In the cavalry division especially, the quartermaster squadron will frequently be required to provide protection for the division supply installations and its own supply columns. In order to meet these requirements the squadron must have soldiers with sufficient individual and group combat training to perform the job.

A word regarding the training of the squadron as a whole, to prepare it for its duties and functions in the field. In the 1st Cavalry Division we are attempting to curtail as much as possible the post administrative work which the squadron has been called upon to perform, and to handle all of the supply duties in the post that we would be called upon to perform in the field, with the necessary modifications due to garrison duty. For example, we are handling the deliveries of forage and gasoline, and the issue of rations to the troops. This has been of great value in training newly-arrived officers. It not only serves to acquaint them at once with some of the problems with which they will be confronted in the field, but it also serves to acquaint them with the individuals whom they must serve in the field, thereby establishing better understanding all around.

In field exercises and maneuvers the squadron is required to perform all of its supply functions. Railheads are set up and Class I and III supplies are distributed in accordance with the various methods. The breakdowns of supplies are made by all supply sections, down to include the troops and batteries. The ammunition supply is injected into the situation and the divisional transportation is required to carry its service load or the equivalent in weight and bulk. While on this subject I wish to call attention to something which I believe has been overlooked in the training, organization, and equipment of the service elements. I refer to a lack of training and means for defense against hostile aircraft and mechanization. The 1st Cavalry Division is experimenting with machine gun mounts for trucks. The guns to be manned by assistant drivers and others. I understand the 1st Cavalry Division is to receive 172 of the new Bantam cars. It may be that a platoon of these cars carrying antiaircraft and antitank guns can be attached for the protection of the squadron. At any rate it is something to think about. The present armament of this squadron consisting of 451 pistols, 100 rifles, and 9 automatic rifles is inadequate for defense against air and mechanized attack.

Conclusion

In closing let me point to the splendid spirit and morale of the officers reporting for extended active duty, and of the selectees also. They are displaying wonderful enthusiasm and they are putting their best into the job. Those of us with longer service and larger experience must realize that this is an army composed largely of inexperienced officers and young soldiers. We must avail ourselves of every opportunity to instruct these people and pass on to them the results of our experience and training.

Unit train loaded and ready to move out. Commander getting instructions at Class I Control Station

Supply of Horse Cavalry Regiment

By S-4

EDITOR'S NOTE: *This is the second of a series of articles on this subject.*

* * *

CONTINUING with our discussion of the supply of the horse cavalry regiment from the point where we ended in the January-February issue of The CAVALRY JOURNAL, let's examine the duties of S-4 prior to the start of the march.

When the regimental commander returned to bivouac after a conference with the division commander, about 3:00 PM this (Monday) afternoon, he held a conference of his staff, squadron, and troop commanders. He informed them that:

The division was to move up into the combat zone starting tomorrow (Tuesday).

The regiment would be the only unit moving on Tuesday, and the division commander's plan contemplated that it would operate a day's march ahead of the remainder of the division for the time being.

The division commander expected operations would be for an extended period and would become progressively arduous.

All organization commanders were expected to depart with all men completely equipped, all horses well shod and in good condition, and all organizational equipment complete in every detail. Troop commanders to advise S-4 of any requirements immediately after the conference.

The first day's march would be approximately 35 miles, and the regiment would march at daylight tomorrow.

The regimental commander then dismissed the squadron and troop commanders, but had his staff remain for further conference in which they were informed:

The route and destination of the first day's march.

Formation of the march column and rate of march.

Planned employment of the regiment for the next three days as given him by the division commander.

That he wished to march at all times as light as possible, the horses carrying a minimum of weight.

That he wished to conserve his own men and transportation as much as possible in effecting supply of the regiment.

That he wished to issue his march order (orally) not later than 8:00 PM, and that all members of the staff would submit any required details to him by 7:30 PM.

Where does this leave S-4 and what must he do as a member of the staff team? There will be plenty to keep him occupied. No matter how completely we think we are equipped there are always some last-minute items which the troops must have: horseshoes, nails, a grain sack, a few parts for small arms, a lantern; a myriad of small items will always be needed. Then the rest camp must be vacated and camp property must needs be checked with a representative of the Quartermaster when the regiment leaves. And he must plan and arrange for the supply of the regiment for the next three days on the basis of its planned employment as outlined by the regimental commander.

On coming out of the colonel's office S-4 was immediately besieged by the troop commanders who had been lying in wait for him; all except one (C Troop) were present. After listening to their requests he found that all of them had only minor requirements. He advised them that all necessary items would be available at the supply tent at 6:00 PM, and to send for them there. At the same time he informed them that he, or a representative, would visit the troops, starting with headquarters troop at 7:00 PM, to check camp property; that it should take about ten minutes per troop to make the check, and that all troops should have their memorandum receipt, together with a list of shortages and damaged property, available in the orderly room at that time.

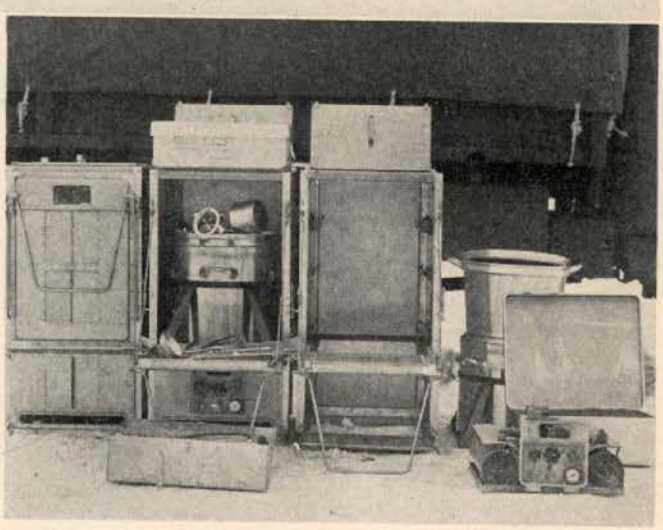
Asking the troop commanders to wait a moment, S-4 consulted S-3 and then returned to inform the troop commanders that:

Cantle rolls and troop headquarters pack loads (ration, kitchen, and ammunition pack loads) would be transported on the trucks tomorrow.

Kitchen trucks would report to troops for loading at once.

Combat (ammunition) trucks would report to troops for loading by 6:00 PM, after they had completed the hauling of rations, forage, gasoline and oil for tomorrow.

S-4 then left headquarters and went to his office next to the supply tent. Upon arriving there he advised the regimental supply sergeant as to the time the regiment would march in the morning; gave him a list of



Above: 2 trucks of Regimental Train allocated to Troop E, 2d Cavalry, with loads. Right: Close-up of new type range

the small items required by the troops; gave him instructions about securing items not on hand in the supply tent, and told him the troops would come for these supplies at 6:00 PM. Also he instructed the supply sergeant that if he (S-4) was not present at 7:00 PM, the sergeant was to check camp property with the troops at that time starting with headquarters troop.

Not having contacted the C Troop commander, S-4 opined aloud that he would have to send down to the troop to find out what they needed and to inform them of the time for checking camp property. The supply sergeant informed S-4 that the captain of C Troop had sent his troop supply sergeant for a few small items about fifteen minutes ago and the sergeant had stated that was all the troop would need, and that at the time the troop commander was checking over his camp property and would have the memorandum receipt and a list of short and damaged articles ready in a half-hour. And S-4 mused: just like that little fellow; never says much; doesn't pester you and always seems to be a jump or two ahead of all the others: nothing to worry about when it comes to C Troop.

About this time the lieutenant commanding the transportation platoon came in and S-4 gave him instructions about dispatching the kitchen trucks to the troops at once; to haul tomorrow's rations, forage, gas and oil right now and when that is done to send the ammunition trucks to troops; to be sure all extra containers are on all trucks sent to troops and are filled with gasoline; and that the service tanks of all trucks are filled to capacity before sending the trucks to troops. This lieutenant had just reported to the regiment for duty and S-4 felt it necessary to give him detailed instructions; later when he knew him better and if he proved "good," such instructions would be of a more general nature under similar circumstances.

Picking up the camp phone S-4 called the regimental surgeon, who had been with the regiment for a long time, and inquired of him if he was in need of any supplies or assistance from S-4. The surgeon replied that he had everything shipshape and for S-4 to forget the medical detachment in his worries, and that that went for the Veterinarian too. S-4 thanked heaven for good surgeons and C Troop captains and hung up; there was no time to chat about the weather.

S-4 then informed his regimental supply sergeant that he was going to visit the division G-4 and that after that he would go to the quartermaster's; probably would be back within an hour.

On going to the vehicle park, next to his office, he contacted the lieutenant maintenance officer; asked him about the serviceability of all motor vehicles in the regiment; advised him as to the departure of the regiment, and instructed him to be sure his tools and spare parts were complete.

On his way to the office of G-4 in his ½-ton command truck S-4 has a little time in which to mull over details of his plan for supplying the regiment for the next three days. While he has been busy since leaving the colonel's office, nevertheless being a nimble-witted fellow his mind has been active and he has his general plan pretty well outlined in his mind. He must learn

certain details from G-4 before he can be certain of his plan and submit it to the regimental commander. The most important items on which he must have information are:

Will the daily requirements of rations, forage, gas and oil be delivered to the regiment by means of quartermaster trucks, or will the regimental trucks have to be used for this purpose?

Will hay be obtained through supply chanels, or be procured locally wherever possible in order to reduce haulage, and if so in what manner?

Contemplated location of supply points (railhead or truckhead) each day of the three.

Are there any restrictions as to movement of supply transportation as to routes, size of convoys, speed, or use of lights at night?

Authorization to obtain from the quartermaster today one Type C and one Type D ration for the regiment.

Will ammunition be available at railheads or truckheads, or only from Army depots; if the latter, where are they located?

And much as we hate to say it the "credit" of ammunition available to the regiment; this in accordance with division SOP which provides for sub-allotment of the divisional ammunition credit to regiments in the cavalry—why? S-4 can't figure it out and neither can the author, but the infantry do it, so there!

Will the division attach sufficient quartermaster trucks to accompany the regiment to carry the regiment's proportionate share of the ammunition transported in the division train?

Anticipated time supplies will reach the regimental bivouacs daily, if they are to be delivered by division transportation; otherwise time it is expected such supplies will be available at supply points.

After a short ride S-4 arrives at the office of G-4, where he hopes to transact his business in a hurry. However, G-4 is in conference—S-4 must wait. And there are three others waiting also, two majors and a lieutenant colonel. S-4, a mere captain, informed the office clerk of the nature of his business with G-4 in the hope that he might be given the priority of attention which he felt his business deserved. But it was a vain hope. Finally it was his turn and he was getting along famously—this G-4 is really a helpful individual, when in walks a colonel, the provost marshal, and a good friend of G-4 having the run of his office. A traffic accident has just occurred, etc., etc., After better than ten minutes of interruption, the PM departed and S-4 was able to complete his business and depart.

He left G-4 possessed of the following information:

Rations, gas and oil, grain and hay would be delivered by division transportation to the regimental bivouac tomorrow night not later than 9:00 PM. For the following two days the situation would have to govern, but it was probable that at least some of the regiment's supplies would have to be hauled in regimental trucks.

Hay would be available through supply channels for tomorrow and the next day; after that it would depend on the situation. In the event it should be decided to procure hay locally a message to this effect would be forwarded to the regiment including instructions as to method of procurement to be followed.

Gas and oil would be delivered through supply channels until further instructions, but in the event a local supply of 5,000 or more gallons should be discovered it should be promptly seized and guarded and report of its location made to division by radio or wire.

The planned locations of the division supply points: railhead for Wednesday night and railhead or truckhead for Thursday night were within ten miles in each case of where it was planned to bivouac the division.

There were no restrictions as to routes, size of convoys, or speed within the division zone at present. Probably the use of lights would be restricted on all vehicles within ten miles of the front lines. The regiment would if everything went well pass the present front lines on Wednesday morning.

One each of Type C and D rations for the regiment would be drawn from the division quartermaster before departure of the regiment.

Initially ammunition beyond that carried in the division train would be available at an Army depot located at ———, about fifteen miles in rear of where the division would cross the present front lines.

The regimental credit of ammunition at this depot consisted of so many rounds of each of the different calibers required. Roughly it equalled approximately five times that carried in the regiment normally.

Trucks of the division ammunition train carrying the regiment's proportionate share of ammunition transported by that organization would not be attached to the regiment, at least initially.

If regimental transportation is required to haul daily supplies from division supply points such supplies will, except in emergency, be available thereat by 9:00 PM daily. And because of the distance the regiment will be advanced beyond the remainder of the division its trains will be loaded at whatever time they arrive, disregarding any schedule for other units. A real concession.

It is true that S-4 left G-4's office without much real definite and dependable information. It is the "phog" of war becoming apparent early in the game, much too early when we consider that "supply" is the only part of military science, subject to exact analysis and complete solution. However, it will probably get much worse before it gets better as the going gets harder, and anyway S-4 is resourceful and energetic.

Returning to his office by way of the camp quartermaster's, where he made arrangements for a representative to come to the regiment to check camp property at daylight tomorrow, S-4 on arrival gave immedi-

ate instructions to send transportation to the division quartermaster's to obtain the Type C and D rations and to issue them to troops. He then visited the regimental commander to submit and discuss with him plans for supplying the regiment for the next three days. Inasmuch as these plans had to be based on the information S-4 had obtained from G-4 of the division, they were more or less nebulous, but S-4 had every reason to assure the regimental commander that there appeared to be no exceptional difficulties to be overcome, and that adequate supplies for the regiment would be available at the time and places required by the regiment during the first three days.

At this time S-4 also informed the regimental commander of the arrangements for checking camp property; the receipt and distribution to troops of the Type C and D rations; that all minor shortages in equipment had been replaced; and that all trucks would be available to troops for loading not later than 6:00 PM. As the first day's march of the regiment (Tuesday) would be in the rear of the combat zone where combat, except for the possibility of enemy air attack, was very remote, S-4 recommended that the regiment march with all troop train (ration, kitchen and troop headquarters ammunition packs) packs loaded on trucks, and that the regimental train (kitchen, ammunition and maintenance trucks) march grouped under S-4 control, moving via a different route than that of the regiment to arrive at the new bivouac area in advance of the regiment. The regimental commander approved these recommendations and directed S-4 to confer with S-3 to insure the necessary details being communicated to troops when the march order was issued.

In his conference with S-3, S-4 informed him of all details approved by the regimental commander; indicated to him on the map the route he intended to use for movement of the trains to the new bivouac; arranged for S-3 or his representative to meet him at the new bivouac site at 10:00 AM, Tuesday, to determine bivouac areas, and told him, at the time the march order is issued to direct troop commanders that all trucks, loaded and with troop personnel riding on them, would assemble at the regimental vehicle park thirty minutes AFTER the time the regiment would march in the morning.

Please note that S-4 did not require troops to send their trucks to the train assembly anywhere from thirty minutes to an hour prior to the time the troops would march. This latter is a favorite pastime of some regimental supply officers; it is a relic of the days when we were equipped with wagon trains which usually followed the main body, initially without distance. Today there is no real need to assemble trucks prior to the departure of troops, and leaving them with troops until they depart improves loading through its being less hurried, and promotes a better last-minute police of troop areas made by troop personnel riding on trucks. Rarely will S-4 wish to move the train earlier, as he will be busy with other details, and making a final inspection of the regimental camp or bivouac area.

The checking of camp property with troop commanders was completed by the regimental supply sergeant because S-4 was required to be present at headquarters when the march order was issued at 8:00 PM. A few small items had been lost by troops, all expendable by certificate, and there had been a minor amount of damage which could easily come under the classification of fair wear and tear. To save troop commanders detail work the necessary certificates were prepared for signature of the respective troop commanders, and sent to troop orderly rooms to be signed and turned in prior to departure in the morning. S-4 was able to retire and get a good night's sleep feeling that he was well prepared for the morning.

At daylight the regiment marched without a hitch, in the order: 1st Squadron, Provisional Squadron (Headquarters, Machine Gun, and Special Weapons Troops), 2d Squadron, Medical Detachment. The transportation lieutenant was directed to form the train column with vehicles in the same order and the maintenance truck at the rear. The camp property was checked with the representative of the quartermaster, who also inspected the area at the same time. Damages, such as they were, were noted by that officer and the certificates covering shortages were accepted by him, thus giving S-4 a clean bill of health and permitting him to march at 6:00 AM, one hour after the departure of the regiment.

The march of the trains was made in open column formation and proceeded without incident, the trains arriving at a small town about one mile short of the general bivouac area at 7:50 AM. The general bivouac area had been prescribed by higher authority when orders were initially given the regimental commander. S-4 instructed the transportation lieutenant to halt the train in the town, distributing the trucks under available cover, and await his return from a reconnaissance of the bivouac area.

The general bivouac area consisted of land lying on both sides of the road and in all covered in excess of 400 acres. In his reconnaissance S-4 found there were several good-sized patches of woods offering excellent cover from air observation, and two small streams, tributary to one medium-sized stream which flowed through the site. On the outskirts of the town toward the site a dairy farmer had a well equipped with a 20 gpm gasoline driven pump and a 2,000-gallon metal storage tank. The farmer stated that his well was 90 feet deep and the water good. Completing his reconnaissance S-4 roughly outlined on his map areas for each squadron. As located each squadron would have approximately twenty acres, most of it with cover and with cover along the streams where horses could be watered. Trails led into each squadron area over which the trucks could move without difficulty.

Returning to the town S-4 contacted the mayor to

inform him that the regiment would bivouac for the night in that vicinity, and then noted the location of the railroad station, telephone exchange and post office. By this time it was 9:40 AM and S-3 or his representative, and possibly the regimental commander, could be expected at any time. The regimental commander and S-3 arrived at 9:45 AM in the command car, accompanied by the scout-car platoon, and after conferring with S-4 and looking over his map the regimental commander indicated thereon the squadrons which would occupy the areas as selected by S-4. The regimental commander, S-3 and S-4, accompanied by two scout cars which would later guide the rifle squadrons to their areas, went on a reconnaissance of the area. The regimental commander from his reconnaissance is able later to prescribe the necessary security measures for the bivouac, and S-4 will act as a guide and learn of any changes in areas which the commander may direct.

Returning from this reconnaissance S-4 directs the transportation lieutenant to prepare the train for movement by squadron sections, moving each section up to where its leading truck can follow the tail of its squadron when it passes through town. There will be ample road space available for the trucks between squadrons, as each squadron is a march unit with approximately ten minutes' time distance between them. The car commanders of the two scout cars which are to act as squadron guides are given their instructions and posted so they can precede the squadrons on arrival without a halt being necessary.

While awaiting arrival of the regiment, S-4 has time to note down the instructions he will have his clerk type and send to squadron commanders immediately after arrival in bivouac. These instructions will cover:

One truck from each squadron to report at once (reasonable time after arrival) to the dairy farm to haul drinking and cooking water for troops of squadron.

Ammunition trucks may remain loaded, their use by regiment not being contemplated.

Location of regimental supply dump where rations, gas, oil, and grain will be issued. Troop details will draw supplies at 10:00 PM.

Troop guides for hay trucks to report at supply dump not later than 8:30 PM; hay expected at approximately that time.

All motor vehicles to be serviced upon arrival in bivouac and empty gas and oil containers to be delivered to supply dump not later than 8:30 PM.

Lights on motor vehicles are prohibited within the bivouac area.

Details of so many men from certain designated troops (arranged by consulting S-1), to report to supply dump at 8:30 PM, for handling and sorting supplies.

Location of regimental dispensary.

By having these instructions prepared and sent to squadron commanders promptly after the regiment arrives in bivouac, S-4 provides troop commanders with all the information in his possession relating to his staff section. He saves himself many a headache and much work answering individual inquiries, and troop commanders can plan their own affairs with a reasonable expectation that they will not have to change their own plans because the supply officer is incapable of advance planning, or considers that it is enough to issue instructions relative to all details separately and usually ten or fifteen minutes before required execution. If conditions prevent written preparation of such instructions they should be communicated orally, and by S-4 himself, visiting the squadron commanders in turn and as rapidly as his half-ton command truck can take him. Delay in receipt of instructions will result in trucks being completely unloaded, only to be later reloaded; water from unauthorized sources being consumed; messengers or officers making useless trips to learn details which should have been provided them; and a general feeling that things are haywire.

Upon arrival of the column S-4 waits, or stations a representative, to contact the regimental surgeon as soon as he arrives to advise him the source of the water it is proposed to use for drinking and cooking purposes. The surgeon will inspect this water supply as his first act, and should it be found unusable both he and S-4 will be busy locating a satisfactory supply. It is a matter of routine that all troops will chlorinate water used for drinking purposes until such time as orders that this is unnecessary are received.

Just as soon as possible after his arrival in bivouac S-4 estimates the consumption of gasoline and oil for the day and prepares a message to be sent to the division quartermaster advising the amount required for replacement. The day's operations have been normal and the requirements should be for a minimum. Had operations been unusual S-4 would consult the scout-car, motorcycle, and transportation platoon commanders to learn their actual requirements before preparing his message. In this case 500 gallons of gas and 30 gallons of oil will more than meet his requirements for vehicles and cooking ranges.

Early in the afternoon the regimental commander holds a staff conference, at which the plans for the advance of the regiment tomorrow (Wednesday) are discussed. The direction of advance is off the right flank of the main forces and the regiment by marching at daylight should cross the present front line, extended, about 7:00 AM. From that time contact with enemy forces may be expected at any time. However, all available information indicates no hostile forces are in the zone of advance which it is planned to cover tomorrow. At this conference S-4 is in position to make his recommendations on the spot; he is in possession of all information which bears on planning for the supply of the regiment, and probably will not receive any additional information before tomorrow.

Based on a map study he plans for the movement of his trains by bounds except for that part which will

Troop Headquarters' Packs, B Troop, 2d Cavalry

follow close in rear of the regiment. Combat not being probable there appears to be no need for issuing extra ammunition to the men prior to the march. The very possibility of combat, however, makes it advisable that troops march prepared to feed the men and animals the noon and evening meals in the event the trucks are unable for any reason to get up to troop bivouacs. His recommendations to the regimental commander then are:

Troops march with a cooked meal and two feeds of grain on the saddle.

One-third of both the Type C and the Type D ration to be issued to and carried by each man.

One meal (supper) to be carried on ration packs, and kitchen and troop headquarters ammunition packs to march in pack.

Ammunition train and maintenance truck, grouped under S-4 control, to march by bounds in rear of the regiment.

Kitchen train to remain in bivouac prepared to march, grouped under direction of S-4.

These recommendations are approved by the regimental commander and S-4 by checking with S-3 assures the necessary details being covered when orders are issued covering the march. Being particularly forehanded S-4 takes the first opportunity to communicate most of this information to squadron and troop commanders. It permits them to make their own plans just that much earlier and he is fulfilling his job of being really helpful to the troops, not the least of his duties by any means.

At 8:00 PM S-4 accompanied by a messenger proceeds to a point on the main route into bivouac where vehicles can be diverted to the different squadron areas. He leaves the regimental supply sergeant at the supply dump, giving him instructions to send the troop guides reporting at 8:30 PM to join him, and to start separating rations and grain into troop lots as soon as these supplies arrive at the dump. The convoy from the division arrives a little before 9:00 PM, and consists of seven 4-ton semi-trailers carrying:

4.5 tons rations
9.5 tons grain
2.2 tons gas and oil
11.1 tons hay.

Four of the trailers carry the rations, grain, gas and oil, and three are loaded with hay. The messenger with S-4 acts as guide to conduct the four trailers with miscellaneous supplies to the supply dump at once. The troop guides are placed on the hay trailers and given instructions as to number of bales to be unloaded for each troop, and one trailer proceeds direct to each squadron area where it is unloaded in troop areas by troop details. Before leaving the diversion point drivers are given instructions as to operation without lights and assembly area for trucks when empty, this latter by the convoy commander.

At the supply dump the trailers are unloaded promptly, all supplies being placed in a central location in separate piles. Empty gasoline and oil containers are loaded on the trailers as a trade for a like number of filled containers. As soon as trailers are unloaded they clear the unloading area. Separation of grain into troop lots is an easy job; it will arrive in 100- or 160-pound burlap sacks. Piles are established for each troop; room being available they are located in a circle around the dump, otherwise in any readily accessible locations where they are within reasonable carrying distance from the central piles and can be directly loaded onto troop trucks. The usual error of placing piles close together and practically within the central dump is not made by the regimental supply sergeant, who is an old hand. C Troop again gets the jump on the other troops, sending their detail in the kitchen truck. As a result their supplies when separated are loaded directly onto their truck, avoiding double han-

dling and permitting supplies to reach the troop at the earliest possible moment.

Separation of rations and grain into troop lots is based on troop strengths in men and animals. Some troops are bound to receive slight overages and shortages of certain items; the supply sergeant will note those of any real consequence and even the score next time. Condiments of the ration (salt, pepper, spices, etc.) will be received about every fifth day when the quantities due each troop permit easy division. Filled containers of gasoline are sent to troops based on the empty containers they turned in. Oil in containers is issued to headquarters and service troop only, where it should be divided between the transportation platoon and the maintenance section.

When all supplies have been issued to troops and loaded onto their kitchen trucks and gone to troop areas, and the order for tomorrow's march has been issued covering details as previously recommended, S-4 can make use of his bedding roll and anticipate that his night's rest (what there is left of it) will be undisturbed. Tomorrow will be another day and the chances are it will not pass off as smoothly as today did. As time and the regiment advance, the situation will become more or less confused; information and deliveries from higher echelons will be less definite, and S-4 will have to meet each situation promptly if he is to efficiently carry out his duties of aiding the regimental commander as a member of the staff team, and serve the troops with adequate supplies when and where needed. All in all today's operations have practically been those normal to an ordinary training march conducted by the regiment back in the days of its initial mobilization and training. S-4 rolls over and sleeps soundly.

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A Salute

By Lieutenant Cary J. Crockett, Jr., 15th Cavalry (RAI)

A stray truck on some inconsequential errand stood by the barracks back door. Its driver tenderly rubbed a rag over its bright work.

An officer stepped into the graveled area and made toward the door, his mind bent on making short work of the routine ahead.

Perhaps it was the crisp uniform and glistening boots, or the recently completed breakfast and the cool sunrise, or perhaps the cumulative effect of all of them which produced in him an almost intoxicating sensation of physical well-being.

It manifested itself in an erect carriage, a ramrod back, a brisk and determined stride, a bright and cheery eye. He passed before the refuse cans as though they were a row of generals.

The driver turned at the crunch of the footsteps and made ready to salute. Automatically, he pulled his heels together. A perfunctory slash of the hand would satisfy the regulations.

Then, he sensed the wave of enthusiasm which preceded the officer, and instantly prepared to participate in it. His shoulders squared and his chest swelled. His chin lifted and his right hand rose, then flicked to position. Aware that his precise performance of a little military ceremony was well received by an appreciative audience, he let a confident grin meet the officer's confident grin.

In that passing instant during which their hands made perfectly coördinated downward arcs, there was welded together a superb union of mutual respect and confidence. Two individuals perceived each other's abilities, admired them, and made outward recognition of the fact in the traditional greeting of men of arms.

It was a distinct pleasure.

COMMUNICATIONS Within the 4th Cavalry

By Lieutenant Nathan B. Belgrade, 4th Cavalry

THE 4th Cavalry (H&M), one of our two Regular Army Corps Reconnaissance Regiments, is charged with the responsibility of performing reconnaissance and other cavalry missions within its capabilities.

One of the most essential requisites of the efficient performance of this responsibility is that of Signal Communications.

The means of communication within the Regiment are: Radio air-ground, scout car or motorcycle messenger, horse messenger and runner.

In order to thoroughly understand the system of communications employed, a knowledge of the organization of the Regiment is necessary.

Organization

The 4th Cavalry is a Horse and Mechanized regiment consisting of: The Regimental Command and Staff Section, two Squadrons, (one Horse, one Mechanized), Headquarters Troop (less Regimental Command and Staff Section), and Service Troop.

The Regimental Command and Staff Section contains seven vehicles, radio equipped and one vehicle not equipped with radio.

The Regimental Commander, Regimental Executive Officer, S-2, S-3, S-4, and Regimental Communications Officer each has one scout car with radio.

The Regimental Message Center is transported in a radio equipped reconnaissance car, and the Operations Section in a one-half ton pick-up truck.

The First Squadron (Horse Portée) consists of Squadron Headquarters and three Rifle Troops ("A," "B," and "C"), each being equipped with pack radio set.

The Second Squadron (Mechanized) consists of two scout car Troops, ("E" and "F") and a Motorcycle Troop ("G").

"E" and "F" Troops each are composed of Troop Headquarters and four platoons, each platoon having two sections. Each section consists of two radio equipped scout cars.

Troop "G" is composed of Troop Headquarters and four motorcycle platoons. One radio equipped scout car is assigned to each platoon.

Headquarters Troop consists of a Troop Headquarters Section, a Pioneer and Demolition Platoon divided into three sections (one radio equipped scout car for Platoon Headquarters), an Antitank Platoon divided into three sections (one radio equipped scout car per section, and one radio scout car for Platoon Headquarters) and a Communications Platoon (one radio equipped scout car and one radio equipped reconnaissance car, operating in the Regimental Command and Staff Section).

Service Troop consists of a Troop Headquarters Section, Regimental Transportation Platoon, Motor Maintenance Section, and six Portée Sections. Radios are installed in three scout cars and eight reconnaissance cars.

Radio Nets and Types of Radio

There are seventy-six radio sets authorized, organized into radio nets, within the regiment as follows:

Radio Nets		Type of Radio
1. Regimental	5 Stations	1 (SCR 203); 3 (SCR 245) 1 (SCR 193)
2. 1st Squadron	3 Stations	3 (SCR 203)
3. 2nd Squadron	4 Stations	4 (SCR 245)
4. Troop "E"	19 Stations	19 (SCR 245)
5. Troop "F"	19 Stations	19 (SCR 245)
6. Troop "G"	5 Stations	5 (SCR 245)
7. Headquarters Troop	6 Stations	6 (SCR 245)
8. Service Troop	9 Stations	1 (SCR 193); 8 (SCR 245)

Free Lance Stations

Regimental Commanding Officer	SCR 193
Regimental Executive Officer (in Corps Net)	SCR 193
Intelligence Officer (in air-ground net)	SCR 193
Plans and Training Officer	SCR 245
Regimental Supply Officer	SCR 245
Regimental Communications Officer	SCR 193

Activity of "Free Lance" Stations

The Regimental Commander is a free lance agent, free to communicate with any net in the regimental system, and to move his car at will wherever his presence may be required.

Responsibility for communication with Air Service by radio rests with S-2.

The Regimental Supply Officer by virtue of his free lance status may communicate on any regimental net and move to expedite his supply responsibilities.

The Plans and Training Officer's set is a free lance so that full time may be devoted to his own activities without being involved in any tactical net.

The Regimental Communications Officer is semi-free lance, normally with his Radio Set as the Net Control Station in the regimental net. At times during tactical situations, he may be required to leave the Regi-

mental Command Post to reconnoiter along the axis of communication to designate alternate command post areas. Should this movement be required, he turns the Net Control over to the Message Center Car and moves to the new command post area, plans disposition and location of vehicles and his radio takes over Net Control while the Regimental Command Post is en route to the new command post area. In addition, he monitors the sets of the regiment.

Method of Communication

Normally the Troop Executive Officer's radio set operates in the net of the higher unit, leaving the Troop Commander's Set to control the Troop Net. The Troop Commanding Officer and the Troop Executive Officer are together.

Communications from advance units reach the Regimental Control Set in the following manner:

Information gained is transmitted from Platoon Headquarters to the Troop Commander on troop frequency.

The Troop Executive Officer, who is in physical contact with the Troop Commander but operates forward on the squadron frequency, passes information on to the Squadron Commander.

The Squadron Commander condenses all information received from advance units, and by the use of his Squadron Executive, who is in the Regimental Net, passes such information, on the regimental frequency, to the Regimental Control Set.

Pertinent information, gained by regimental agencies is passed on to Corps by means of the Regimental Executive Officer, who operates on the Corps frequency.

Radio Maintenance

Radio maintenance in the field is accomplished by the use of a two and one-half ton truck equipped with necessary tools, instruments, and repair personnel.

Frequencies and Call Signs

The regimental communication system requires a total of eighty-four (84) call signs, (including net call signs). Eight frequency channels are necessary. Assignment of frequency channels, call signs and modes of emission, are authorized by the Army Commander.

Use of Common Frequency Channel

Authorization of two additional frequency channels would facilitate control in "E" and "F" Troops, each having 19 radio sets, and normally only the Platoon Commander's radio would be operating, resulting in one set representing the four cars of the platoon. Thus only four sets would work with Troop Headquarters.

But, should a situation arise where the four platoons were given a mission of reconnaissance which required the Platoon Commanders to assign a distant area to their second sections, a lack of control is evident, as any radio communication with the isolated sections would tend to jam the troop frequency.

To alleviate jamming of a frequency channel assigned to a unit with a large number of stations, the adoption of an auxiliary receiver and transmitter for each vehicle, similar to the walkie-talkie, occupying a small amount of space, and operating on voice with a limited range of not over five miles, would be the answer for the purpose of control between cars and commanders.

Assignment of Type Sets

The Regiment is authorized three types of radio sets: Namely, SCR-203, SCR-245 and SCR-193.

Allotment of types of radio is prescribed in Tables of Basic Allowances. The SCR-193 being the most powerful, with a normal range of 75 miles using C.W., is delegated to key personnel. The SCR-203 is a pack radio normal to horse elements. It has a range of 45 miles using C.W. The SCR-245 is a set capable of operating at a range of 45 miles using C.W. and with a crystal controlled transmitter. Most of the 4th Cavalry vehicles are equipped with this type of set. All types are capable of C.W., Tone, and Voice.

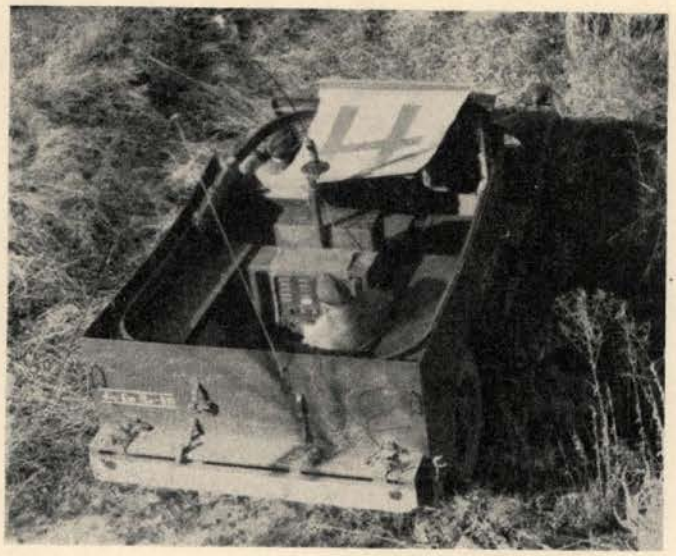
Four SCR-203 sets are assigned to the horse elements. The Commanding Officer, 1st Squadron normally attaches himself to one of his three troops, which automatically becomes the Net Control Station of the Squadron Net. The Squadron Commander's set continues to work in Regimental Net.

Five SCR-193 sets are assigned as follows: 1—Regimental Commander; 1—Regimental Executive Officer; 1—Regimental Communications Officer; 1—Executive Officer, Service Troop; and 1—Commanding Officer, Service Troop.

Sixty-seven SCR-245 sets are standard equipment for the remaining installations.

Tentatively, it is contemplated that the use of voice transmission by advance units be prescribed only for information pertaining to the enemy. Any information

SCR 203 pack set



Identification panel

relative to our own actions, locations or dispositions is sent by C.W. combined with abbreviated codes as prescribed in *Standard Operating Procedure, 4th Cavalry.*

Signal Operating Instructions

For training purposes, the Signal Operating Instructions, 4th Cavalry, includes a geographical prearranged code supplemental to the Air-Ground and Division Field Codes, and a list of key phrases for the cypher device M-94.

It also includes an abbreviated code to facilitate control, and to allow a means of warning against the three most rapid forms of attack: Air, mechanization, and gas. This is accomplished by the transmission of a designated letter in groups of threes, repeated a number of times. Included also is a verification code to establish the authenticity of a message. A reference concerning call signs and frequencies is listed. This training edition, in the form of a pamphlet is issued to all communication agencies within the 4th Cavalry.

Air Ground Communication and Identification

Air ground communication is accomplished by radio, panel and pick-up messages. One set of panels and pick-up equipment is carried in the Communication Officer's car. For communications using panels, a Panel Corporal and personnel in the Command Section operate together. Pick-up is performed by the same personnel, who must be well trained for this means of communication.

Identification when on the move is accomplished by a display, from the Communication Officer's car, of a light canvas panel with a large figure four, in blue on a yellow background.

This panel is operated on the same principle as a window shade, having a spring action rod which allows the panel to be rolled when not in use.

Messengers

Motorcycles, scout cars or horse messengers are employed also as a means of communication.

Messenger communication in general is dependent on weather conditions, distances involved, terrain, road net, proximity of the enemy, secrecy, and time factors involved in various situations.

Selected personnel are given training for messenger service by instruction in message handling, care of mount (whether horse or machine), map reading, scouting and patrolling, loyalty and courtesy.

For motorcycle messengers, the use of a three-foot light wooden rod with a clip attachment, facilitates delivery of messages from car to motorcycle or vice versa while moving. The message is clipped to stick and held from vehicle to receiver. A six-foot piece of light rope with a message packet attached, has been used with success for this purpose. Also Motorcycle Messengers (M) and horse messengers (H) are available as follows:

Troop "E"	5(M)	Troop "A"	10(H)
Troop "F"	5(M)	Troop "B"	10(H)
Troop "G"	3(M)	Troop "C"	10(H)
Headquarters Troop	13(M)	2nd Squadron Headquarters	0
Service Troop	4(M)	1st Squadron Headquarters	3(H)

Local Warning Indication

To warn the command, either on the march, or in bivouac, scout cars, either by siren or horns operating from the car battery, give warning of air or gas attack.

Radio Operator Relief

At the present time, an allowance of but one radio operator is authorized per radio set. As operation of radio communication is continuous during tactical operations of the regiment, a relief of operators becomes necessary.

The scout car driver, being trained in radio operation, is the relief when needed.

Summary

Communications within the 4th Cavalry as it is now organized has been in use but a comparatively short time. Its organization and tactical use are still tentative, subject to alteration.

A system of communications which lends itself to the principles of accuracy, promptness, and briefness is the goal sought.

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The Command Post

Of a Cavalry Regiment (H & M)

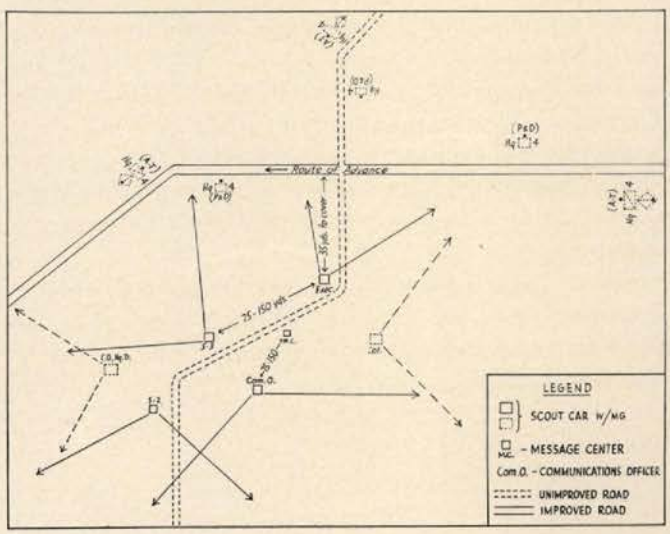
By Captain John F. Rhoades, 4th Cavalry

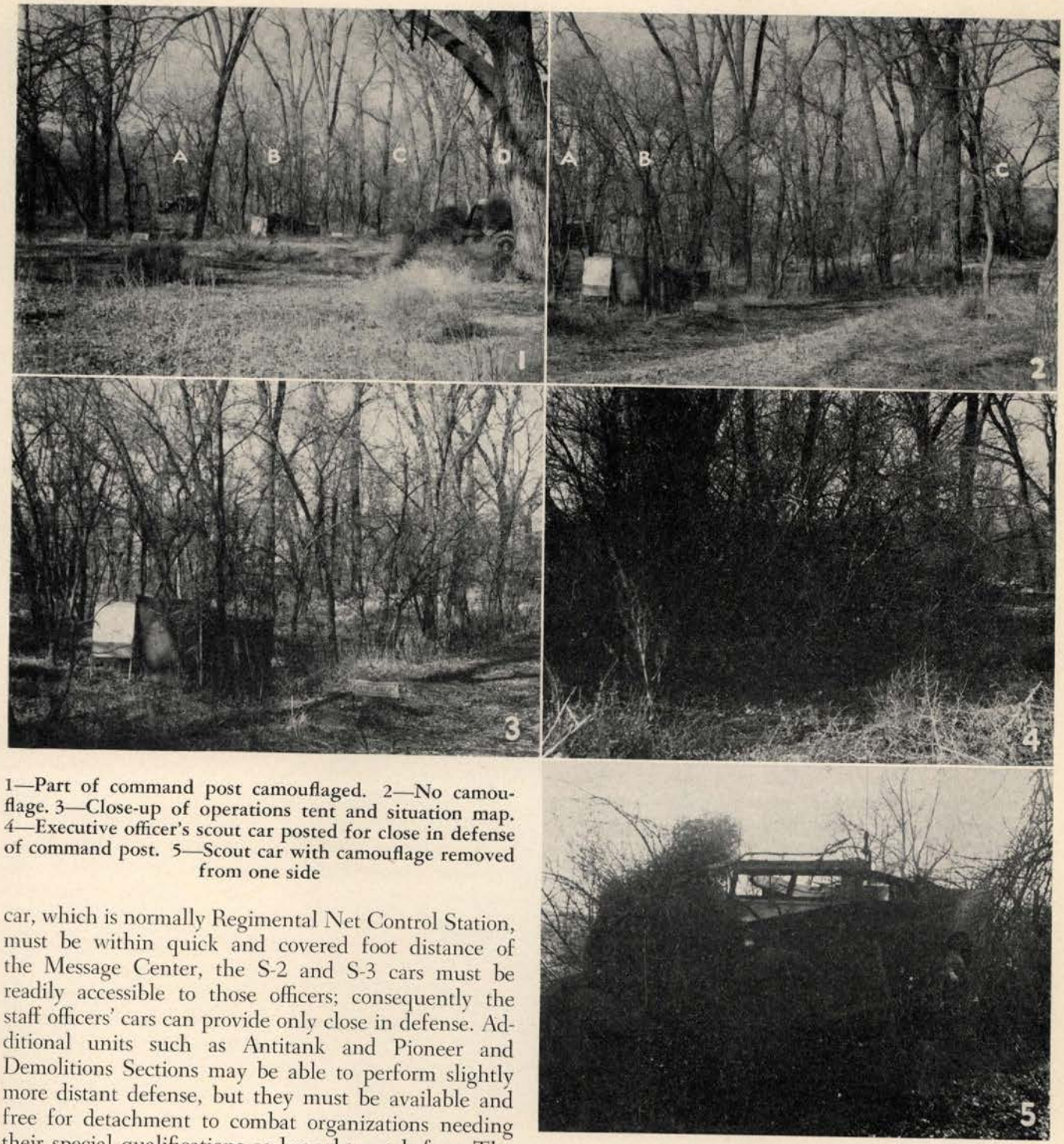
A COMMAND POST in the field is a delicate thing, needing a sheltered protected existence for proper functioning. Unfortunately, a Command Post for a Horse and Mechanized Regiment has a difficult time of it. The Regiment being well in advance of the Corps, in normal operation, the Regimental Command Post must emulate the cactus and provide its own protection on all flanks. I believe that the establishment of this set-up offers several interesting problems and is deserving of thought.

First, let us consider the necessities of our problem. For proper operation, the Command Post must first of all be able to pursue its actions uninterrupted by the enemy. Since the Command Post must be well forward and generally will be in territory occupied by an active and inquisitive enemy, the Command Post must: first, be concealed from air observation; second, and just about equally important in this day of mechanization, it must be well concealed from ground observation from all directions. Next, since even the best concealed organization may be stumbled upon by an aggressive enemy, the Command Post must be capable of fending off minor combat units, and of delaying forces of major strength long enough to enable successful evacuation. Third, the Command Post must be well enough forward to enable the Colonel to secure the necessary information—even if radio communication goes out and messengers must be relied upon. And last it must be so located that rapid occupation and evacuation is possible from the main avenue at march; and so that it is readily accessible to messengers.

Taking into consideration the above requirements, let us now see what tools a Horse and Mechanized Regiment has to work with in meeting these requirements. First, for the bare necessities, the Command Post must consist of the Regimental Commander; the Executive Officer; the S-2 personnel; the S-3 personnel; the Communication Officer and Regimental Net Control personnel; and the Message Center personnel. In addition to the tactical necessities, we have a Regimental Surgeon, and the Hq. Troop Commanding Officer. The necessity for the presence of the former is obvious; the latter is naturally the major domo necessary for the mechanics of establishing, moving, and feeding the Command Post.

These elements provide the means for protection. The Antitank platoon and Pioneer and Demolition platoon, in part or complete, may be in or near the Command Post area, if necessity for their attachment to a forward unit seems imminent. At these times, while in the Command Post, these units would be used for temporarily strengthening the defense of that area. Also, the situation may be such that Hq. Troop may have to attach one of its kitchens to the Command Post. Naturally, the more bulky the Command Post, the more difficult it is to conceal or move in the event of surprise attack; however, there is more fire power available for defense. The resultant compromise between strength and unwieldiness is tempered by the fact that any dependence placed on the action of the Antitank or Pioneer and Demolition platoons may be misplaced as these units must be available for attachment to outlying organizations at any time. In fact, the only defense weapons that can be counted on as being permanently with the Command Post are the armed scout cars assigned to the Regimental Executive, the S-2, and the S-3; as the Colonel may frequently be using his car for personal reconnaissance and the Headquarters Troop Commanding Officer's car may be needed to take him back to the rear echelon for administrative duties; also the Communications Officer may occasionally find it necessary to travel to various units on trouble shooting or other duties. The defense problem is further complicated by the fact that the Executive's car whose radio works with Corps, and the Communication Officer's





1—Part of command post camouflaged. 2—No camouflage. 3—Close-up of operations tent and situation map. 4—Executive officer's scout car posted for close in defense of command post. 5—Scout car with camouflage removed from one side

car, which is normally Regimental Net Control Station, must be within quick and covered foot distance of the Message Center, the S-2 and S-3 cars must be readily accessible to those officers; consequently the staff officers' cars can provide only close in defense. Additional units such as Antitank and Pioneer and Demolitions Sections may be able to perform slightly more distant defense, but they must be available and free for detachment to combat organizations needing their special qualifications as brought out before. The accompanying graphic illustration shows a (not *the*) typical placing of units—dotted lines indicating units that may be expected to leave the area on short notice. This sketch is meant to show a theoretical covering of avenues of approach for mechanization—the road net—not the choice of exact positions as that would be dependent upon concealment and field of fire as determined from the ground itself. The main points are: all staff cars within easy access of the message center and situation map, probably anywhere from 75 to 150 yards apart; all roads covered; every car capable of being covered by another car; in general 360 degrees observation and fire around the Command Post by the combined use of all cars shown; cars or units that may pull out (dotted lines) covering less dangerous areas, so that when they do pull out a serious gap in the defense ring will not occur; such Antitank and Pioneer and Demolition units that may be in use for more distant defense, not put out so far that they can not be rapidly contacted and dispatched to other missions.

Now for a word on concealment. A Command Post repeatedly subjected to attacks from the air or from ground combat units can not function. Naturally, the nearer it is to the enemy the more liable it is to attack;

however, the nearer it is to the enemy the more rapid and adequate the transmission of enemy information and combat orders from the Command Post. Consequently the Command Post will normally be in dangerous territory. It stands to reason that the enemy won't attack that which they can't see; therefore the ideal is 100% concealment. Certain procedure and suggestions might be in order. When a move, forward or back is imminent, an officer *with sufficient guides* should precede the movement sufficiently to locate the new Command Post area and spot positions for *every* car. When the Command Post arrives at the new area each car should be guided to its new position. Delay means halting on the road or subsequent movement of cars to positions affording better cover and for fields of fire. Regardless of miscarriage of plans, all vehicles and personnel should, upon arriving at the new area, *immediately leave the road and dive for cover*. The officer designated to spot the new command post area may be either the Commanding Officer of Headquarters Troop or the Communications Officer; the one left back should supervise the breaking of the old Command Post and conduct the march to the new Command Post area. With regard to concealment of vehicles: For air observation, shadows are the important things. Cars should be placed under, and in the shadows of, trees, brush, or other natural objects. Lacking these, the breaking of the regular outline of the vehicles and placing in swales or folds of ground all help. As for personnel, the white of an upward gazing face is a sure give away for trained observers at moderate altitudes. For ground observation, the dark regular silhouette against the sky or a uniform light background must be avoided. The position on the skyline is of course a suicide position—and to a prone observer the skyline isn't necessarily a high ridge. Here again trees and heavy underbrush afford the ideal cover. Lacking that, strips of grain sacks irregularly hung on the sides of a vehicle tend to blend it with a light background; *fresh* cut branches, brush, etc. tend to blend with a green or dark background. Of course tracks on previously untracked ground will disclose activity at least and lead an air observer to your area; accordingly, leave the highway on a previously established road if possible—if not have vehicles avoid following in trace. Last, movement is sure to catch the eye of any observer—ground or air, accordingly, to avoid disclosure of a Command Post area, cars must be put under cover immediately, or be camouflaged; new tracks must not be made; scouts must be established to give warning of approaching aircraft and for enemy mechanization so that all movement may cease, dismounted men may take cover, and all weapons manned to fire when ordered.

In conclusion, a few general points may be discussed. Marching: The Command Post in movement must move as any other combat unit—by bounds with usual protection. Front, flank, or rear security may be well furnished by motorcycle scouts and messengers; by elements of the Pioneer and Demolition Platoon if present; and by the scout car of the Commanding Officer Hq. Troop. The rate, the destination, the formation and assembly area for the march should be determined in advance and passed on to all drivers and car commanders. Such of these elements as are not covered by *Standard Operating Procedure* should be attended to by the Commanding Officer Hq. & Hq. Troop or his representative. In the Command Post area all cars should be placed in some such manner as described before; gunners should be alerted, given definite sections of observation and fire; and should understand the necessity for all around observation. Air, mechanization, and gas scouts should be established and all gunners instructed to be ready to train their guns on the direction of the attack, as indicated by the warning signal, preparatory to defense. Appropriate signs should be placed on the turn off from the main avenue of march to guide incoming messengers and liaison agents. These signs may be the usual written signs; or for greater secrecy, may be signs based on a color code without written identification of the unit—in the latter case liaison agents and messengers from other units must be informed of the code employed by the Regiment.

Finally, let it be understood that this article is not meant to be a complete study of the subject. It incorporates more ideas than experience and therefore is offered only for consideration.

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"In war, everything is co-related. Every move has some reason, seeks some *object;* once that object is determined it decides the nature and importance of the means to be employed."—FOCH.

Cavalry's Iron Pony

By Lieutenant George M. White, 6th Cavalry

WITHIN the short span of the past four months, the entire Army has become Bantam conscious. The novelty of these small cars has captured the fancy of all the arms and bids fair to effect major changes in our ideas on cross-country mobility. Doubtless, this idea has kindled the interest of most of the members of the United States Cavalry Association, but due to the small number of vehicles available at this time, very few Cavalrymen have had an opportunity to see them in action and even fewer have had a chance to become intimately acquainted with the Cavalry's new "Iron Pony."

In this connection, a few details on its conformation and manner of going might be helpful. The Bantam weighs stripped, about 2,200 pounds. Gross weight with crew and equipment is figured at 2,700 pounds. The motor is a specially constructed four cylinder Continental engine rated at 45 horsepower. The gear shift is standard with four-wheel drive and auxiliary range transmission at the driver's option. On hard-surface highways the maximum speed varies with different vehicles between 55 and 65 miles per hour. On tactical marches about 25 miles per gallon of gas is normal, while moderate cross-country operation allows from 16 to 20 miles per gallon depending on terrain. At the time of writing, accurate figures on mileage with the 37-mm. AT gun in tow are not available, but indications point to a figure around 14 or 16 miles per gallon of fuel.

Of the eight cars received by the Sixth Cavalry early in December, two were equipped with four-wheel steer. Unfortunately, the low range transmission on these

vehicles could not be used due to mechanical difficulties. This fact put many limitations on our tests and forced us to keep these particular cars on roads most of the time. In this connection it was found that the four-wheel steering car had very poor roadability when driven at speeds greater than 30 miles per hour. And when operated at speeds employed in tactical marches, natural sway and wobble were doubly increased since the rear wheels turned in the opposite direction from the front. Difficulties in parking and in traffic were also experienced. Until further tests indicate otherwise, it appears that unless handled by a superior operator the advantage of the short turning radius of this car is more than offset by the dangers of operation.

Before any discussion on tests is begun, it would be well to outline the reasons why the Bantam was built, what it was expected to do, and what we hope it will be able to accomplish. In the past few years a great many faults have cropped up in connection with the motorcycle sidecar. As a tactical vehicle, it left much to be desired. From a maintenance standpoint, the costs were high and the repairs were frequent, and its cross-country mobility decidedly limited. Thus the need for a more powerful, a sturdier, and a more versatile vehicle was felt. Result: the *Bantam*. Purpose: to replace the motorcycle sidecar. This car will however, do much more than merely fulfill these requirements as the remainder of this story will show.

Preliminaries

As soon as the Sixth Cavalry received its first eight Bantams, the Commanding Officer, Lieutenant Colonel John A. Considine, outlined a testing plan designed to determine the capabilities and limitations of the new cars. Work on this project began immediately. Within the next few days it became apparent that certain modifications were necessary to protect the car and to increase its efficiency as a cross-country vehicle. The most important of these difficulties was removed by the placing of 3/16″ steel shields beneath the front and rear differentials and beneath the oil sump. These plates, properly shaped, were welded in place and serve to protect the vital parts of the undercarriage from shocks sustained in cross-country operation and to lessen resistance to sliding when one or more of the wheels are off the ground and traction must devolve from the remaining wheels. Two small gas cans were built to be fastened by belting straps behind the front fenders on the running board, each can carrying 2½ gallons of gasoline. The emergency hand brake was found to interfere with clutch operation and was moved to a new position alongside the driver's seat. It was also found that the crew had a great deal of difficulty in maintaining the "Riley seat" during cross-country driving and to eliminate this, seat belts equipped with quick-releasing catches were added.

The next group of modifications might be termed as those dealing with armament. These changes followed those mentioned above and were added as new possibilities for employment were explored. The advantage of having the 37-mm. AT gun function with the reconnaissance elements of the Corps Reconnaissance Regiment has long been advocated by Colonel Considine. The Bantam seemed to be the answer to this idea, provided it was mechanically strong enough to operate cross-country with the gun in tow. Also, if this weapon was to accompany the regiment, it was imperative that it be able to go into action very rapidly. If these two problems could be solved, an important step in antimechanized operations would have been made.

The towing hook provided on the car was impractical for this purpose since, due to its position, it allowed the trail spades of the gun to come in too close contact with the ground. Also, the standard towing hook was not designed to be released quickly enough for our purpose. The logical solution then, was a quick-releasing towing coupling designed especially for the job. Captain W. B. Hope, Motor Officer, undertook this problem and designed a coupling which could be released by a lever operated from the rear seat of the car. When the locking pin was removed; the towing ring of the gun, being released, pulled free and allowed the trail to drop to the ground automatically of its own weight. In order to mount this coupling, it was necessary to move the spare tire about 18″ to the left. As soon as this device was perfected and the car with gun in tow tested, it was found that when crossing ditches and other depressions, the trail spades of the gun dug in the bank making the pull harder for the car. To offset this difficulty, a skid which extended far enough to the rear to pass the end of the spades was welded to the chassis. For this construction, ¼″ boiler plate was used to give the skid strength enough to support the rear end of the car. At this point, all that remained was the field test to see if the car could carry the additional load.

Field Tests

The field tests themselves consisted of putting the car through mud and water, over rough ground, through brush, up and down banks, and over every adverse type of ground a vehicle could be expected to traverse—and over a good many that no other type could traverse. Through these tests, it has been proved, beyond any reasonable doubt, that these little cars can and will do far more than even the manufacturers expected. The chief reasons being that they are short coupled; easily handled; and with the low range transmission, possessed of unexpected power and traction. It has also been noticed that in the case of the Bantam, more than in any other, its ability to get out of tough spots is predicated directly on the boldness and ability of the driver.

Since time immemorial, rivers have been considered major obstacles to the advance of an army in hostile

Radio equipped

territory. The one exception has been the Cavalry, who with the help of their horses could swim across with a few supplies with little or no delay. In general, the same is true today of the mechanized and horse reconnaissance elements operating in front of large bodies of troops. Modern times however have effected one change, these leading elements in order to be effective, must have radio communication. Present trends have also shown the necessity of having antitank weapons with all reconnaissance elements, no matter how far forward. It was realized that if the Bantam could be floated on some sort of raft thrown together from materials which could be obtained anywhere in the field, and thus cross large streams with the horses, the problems of communication and antitank defense for horse cavalry operating alone in hostile territory would be solved. Again, as in the case of the 37-mm. gun, the idea bore fruit.

The experiments on the raft and the mounting of the radio progressed simultaneously and with great dispatch. In the latter case, an SCR-245 Radio was chosen for the installation. A standard 12-volt generator was mounted under the hood and the 12-volt battery mounted in a metal container similar to the one used in the ½-ton command reconnaissance car was bolted on top of the rear bumper. The fish pole antenna was placed on a bracket welded to the left side of the car about halfway between the driver's seat and the rear end of the left side panel. A few tests showed that the radio worked equally as well as did those in the scout and command reconnaissance cars. The installation weighed about 250 pounds and no reduction in crew or their equipment was found necessary.

The construction of the raft proved a more difficult problem. To obtain the necessary buoyancy, some light, hollow object was required. The only article of this nature that is always available in the horse and mechanized regiment is the standard 10-gallon gas can with which every vehicle is equipped. At about this time it was decided to utilize the power of the engine to propel the raft and thus gain more speed. Further designs were employed with this in view. In order to secure full benefit from the buoyancy afforded by these cans, they were placed in line between two beams spaced about 10″ apart and secured at each end with an additional short beam nailed in place. The cans were secured to this frame by a rope wound spirally around the improvised pontoon and tied at each end. In this connection, it is only fair to mention that Hydraulics texts were in great demand at Fort Oglethorpe for a few days. The entire buoyant force was obtained from two of these pontoons, one under each side of the car. It was found that 16 cans on each side were necessary to support the car, its crew and their equipment. The only decking used was that needed to support the car and to secure the raft. The whole structure may be held together by rope, wire, lariats, or nails whichever is available. A similar raft was built to carry the 37-mm. AT gun, which required 12 cans to float satisfactorily.

Two types of propellers were designed and tested. The first was built on the principle of a turbine. It consisted of six 18 ga. steel paddles 4″ by 6″ welded to two rings which were equal in circumference to the outside of the tires. At the center of this ring, holes were bored which would allow it to be bolted to the wheel by the lugs which hold the wheel to the axle. One of these paddles was affixed to each rear wheel. When the car was put on the raft, the rear end was lowered sufficiently to bring the paddles in contact with the water. With the motor running at a speed equivalent to about 20 mph a speed of about two or three miles per hour was attained by the raft. The two paddle wheels were the only extra equipment carried by the car. The only objection here was that the raft moved too slowly, so the second type of propeller was designed.

This time it was decided to mount the wheel in the rear and to use the old river boat type of propeller. An old automobile axle was used, and keeping in mind the fact that the propeller must be carried in the Bantam, eight hinged spokes were welded to each end of the axle to carry the paddle boards. With the paddle boards removable and the spokes hinged, the wheel could be collapsed and carried in the car with no difficulty. In addition, a motorcycle sprocket was set on one end of the axle to transmit the power from the drive chain. The spokes were set so that the wheel would be as long as the car was wide, this to assure a straight pull on the chain and sprocket. The paddle boards may be carried or they may be cut from boards on any convenient house, barn, or fence. They are fastened to the spokes by means of wing nuts to facilitate removal. The propeller is secured by "U" shaped cleats to two boards which extend over the stern of the raft to about six feet. The power is transmitted by means of an elongated motorcycle sprocket chain running from a drive sprocket bolted to the right rear

wheel to the sprocket on the axle. Under favorable conditions, the raft will average about 11 miles per hour without straining the motor.

Steering may be accomplished in two ways: by sweeps; or if time permits, by a rudder made of boards and hung behind the wheel. In the latter case the rudder is manipulated by ropes. If the 37-mm. gun raft is used, it is pushed ahead of the car raft and secured by lashing. When the car is floated alone, the raft will comfortably carry the car, radio, three men and their equipment across large streams at about 11 mph. When the gun raft is lashed to the car raft, the crew can be increased to six men and about 400 pounds of ammunition or other supplies. With this load, however, the speed is reduced to approximately 8 mph. The time required to assemble the raft, get it in the water, and get the car aboard is about one hour assuming materials at hand. If the gun raft is to be used, an additional 30 minutes is needed.

At the present time, tests are continuing along new lines. Several types of vehicular mounts for each type of machine gun are being tested. Experiments are being conducted in tactical employment. Further modifications to the vehicle are receiving consideration—for example: moving the gas tank to a new position beneath the front seats to allow more room in the rear of the car for ammunition, extra equipment, etc.

Conclusion

When viewed as a replacement for the motorcycle sidecar, we believe the Bantam to be far superior as a tactical vehicle. Its mobility is far greater, it is easier to operate and therefore fatigue on the part of the driver is markedly decreased. It is heavier than the motorcycle sidecar but its increased power offsets this fact. As is to be expected, its mileage per gallon of fuel is less than that of the motorcycle sidecar but its engine is far stronger and needs much less maintenance. Bantam operators are easier to train and achieve excellence sooner, and the average soldier's enthusiasm for the new "Iron Pony" is at a peak. The opinion of this regiment is that of one old sergeant who was heard to remark, "They may be short on size but they're sure long on performance, I'm for 'em."

★ ★ ★

Movement is the rule of strategy.—FOCH.

The Bantam in the Scout Car Platoon

By Captain Bruce Palmer, 6th Cavalry

THE Sixth Cavalry, as explained in the preceding article, has been engaged in exhaustive tests of the ¼-ton Liaison Truck (the Bantam). These tests have been primarily organizational and functional in character, since there is no doubt in the minds of the members of this regiment as to the performance of the vehicle. The Regimental Commander, himself, has demonstrated the extraordinary cross-country ability of the Bantam in extremely difficult terrain.

* * *

TESTING THE BANTAM IN THE RECONNAISSANCE PLATOON

1. Organization Tested

The test organization of the Reconnaissance (Scout Car) Platoon of the Reconnaissance Troop was as follows: 4 Scout Cars; 2 Bantams; 2 Solo Motorcycles.

This set-up allows the platoon leader to split his platoon readily into two sections, each composed of: 2 Scout Cars; 1 Bantam; 1 Solo Motorcycle.

Thus when operating in a large zone which requires the platoon to split, each section has the same vehicles as are available to the platoon. During the test, the platoon normally operated as a unit. However, on occasions when the platoon operated by section, the bantam performed for the section missions similar to those it performed for the platoon.

2. Platoon (or Section) On Reconnaissance

a. BANTAM AS A POINT.

Probably the worst danger facing a scout car platoon is a well conceived and well concealed ambush. By using the Bantam as a point, the platoon in patrol formation can materially eliminate this danger. The platoon leader follows the point Bantam, in the leading scout car; the second Bantam follows the rear section. The Bantam upon receiving fire, upon observing enemy, or upon catching sight of a physical road block darts quickly under cover off the road. The worst thing the enemy can do is to leave the road clear, allow the Bantam to pass unmolested and smash the leading scout car with antitank gun fire. An alert Bantam may detect some movement which will give the position away. However, if the Bantam has passed a likely place for ambush without mishap and the platoon leader still suspects trouble, he can reconnoiter the position by fire. Many a well laid trap has been ruined by an itchy trigger finger. Of course, the platoon can reconnoiter such localities dismounted, but if any speed in reconnaissance is to be attained, risks must be taken.

A good N.C.O. and a trained scout, both armed with the Tommy Gun, were placed in the Bantam, in addition to the driver. As soon as the Bantam runs into trouble and dives for cover, the N.C.O. immediately

Reconnaissance platoon tested—4 Scout Cars, 2 Bantams, 2 Solos

Reconnaissance platoon tested, different angle

initiates reconnaissance of the enemy position, remaining in the Bantam till he is forced to continue dismounted with his scout. In the meantime, the platoon leader starts his cars forward under cover into positions from where they are ready for any type of action, while he goes forward on personal reconnaissance and to get the information brought back by his point patrol.

The Bantam moving quietly down the road operated very successfully during the test as a point. It is amazing how quickly the little car ducked into cover. It is very doubtful whether at any time the Bantam with its speed, maneuverability, and low silhouette would have been a casualty during a point action. The Bantam often cut corners around a suspected ambush and discovered hostile dispositions which might have otherwise caused trouble.

b. BANTAM AS A MARCH OUTPOST.

The Bantam is an ideal march outpost. Moving quickly and quietly to the halted platoon, the Bantam can give warning of an approaching enemy. During a halt, the Bantam can also furnish flank security for the platoon on a vulnerable flank. During the test, the platoon was never surprised at a halt. The Bantam was a great help in accomplishing this result.

c. SECONDARY RECONNAISSANCE.

The Bantam can be sent to reconnoiter roads and trails of secondary importance, while the scout cars cover the primary road nets. The Bantam can move across weak bridges on back trails and reconnoiter areas which would take the heavier scout cars longer to cover. The Bantam can also reconnoiter areas inaccessible to the scout cars.

d. NIGHT RECONNAISSANCE.

The Bantam has the weakness of any vehicle at night, in that it is subject to ambush and capture. Moving cross-country, the driver in order to develop enough power to keep moving, must speed up the engine with resulting noise. In the quiet of night, the noise is audible at several hundred yards. The 6th Cavalry is now working on an improved muffler design which will reduce this noise.

On one occasion during the test, an attempt to work a Bantam cross-country around an enemy outpost at night ended in capture. The outpost troops heard the noise of the motor and sent out a patrol which ambushed and captured the little car.

Moving on roads, however, the Bantam cars move practically without noise. During the test, a scout car platoon one night was seeking an enemy outpost blocking a particular route, in order that dismounted and Bantam patrols might be sent around the outpost to reconnoiter in behind the enemy outpost line. The platoon moved down the road in low gear and without lights, using a Bantam as a point. The Bantam located the enemy outpost without being discovered.

When sending out a Bantam for a night patrol, discretion must be used. The Bantam may be used part of the way, the patrol continuing dismounted. No vehicle, however, can carry out missions requiring great stealth as successfully as the dismounted scout. This is especially true at night, when the ear displaces the eye in importance in the field of scoutcraft.

e. SCOUT CAR–HORSE PORTÉE OPERATIONS.

In situations where a portée platoon has been brought forward to use its combat power to overcome resistance which has blocked scout car reconnaissance, the Bantam becomes a very desirable vehicle. The horse platoon leader who has accompanied the forward scout car platoon which has been stopped can use a Bantam for its personal reconnaissance and for transportation to the portée platoon detrucking area. Reconnaissance of difficult ground can be made very rapidly in the Bantam, so that there is no delay after the horses are unloaded. The leader can make his decision quickly and the horse platoon can immediately start for its objective.

Bantams from the scout car troop headquarters and the reserve scout car platoon can also help furnish security for the portée platoon which has been marching with the scout car troop headquarters. During halts, Bantams can augment flank security by patrolling the area to the flanks of the trailers. While the platoon is loading, scout cars block the entrance into the detrucking area, and Bantams cover the flanks of the trailers by movement cross-country.

Bantam acting as a point for platoon. It has just dived for cover off the road. Note the muzzle of a .30 caliber HMG mounted on the bantam

f. COUNTER-RECONNAISSANCE MISSIONS.

A scout car platoon given the mission of reconnoitering and delaying enemy reconnaissance elements in front of a stationary counter-reconnaissance screen can cover this area more effectively, if it has Bantams in addition to its scout cars. During the test, one platoon did particularly well on this type of mission, by covering the main routes with the scout cars, while the Bantams patrolled areas more difficult to reach in the scout cars. In this area, even horse patrols were unable to move without detection.

3. Platoon (or Section) In Delaying Action

a. GENERAL.

In delaying action, the methods employed by a scout car platoon depend largely upon the type of enemy opposition. Against motorized infantry and horse cavalry, the scout cars seek defiladed or covered positions affording good fields of fire at mid and long ranges. Against armored vehicles the scout cars seek defiles, stream crossings, and other bottlenecks which are blocked and denied to the enemy. In either type of delay, the Bantams can be of great assistance to the scout car platoon.

b. KEEPING CONTACT WITH THE ENEMY.

In delaying infantry, for example, where the scout cars delay with long range machine gun fire, the Bantams are valuable for keeping contact with the enemy during the withdrawal phase. During the test, a scout car platoon was delaying astride a road, all four scout cars in defiladed positions on a ridge. When forced to withdraw, the platoon leader displaced his platoon by section to the next delaying position. There was a good distance between the two delaying positions, with no suitable intermediate position. The Bantam, however with its low silhouette and exceptional cross-country ability, was able to keep contact with the enemy and observe his movements. Later it withdrew under cover to the scout car platoon. Thus, the platoon leader was able to keep contact with the enemy without unduly exposing his cars in poor firing positions devoid of suitable cover.

This action of the Bantam would be very valuable in close country with poor observation, where it would be difficult for the larger scout cars to keep contact between delaying positions without undue exposure.

c. BANTAMS AS GUN CARRIERS.

In delaying action, whether it is on high ground using long range fire, or whether it is at the routes across an obstacle, the Bantam can carry MG's for dismounted action into positions not readily accessible to the scout cars. These positions should be defiladed, or else afford a covered route of withdrawal for the Bantam.

On one occasion during the test, the scout car platoon was delaying at a stream crossing. The Bantam not only reconnoitered for possible enemy crossings, but also carried machine guns to a crossing so discovered, and denied the use of a ford to the enemy. In addition, .50 cal. MG's with ground mounts can be carried to nearby antitank positions.

d. SECURITY.

A scout car platoon, halted and firing during delaying action, either off the vehicles or with guns on the ground, must protect its flanks and rear from surprise attack. The Bantam can furnish this security very efficiently.

4. Dismounted Attack

When the platoon meets minor opposition and decides to attack dismounted, the Bantam can carry machine guns over difficult terrain to support the dismounted attack, while the scout cars attack by frontal fire. This action was successfully carried out several times during the test.

5. Bantam in Supply

It is believed that the Bantam will prove to be an invaluable aid in the field for reasons of supply. Many times on maneuvers, a scout car platoon has needed ammunition, gasoline, and rations, but has been unable or unwilling to send scout cars back to the Troop CP, or to the nearest DP, for resupply, since the scout cars were needed tactically. The Bantam under these circumstances may certainly prove to be a life-saver and save many a scout car platoon in a difficult situation.

CONCLUSIONS

1. Tests so far indicate that the motorcycle (solo) should remain in the scout car platoon as an essential member of the team. Where radio communication fails, or is not desirable, the solo messenger can carry information to the rear. This is his primary rôle, although he can be used as a scout. In addition, the solo is superior

Close up of bantam with .30 caliber LMG mounted. Crew of four—three M-1 rifles carried in boots

to the Bantam for traffic control. In an emergency when two solos are insufficient, the Bantam can perform messenger service. In situations where the messenger must pass through an area in enemy hands, it may be preferable to dispatch a Bantam with a message of vital importance, since the solo is so easily captured.

2. The Bantam is a very valuable addition to the scout car platoon and should be included in its permanent organization to take the place of the two solo intelligence scouts now provided. The remaining two solo motorcycles should be used for messenger service.

3. The Bantam to be used in this organization should be armed with a LMG (M 1919 A4), long barreled, mounted on a pedestal type mount. For this gun, 1,200 rounds of .30 cal. ammunition should be carried. The Bantam should be of the two wheel steer type and should be equipped with puncture proof tires. The four wheel steer type unnecessarily complicates an otherwise simple design; it is difficult to maintain; is dangerous to handle at speed; and is very easily knocked out of proper running order. No severe cross-country test of the four wheel steer Bantam was possible, since this type Bantam received here could be operated in only the high range of the transfer case, it being impossible to put the transfer case in low range.

4. The crew of the Bantam should be three men; a driver, a gunner, and a car commander, armed with the Thompson Sub MG.

OTHER TESTS

At present, the Sixth Cavalry is conducting a test of the Scout Car Platoon organized as follows: 4 Bantams; 2 Scout Cars; 2 Motorcycles (solo).

Later, the Regiment will test a platoon equipped entirely with Bantams. Of course, in these tests, the Bantam in order to substitute for the scout car, must be armed with the .50 cal. MG. Otherwise, it must give way to enemy light armored vehicles. It must also be radio equipped. All the advantages that accrue to the scout car because of its armor, of course, are absent in the Bantam. Advantages of cross-country mobility inherent in the Bantam are lacking in the scout car.

What Would You Do?

By W.W.Y.

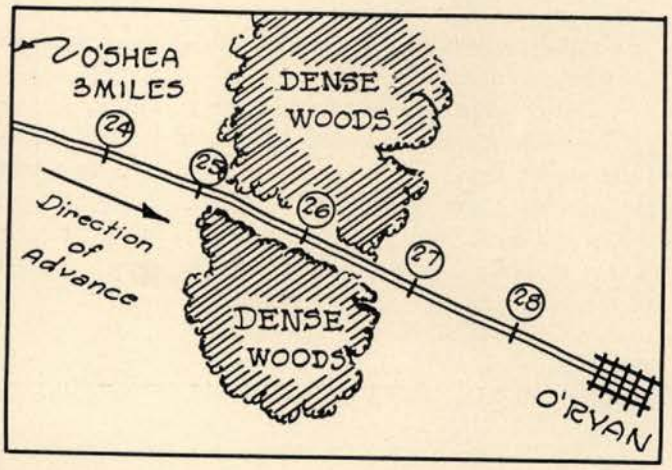
You are troop commander of a rifle troop which is part of a Corps Reconnaissance Regiment. Horse elements of the regiment are advancing generally to the east on a broad front, preceded by mechanized elements. Your troop has been ordered to act aggressively and by advancing from O'SHEA to seize the town of O'RYAN. The latter forms a point on a counterreconnaissance screen established by enemy forces. You have been warned by mechanized reconnaissance elements that hostile patrols are active and that you may expect these patrols to employ delaying action along the route of your advance. Your route of advance is equipped with mile posts as shown in the sketch by the circled numbers. The woods do not permit mounted maneuver, but the ground elsewhere is open and rolling.

You plan to move out at once in a formation which will permit you to employ immediate action against any delaying forces encountered. What type of forward security would you employ at various stages of the advance?

SOLUTION

A covering detachment should be used between O'SHEA and mile post 25 and again between mile post 27 and the objective.

Passing through the dense woods, which in effect constitute a defile, an advance guard should be employed.



The use of an advance guard in traversing the wooded area is an obvious solution since under such circumstances the command cannot be readily deployed to meet an emergency. Some force possessing combat strength (an advance guard) should be given the mission of brushing aside patrols or of containing hostile delaying groups thus protecting the main body until it can be deployed.

However, the initial employment of a covering detachment in this case is not so well understood. Many persons believe that covering detachments are not used except just prior to making contact with the enemy or upon nearing an objective; in other words when combat is "imminent."

This is generally true. But on many occasions when swift aggressive action is required, and delaying forces may be encountered, combat is always "imminent." Since an advance guard commander cannot usually tell whether an opposing group is of greater or smaller size than his own some reconnaissance of the hostile position must be made if an attack is warranted by the advance guard acting alone. This imposes the very delay the enemy seeks.

No commander should hesitate to employ the entire main body against a hostile delaying force regardless of the possible use of a "hammer to kill a fly." Such tactics effectively discourage hostile delaying forces.

If such use of the main force is contemplated and if the terrain permits the adoption of open "approach" formations only warning of enemy presence is needed. A covering detachment supplies all the security required and minimizes delay.

Thus, if delay is expected on maneuverable terrain, the use of a covering detachment at all stages of the advance is warranted. Where maneuver is restricted the greater protection of an advance guard is needed. The shift from one form to another is not difficult if practiced a few times in the field.

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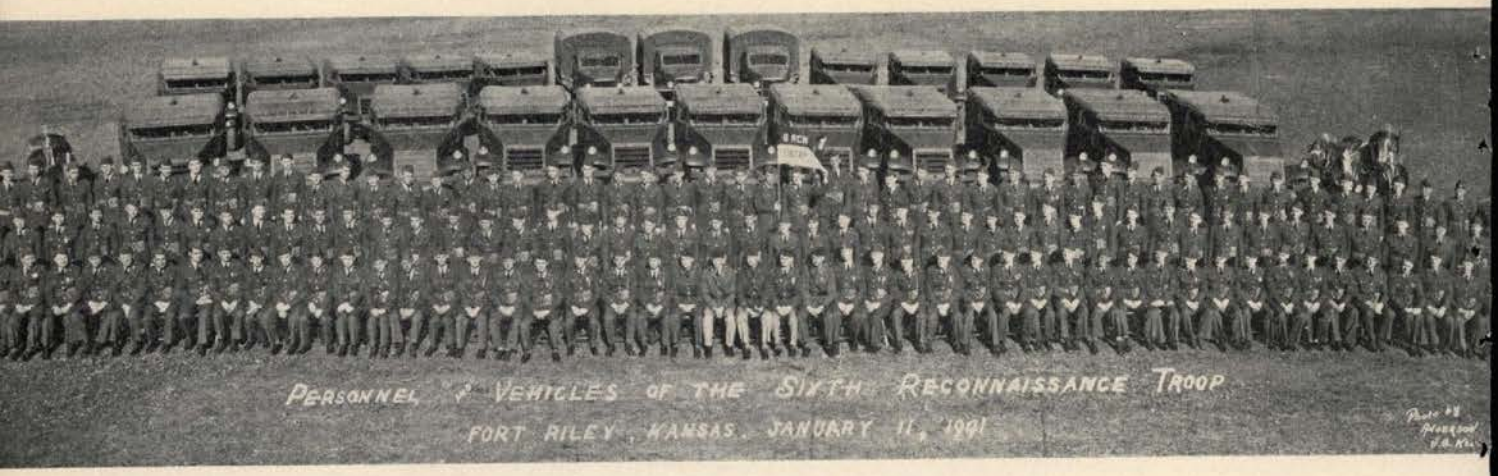
The opponent usually does not assume the rôle he has been expected to play.—*von Schlieffen.*



Initial March of the Sixth Reconnaissance Troop

By Major M. E. Jones, Cavalry

ABOUT the 20th of August, the first seven men recruited for the Sixth Reconnaissance Troop arrived at Fort Riley. It was September before others were recruited, and they continued to arrive during October, November and December.

Immediately upon arrival of recruits the troop commander personally supervised the fitting of their clothing, interviewed each individual and placed him in the radio school, arms school, clerks school, armorer's school or wherever the recruit seemed best fitted. This instruction was concurrent with recruit drill.

On January 18, upon completion of all schools and record firing, authority was granted to make a march to Fort Bliss, Texas and return, a distance of 2,000 miles. On January 20th, the troop, consisting of six officers, 154 enlisted men and 43 vehicles (1 Marmon-Herington, 2 Bantams, 12 motorcycles, 22 scout cars and 6 trucks) left Fort Riley at 4:00 A.M. and marched 286 miles to Fort Reno, Oklahoma, arriving there at 5:00 P.M., where they bivouacked for the night south of the polo field. This was a bitterly cold day and the going through Herrington and Marion, Kansas, was treacherous, due to the streets being covered with ice.

January 21st the troop proceeded to Amarillo, Texas, a distance of 218 miles, and, after supper, made a night march from Amarillo with only black-out lights to Roswell, New Mexico, a distance of 224 miles, where the troop rested until January 23rd. At Amarillo, a "norther" came up just two hours prior to departure, and the cold wind was most penetrating. One motorcyclist's muscles were so cramped from the cold he had to be lifted bodily from his machine. On January 23rd, the troop left Roswell at 7:00 A.M. and arrived at Fort Bliss, Texas at 3:00 P.M., a distance of 246 miles. Just outside of Fort Bliss one of the Lieutenants while turning on the reserve gas tank of his motorcycle, hit some sand, spilling him. He was badly bruised and was taken to the Army Hospital.

The troop spent January 24th and 25th in giving each vehicle a thousand mile check and left for Carlsbad on Sunday, where the men enjoyed a free trip through the famous Carlsbad Caverns.

Considerable rain was encountered on the return home, making, it most difficult for the inexperienced motorcyclists on the slippery asphalt roads. The troop, without the loss of a single vehicle, arrived back at Fort Riley the night of January 30th, where they thoroughly enjoyed their steam heated quarters and a delicious dinner.

This troop, although recently activated and composed of all three year enlisted men, recruited from Arkansas, Kansas and Iowa, boast the fact that it has seventy-four qualified radio operators, all holding diplomas from the Cavalry School. The men are new in the Army, but after this march, they know they can take it and are ready for any emergency.

There has never been a court-martial or venereal case contracted in this organization.

Unit Training Activities

1st Armored Regiment (L) Observes 108th Anniversary—Fort Knox, Kentucky

The 1st Armored Division paused in the midst of its busy training program Saturday to pay tribute to one of the most distinguished regiments in the U. S. Army.

The occasion was the 108th anniversary of the 1st Armored Regiment (Light) of the 1st Armored Division. The regiment is a light tank unit. Until its conversion into a tracked-vehicle regiment, the unit was the oldest horse cavalry outfit in the U. S. Army.

Colonel Alexander D. Surles, Commanding Officer of the Regiment, proclaimed a holiday for his men Saturday. Since the anniversary date falls on Sunday, March 2, Saturday was designated the day for observance of the Regimental Birthday.

Major General Bruce Magruder, commanding General of the 1st Armored Division, sent a letter of special greetings to the Regiment. The letter follows, in part:

". . . It is with particular pleasure that the 1st Armored Division on this date salutes the 1st Armored Regiment (Light) on the occasion of the Regiment's 108th Anniversary. It is a privilege, Colonel Surles, to pay tribute to your regiment.

"Deep rooted are the achievements of the First in the annals of American history. Activated by authority of Congress on March 2, 1833, as the 1st United States Cavalry, for service in the Black Hawk Indian Campaign, your Regiment was nurtured on the Indian frontiers and protected the pioneers as they broke the fertile soil of the West. The First served gallantly in the Mexican War and won equal renown in the Civil War, the Spanish-American conflict and the Philippine Insurrection. No less than 61 Battle Honors grace the First's Regimental Standard. Many famous military leaders are children of the First.

". . . On this date we pause to honor the distinguished First, a Regiment which has attained inspiring heights in the past. I am confident that the years to come will bring you continued honors and glory, and a satisfaction of duty well performed."

Two sergeants Saturday could look back on perhaps the longest period of service recorded by any men now in the Regiment. First Sergeant Earl C. Conley of Company F has served 19 of his 25 years in the Army with the First. Sergeant Frank Pray of A Company has a similar record.

Fifth Cavalry—Fort Bliss, Texas

COLONEL HENRY J. M. SMITH, *Commanding*

The training of the Regiment during the period January 1 to February 1, 1941 at Fort Clark, Texas was a progressive step beyond the instruction which was conducted during December, i.e., individual, squad and platoon training. Training schedules provided for the following:

(1) Troop tactical exercises.
(2) Combat firing.
(3) Overnight marches (one each month).
(4) Night exercises (one per month).
(5) Mounted scouting and patrolling.
(6) Preparatory work for mounted pistol practice for inexperienced men and animals.
(7) Correction of deficiencies at previous Training Test.
(8) Full pack inspections with all field equipment and Transportation.
(9) Dismounted close order drill 1:30-2:00 PM.
(10) Troop Officers' and Noncommissioned Officers' Schools.
(11) Instruction in the use of principal weapons.
(12) Road block problem (one per month for Scout Car, Platoon).
(13) Unit instructions for communication, Scout Car, Motorcycle and Transportation Platoon of Headquarters and Headquarters and Service Troop.

In addition to the above quoted training, the following schools were continued throughout the month of January:

Officers' Equitation Class.
Noncommissioned Officers' Equitation Class.
Motorcycle School.
Cooks' School.
Horseshoers' School.
Saddlers' School.

The scheduled training of the Fifth Cavalry was suspended as of February 1st in order for organizations to make necessary preparations for permanent change of station to Fort Bliss, Texas.

The motor elements of the Regiment moved from Fort Clark to Fort Bliss on February 4th and 5th with an overnight stop at Fort D. A. Russell, Marfa, Texas. Prior to the motor movement from Fort Clark, the motors from the 12th Cavalry joined with those of the remainder of the 1st Brigade. The movement was made in three serials, Brigade Headquarters and separate troop units—5th Cavalry—12th Cavalry.

The train movement from Fort Clark was made on February 5th and 6th in three serials. The first serial consisted of the Provisional Squadron with Medical Detachment and Headquarters Troop, 1st Cavalry Brigade attached; the second consisted of the 1st Squadron with attached Medical Detachment; and the third consisted of the 2nd Squadron with attached Medical De-

tachment and 1st Platoon, Troop "E," 16th Quartermaster Squadron.

A small detachment consisting of staff officers and selected enlisted personnel from each organization proceeded to Fort Bliss with the motors to arrange details of unloading the troops and horses when they arrived and to arrange details of supply.

The change of station from Fort Clark to Fort Bliss was effected without interruptions. The third serial of the train movement arrived at Fort Bliss at 1:00 P.M., on February 6th and by nightfall all details of the change of station were provided for.

The scheduled training of the Regiment was resumed on February 11th. On February 20th there was a practice Regimental "Alert" and on February 21st the entire 1st Cavalry Division was alerted in preparation for an emergency. The Troops were ready to march within an hour and fifteen minutes for the Regimental "Alert" and within one hour for the Division "Alert." Immediately following the Division "Alert" troops were moved into position on the parade field and passed in review. Brigadier General Innis P. Swift, United States Army, was Reviewing Officer and Brigadier General John Millikin, United States Army, was Commander of Troops.

The formation for the review was unusual in that the Regiments were formed in line of Troop Columns at two yard intervals and passed in review in that formation. Regiments adjusted their troop columns to provide a square formation.

On February 15th the Fifth Cavalry began receiving additional Selectees. Seventy-one Selectees were received on February 15th, thirty-five on February 21st, one hundred and two on February 26th, and sixteen on February 27th. The recruit training for these men began immediately after their arrival and is progressing satisfactorily. Approximately 20 per cent of Selectees received were either skilled or semi-skilled.

Organization Day

On March 3rd, as on similar dates for many years past, the Fifth Cavalry celebrated its Organization Day. All training was suspended for the day. The Organization Day exercises were held out-of-doors and consisted of selections by the Fifth Cavalry Band; addresses by the Regimental Commander; Brigadier General Innis P. Swift, U. S. Army, acting Division Commander, and Brigadier General John Millikin, U. S. Army, 1st Cavalry Brigade Commander. Master Sergeant Hans H. Bock, 5th Cavalry, the ranking Master Sergeant in the Division, read a prepared paper on the history of the Regiment. This was followed by presentation of the Colonel Scales Memorial by Lieutenant Colonel R. L. Creed, 5th Cavalry, to Headquarters and Service Troop for the coming year.

The exercises were followed by a Regimental Track Meet, which was won by Machine Gun Troop.

On the evening of Organization Day a dinner was held for the Officers and their families at the Post Officers' Club and a dance for the Enlisted Men at the Post Service Club.

Brigadier Innis P. Swift, Brigadier General John Millikin and Colonel H. J. M. Smith, the principal speakers at 5th Cavalry Organization Day exercises

New Devices

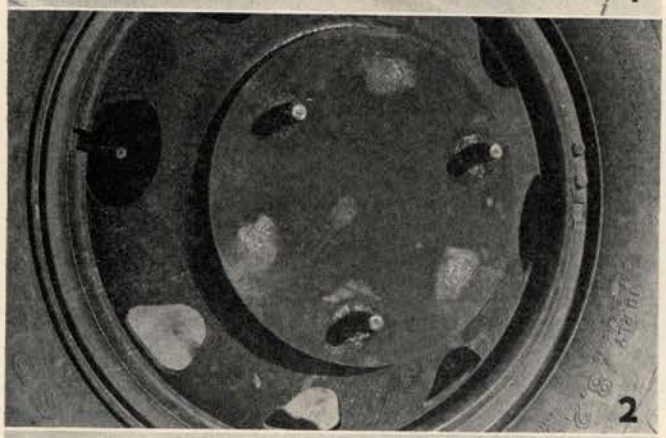
First Lieutenant Maurice E. Webb, 5th Cavalry, Regimental Motor Maintenance Officer, and members of the Transportation and Scout Car Platoons, Headquarters and Service Troop have developed three useful devices to be used in connection with motor elements. The first of these devices is a mount for the spare wheel on Scout Cars. Following are remarks and specifications on the mount.

To make up this proposed mount for the extra wheel on Scout Cars a piece of ½-inch boiler plate must be cut down to the same diameter of the wheel hub. Drill six holes through the plate to match the lug bolt holes on the wheel. Countersink the six holes on both sides of the plate and flush weld six short lug bolts in the holes, alternating the welding of the bolts as shown in Exhibits 1 and 2.

The disc is attached to the body of the Scout Car by drilling three holes through the armor plate and bolting the disc to the body. The wheel then bolts to the plate on the three alternating bolts.

The proposed location for mounting the spare wheel on the Scout Car is just in rear of the door on the right hand side as shown in Exhibit 3. This location will not interfere with the operation of the machine guns on the car or the door. The proposed location of the mount has one disadvantage in that it will unbalance the Scout Car but this can be corrected in the loading of the car.

The use of a brush guard is recommended in front



of the spare wheel to keep brush from jamming between the wheel and the car.

* * *

The *second* of the devices is a carrier rack for the spare gasoline drums which must accompany the trucks in the field. Heretofore, the drums have been carried inside the truck where they take up much needed room.

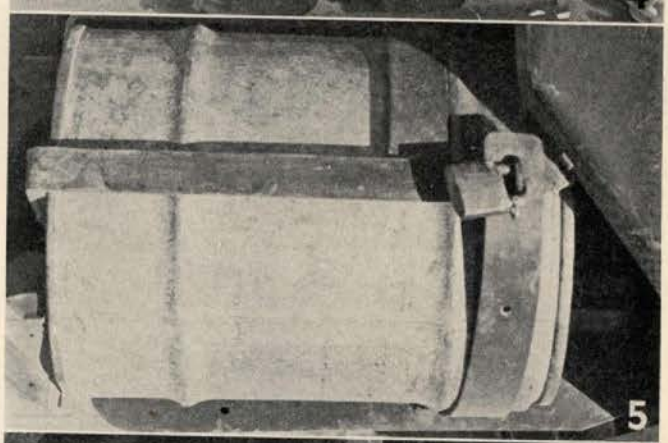
The idea for the carrier was developed from pictures furnished by the 6th Cavalry, however, several changes were made in the design, method of mounting, and method of holding the drum in the carrier. Following are specifications and remarks:

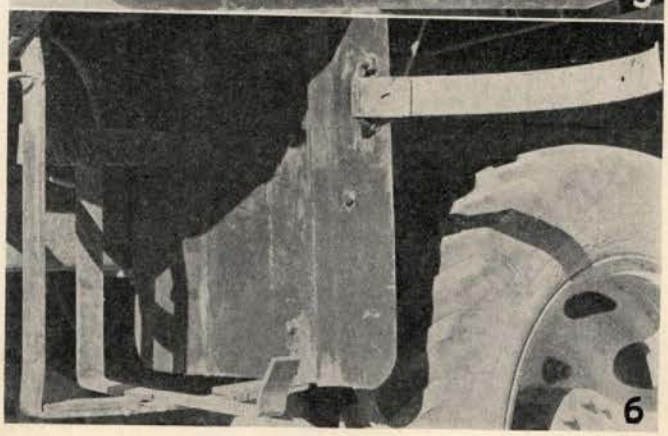
The drum is carried by brackets constructed of 5/16 x 2½-inch strap iron bolted to the splash guard and to the rear of the truck bed. The inside cross band is made of ⅛ x 2½-inch strap iron bolted to the splash guard and welded to the two upright brackets. The inside cross band is of the proper height to come just below the upper bead on the drum. (See Exhibit 4.) The outside cross band is hinged on the splash guard at one end and the opposite end is slotted, which allows the entire bracket to be locked. (See Exhibits 4, 5, and 6.) The outside cross band is just above the upper bead on the drum, which, when locked, holds the drum securely in place.

Since the pictured carrier racks were installed the vehicles have gone 5,000 miles without any repair or adjustment to the rack and they have been entirely satisfactory.

* * *

The *third* device developed is a machine gun mount to be used on the trains. This mount is on a 6′ x 6′ platform over the cab on a 6 x 6, 2½-Ton, Cargo Truck. It will allow the gun to be traversed 360 degrees and elevated from 15 degrees below horizontal to vertical position. By having the two holes along the upper edge of the cradle, either the light machine gun, heavy ma-





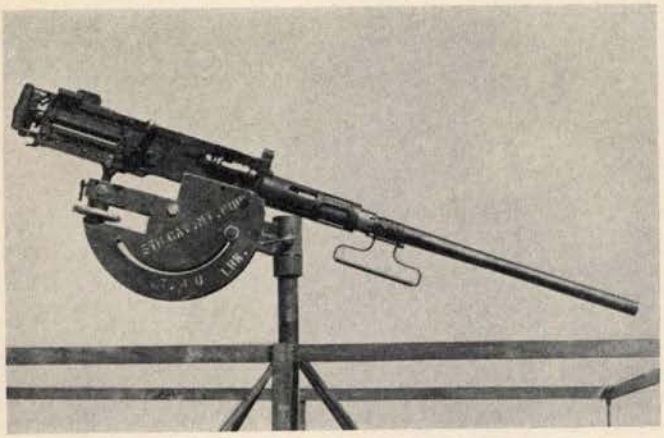


Exhibit 7

chine gun, or caliber .50 machine gun can be mounted.

Following are specifications and remarks regarding the mount:

The cradle is constructed of two pieces of 5/16-inch flat stock. The two pieces of flat stock are separated 2½ inches and held in position by 5/16 x 2" flat stock spacers welded on the inside and the arm extended from the upright shaft. The arm is constructed of four pieces of flat stock welded in such a manner as to form a truss. (See Exhibit 7.)

An elevating device is attached at the rear of the cradle for minor changes in elevation. All locks can be loosened resulting in a free gun for antiaircraft fire.

9th Cavalry—Fort Riley, Kansas

LIEUTENANT COLONEL D. G. RICHART, *Commanding*

The 9th Cavalry began working at its new mission, that of a combat rather than a service regiment, during October, 1940. It is beginning its new task with much enthusiasm. The transformation being brought about by the new mission is highly noticeable even to those not familiar with the former duty of the regiment. There has been, and continues to be a marked uptrend in the morale of the troops; and mere knowledge of the fact that we are now a combat regiment has been sufficient incentive to many soldiers to become more particular and even meticulous about their brass and uniforms. It seems overnight the different troops have become imbued with a spirit of friendly rivalry to excel one another in all things pertaining to the military life, drills, athletic contests, marksmanship, military courtesy, hygiene, and other things that go to make a soldier.

Lieutenant Colonel Duncan G. Richart assumed command of the regiment on January 7, 1941, and, despite the many demands being made of the organization, we have been able to keep the training program progressing steadily.

Concurrently with the task of training its own men to give instructions to selective service men, the regiment has been confronted with the additional problems of furnishing cadres for the Cavalry School Detachment (Colored), the 76th Coast Artillery (AA), Fort Bragg, North Carolina, the 349th Field Artillery, Fort Sill, Oklahoma, the 52d Ordnance Company, Savannah Ordnance Depot, Proving Ground, Illinois, and the 40th Ordnance Company, Proving Ground, Aberdeen, Maryland. From present cadre requirements yet unfilled, it is estimated that there will be approximately 160 men left for duty upon completion of all requirements!

Sixty horses were received by the 9th Cavalry on January 2, 1941, from the Quartermaster Remount Depot, Fort Reno, Oklahoma. We were fortunate in receiving well-broken remounts, and began to use them two days after their arrival. These were the first horses that had been assigned actually to the 9th Cavalry in 18 years and marked the beginning of a very important new period in the history of the 9th Cavalry.

In addition to the six troops and Band constituting the 9th Cavalry troops, Special Weapons, C, and G Troops were activated on January 15, 1941, cadres being furnished by the older units. The cadre of Special Weapons Troop, due to the technical nature of their duties, consisted of men selected from the Machine Gun Troop.

In order to bring the regiment up to a number sufficient to put the training program into effect, the necessity has arisen for greatly increasing the strength of enlisted personnel, as well as officers. Therefore, 200 selectees were requisitioned on January 21, 1941. Inasmuch as 105—9th Cavalrymen are on SD with the Cavalry School Detachment, it will be necessary for the 9th Cavalry to train 160 men for duty with the Detachment in order that the men on special duty from the regiment may be relieved therefrom and recalled to the regiment.

10th Cavalry—Fort Riley, Kansas

LIEUTENANT COLONEL P. R. DAVISON, *Commanding*

Since the last issue of THE CAVALRY JOURNAL the Tenth Cavalry has expanded to its war strength of nine troops and the whole regiment assembled at Fort Leavenworth. From a strength of five officers and 300 men in December, the regiment, including the troops from West Point and Fort Myer which joined us February first, has increased to sixty-three officers and 1,100 men.

Lieutenant Colonel W. H. W. Youngs, after commanding the regiment for two years, left January 28th for duty with the 5th Corps Area and Lieutenant Colonel Davison assumed command. When Lieutenant Colonel Youngs left the regiment, all the officers led by Lieutenant Colonel Davison and a platoon of scout cars manned by the old noncommissioned officers escorted him to the station.

On February 1st the regiment was formed in the

The Tenth Cavalry headed by Lieutenant Colonel Davison passing in review before the first Selectees received by the regiment on 8 March, 1941. Seventy-five per cent of the mounts are remounts with five weeks' training

Lower Riding Hall and the order activating troops "C" and "G" and Special Weapons Troop was read. The ceremony was concluded with brief addresses by Colonel Davison and General Gruber, the Post Commander.

The first regimental party in ten years, a dinner dance, was held at the Hunt Lodge on February 7th.

The regiment received 300 remounts February tenth and has been busy training and conditioning them so that they can be used by the 800 Selectees who were received between March 5th and 12th.

On March 8th a Regimental Review was held on the Grant Avenue polo field to welcome the new Selectees to the regiment.

On March 14th the Regiment entrained at Fort Leavenworth and arrived at Fort Riley to take their permanent station in new cantonment barracks in the Camp Funston Area.

The training for the next three months will follow the mobilization plans to train over 800 Selectees and to have them ready for field service.

12th Cavalry—Fort Bliss, Texas

COLONEL WILFRID M. BLUNT, *Commanding*

Instructions received from the War Department on January 15, 1941, directed the movement of the elements of the 12th Cavalry stationed at Fort Brown and Fort Ringgold to Fort Bliss, Texas, for permanent change of station, early in February.

The movement was ordered by rail and motor and was coördinated with the movement of the 56th Cavalry Brigade, Texas N.G., which was to take over the border stations.

The motor elements consisting of Headquarters and Service Troop under Captain C. J. Hoy, with a detachment from each of the other troops, constituted the advance detail. This column left Fort Brown on Sunday, February 2d, and was joined at Fort Ringgold by the Detachment Headquarters and Service Troop and small detachments from the other troops at that station. Vehicles were grouped in accordance with their normal employment and the march conducted as a tactical exercise which provided valuable training in reconnaissance and communications as well as in convoy work. This detachment arrived at Fort Bliss on February 5th where it took over a cantonment to prepare for the arrival of the regiment two days later.

The remainder of the regiment moved in three standard troop trains; two from Fort Brown, one under command of Major Robert Edwards and the other under command of Lieutenant Colonel Alexander B. Mac Nabb; and one from Fort Ringgold under command of Lieutenant Colonel Frederick R. Lafferty. Each train consisted of the necessary Tourist Pullman, Baggage, Kitchen, Stock, and Freight Cars to transport tactical units complete with men, horses, and equipment. In the shipment from Brown an experiment was tried of segregating mares from geldings. From the negligible number of injured animals it is believed that this was a worthwhile precaution. Another precaution against injuries was to have the stock cars placed in the train just behind the engine. However, this make-up precluded any heat in the Pullmans and as a severe norther blew up, the arrangement of some of the trains was changed en route.

Meals were cooked on the new type gasoline field stoves which were installed in the kitchen cars and proved thoroughly efficient. While the horses were somewhat drawn after two cold days of traveling, the trip proved a real holiday for the men. In this connection the railroad officials were very complimentary about the cleanliness of the Pullmans, the efficiency of the messing managements, and the behavior of the troops.

On February 7th the regiment was again reassembled permanently at Fort Bliss after having been separated for twenty years, and many changes have taken place since the first of the year.

Colonel Wilfrid M. Blunt took command on January 15th, relieving Colonel Arthur E. Wilbourn who

was detailed in the Inspection General's Department on January 10th. On arrival at Fort Bliss a new regimental staff was announced to replace the staffs brought from Forts Brown and Ringgold. The new appointments included: Lieutenant Colonel Eustis L. Hubbard, Executive Officer; Lieutenant Colonel Alex. B. Mac Nabb, S-1; Major Robert Edward, S-2; Major Henry L. Kinnison, S-3; Lieutenant Colonel Frank C. DeLangton, S-4; Lieutenant Guy H. Murphy, Personnel Adjutant; Lieutenant Colonel Callie H. Palmer, CO, 1st Squadron; Lieutenant Colonel Frederick R. Lafferty, CO, 2d Squadron; Major Clarence K. Darling, CO, Provisional Squadron.

After arrival at Fort Bliss, a few days were required to get settled in the new environment and to become accustomed to the luxuries of gas stoves in each tent, hot and cold showers, etc. However, with the receipt of 239 selectees and 200 remounts training is now in full swing.

While leaving its former stations was not easy, the regiment has received a warm welcome at Fort Bliss. On arrival the 7th Cavalry was host to the entire regiment for its first meal and a post reception was held to welcome the officers and their families. Many old friendships have been revived and the Rio Grande Valley is now but a pleasant memory.

Thirteenth Armored Regiment (L)—Fort Knox, Kentucky

COLONEL R. E. MCQUILLIN, *Commanding*

During the past weeks the regiment has been engaged in a variety of activities from a half-hour broadcast on March 15th, over Station WHAS, Louisville, Kentucky, to participation in numerous Brigade and Division problems and demonstrations.

Nine hundred and ninety selectees have been trained by the regiment and numerous details of instructors and equipment furnished the Armored Force Replacement Center, Division Officers' Training Center, and the Armored Force School. At the present time over 200 men are students at the Armored Force School.

On February 27th, a Regimental Parade was held in honor of Master Sergeant Frank N. Canning, Service Company, and First Sergeant George H. Loyd, Machine Gun Company, who retired February 28th, after completion of over 30 years service. Also on the evening of the 27th, a Retirement Party was held in the Post Gymnasium, honoring these noncommissioned officers. The Armored Force Commander, Major General Scott, the Brigade Commander, Brigadier General Baird and the Commanding General Armored Force Replacement Center, Brigadier General Heard were present and each made a short address.

In the near future the regiment will furnish personnel both commissioned and enlisted for the new 7th Armored Regiment of the 4th Armored Division to be organized at Pine Camp, New York. In addition, commissioned personnel will be sent to other armored divisions and enlisted personnel to the GHQ tank battalions. The necessity for rapid expansion has resulted in the promotion of numerous noncommissioned officers, and prospects are that the flow of promotions in the noncommissioned grades will be considerably accelerated in the next few months.

Prospective losses of experienced commissioned and enlisted personnel will be compensated in part by assignment to the regiment, during March and April, of approximately seventy officers and five hundred men who are now receiving basic instruction from other agencies. To absorb these replacements, and weld them into the regimental combat team, will constitute the primary training objective of the regiment until participation in the forthcoming corps and army maneuvers takes precedence.

102d Cavalry (H-M)—Fort Jackson, South Carolina

COLONEL DONALD W. MCGOWAN, *Commanding*

The 102d Cavalry (H-Mecz) was inducted into Federal Service on January 6, 1941, with a strength of 66 officers and 947 men.

Due to the illness of Colonel Henry L. Moeller, Colonel Donald W. McGowan, the Deputy Adjutant General of New Jersey was inducted as the Regimental Commander.

The regiment lost but one officer and 18 enlisted men for physical reasons upon induction. Arriving at Fort Jackson on January 16th, the Regiment was inspected by Major General Philip B. Peyton, Commanding the 1st Army Corps, on January 21st, and commenced its 13-week Mobilization Training Program the following day. Subsequently informal inspections were made by Lieutenant Colonel Charles H. Gerhardt, from G.H.Q., and Colonel Augustus F. Danneimiller, representing the Inspector General.

Range firing with the light and heavy machine guns and the M-1 rifle has been completed. In addition, the Mechanized Squadron fired a limited number of rounds with the Thompson Gun, and all personnel not having previously fired the .45 Calibre Pistol, fired an abbreviated instruction course.

Two hundred remounts have been received and in addition the full complement of scout cars and 41 Horse-Trailers.

As the Regiment completes its seventh week of training it chalks up the following accomplishments:

All remounts doing full duty.

Difficult driving course completed by all scout car drivers.

On April 1st, the Regiment expects to receive 450 selectees from New Jersey, to be shipped from Fort Dix.

All range firing completed except with the .50 Calibre Machine Gun.

Completion of a one-month S-2 school by 12 officers and N.C.O's.

Radio School in full operation with 125 students.

Cooks' and Bakers' Schools for eight students.

Evening Classes three nights per week for officers.

Colonel John Considine, Commanding the 6th Cavalry has arranged for a visit of all troop commanders to Fort Oglethorpe during the week of March 10th, and during the week of March 24th, regimental and squadron officers will visit the 6th for a week's training.

Troop A, 102d Cavalry was recognized following the World War on 9 Dec. '19, the regiment 29 April '21.

106th Cavalry (H-Mecz)—Camp Livingston, Louisiana

LIEUTENANT COLONEL CHARLES R. JOHNSON, JR., *Commanding*

The 106th Cavalry was inducted into Federal Service on November 25, 1940, at an authorized strength of 1,132 men. Headquarters and Service Troops were stationed at Urbana, Illinois, the First Squadron (horse) in Chicago, Illinois, and the Second Squadron (mechanized) in Springfield, Illinois. At this time 69 officers were inducted, an overstrength to be absorbed upon going to wartime tables. At the time of induction the permanent Regimental Commander, Colonel Kenneth Buchanan, was on duty in Washington with the GHQ for a protracted period. His induction had preceded that of the Regiment.

At the earnest request of the Regiment induction took place on schedule, even though the Regimental Camp in Louisiana was not entirely completed. Fourth Corps Area gave permission for the mechanized squadron to arrive in Louisiana on December 16, 1940, and other units subsequent to January 4, 1941. Elements started training in their home stations while waiting to move, being housed in the excellent Chicago armory, and the fine Urbana armory, with the Springfield squadron quartered in commodious 4H buildings at the Fair Grounds. All training facilities were excellent.

Headquarters Troop and the mechanized squadron, all under the command of Lieutenant Colonel Plaisted, marched from home stations on December 12, 1940, on a time schedule that had been prepared two weeks in advance. Every town and village appearing on highway maps was used as a check point and in no case was the column more than two minutes ahead of or behind its schedule at any one of these small villages. Commercial gasoline stoves, installed in trucks, permitted hot meals at the noon halts. The march was made with no AWOL's, no police cases, and no accidents. Overnight halts were made in armories made available through the courtesy of the Adjutants General of Illinois, Arkansas, and Mississippi. During the entire march it never stopped raining.

Service Troop and the unequipped motorcycle troop arrived by rail January 4, 1941, under the command of Captain Homfeld. On January 5, 1941, the horse squadron, commanded by Major Keehn, detrained at Camp Livingston.

Even though the camp was still under construction when we arrived, the men were extremely comfortable in their gas heated tents and modern mess halls. The construction people, working three eight-hour shifts, did everything in their power to be obliging, and the Regiment is deeply grateful to all, down to the lowest ranking pick and shovel man.

Three hundred extremely satisfactory remounts have been received from Front Royal and our thanks go to Lieutenant Colonel Pleas B. Rogers, of Front Royal. We now have all our scout cars, the bulk of our horse vans, but are woefully short on motorcycles. The tractors for the horse vans have not yet arrived.

Since induction, the Regiment has been authorized to go to 1,390 enlisted and 70 commissioned, and soon expects to go to an aggregate of 1,590.

Health of the Command has been excellent. We have had no epidemics, few injuries, and no G.O. 6 cases at all.

113th Cavalry (H-M)—Camp Bowie, Texas

COLONEL MAXWELL A. O'BRIEN, *Commanding*

The regiment arrived at its training area on January 25th, having left home stations on January 23d, following induction on January 13th. Four trains, arriving between 7:00 AM and 3:00 PM, were employed for the 47 officers, 925 enlisted men, 230 animals, baggage and impedimenta.

A motor convoy, comprising 45 vehicles, arrived on January 23d. Prior to this movement a reconnaissance of the route was made by the motor officer. As the vehicles were at their various home stations, an assembly point was designated for the morning of January 21st, in Osceola, Iowa, and the trip started from there.

An intensive thirteen-week training program was started on February 3d, and is believed to be progressing satisfactorily, although somewhat hampered by lack of equipment. On February 3d, 120 animals were received from Fort Reno. These animals were formerly in the hands of National Guard units, whose organization was changed. By and large, they are an excellent group of animals, containing some pack horses, which are very much needed in the regiment. Other partial receipts of equipment include: 52 Scout Cars, M3A1; 25 Trailers, animal and cargo, W/O truck-tractor; 2 Ambulances, field; and a few other smaller items.

Schools are being conducted daily and in the evenings, after mess, in Communications, Rifle and Pistol Marksmanship, Machine Guns. Weapon schools in the 36th Division are also attended, as are others including Intelligence, Chemical Warfare, and Motor Maintenance. Training films are being employed to the fullest extent.

Eight officers are attending the basic course at the Cavalry School, and will return to the regiment about March 10th. Five officers to the basic course, one to communications course, one to the motors course, and enlisted men to motors, communications, horseshoers, saddlers are detailed to attend the courses at the Cavalry School commencing March 17th. Fourteen cooks are in training in the Bakers' and Cooks' School, with an additional quota of seven more to go for courses starting March 15th and April 15th. Motorcyclists are to be sent to Indian Motorcycle Factory, Springfield, Massachusetts, for a training course.

A rainy period seriously hampered outside instruction, but not to an extent, but what a few days of sunshine will remedy.

All in the regiment feel that Camp Bowie and the maneuver area are well suited for an intensive year's training. Advance information to the effect that 450 recruits will arrive about March 13th, will find the regiment only 91 short in man power.

The regiment was organized July 4, 1915.

306th Cavalry—Baltimore, Maryland

COLONEL MATTHEW F. JAMES, *Commanding*

At the first conference in January the training film "Defense of Areas, and Dismounted Columns Against Attack Aviation" was shown. After this meeting the officers of the Baltimore units hoisted a few in farewell to Lieutenant Colonel Skinner and Lieutenant Jarman who left for active duty at the Cavalry Replacement Center at Fort Riley. The last unit conference of the Regiment in Baltimore was held on February 3d and was conducted by Major Warner, and was on "Defense Against Attack Aviation" and was followed by the movie "The New Infantry Drill." Group conferences attended by the remaining Baltimore officers were ones held by Colonel Bruce Palmer who lectured on "The Technique of Tanks."

308th Cavalry—Pittsburgh, Pennsylvania

CAPTAIN ROBERT C. WALLACE, *Commanding*

Army Extension School work continues at a high mark, with a steady flow both from the members of the Regiment on an inactive status, and a considerable number of the many officers now on extended active duty. In addition, eight new officers have been assigned recently to the Regiment.

While a large percentage of the officers maintaining mounts in the Regimental Stable have left for extended active duty, their horses are being taken over by others not yet called, or otherwise retained, and it is the intention to keep in existance this highly desirable facility as long as possible. Weekly rides have continued throughout the winter, and the mounted activities will be increased as the conditions of weather and footing improve.

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When one subdues men by force, they do not submit to him in heart but because not strong enough to resist. When one subdues men by virtue, they are pleased to the heart's core and sincerely submit.

—From *The Wisdom of the Chinese,* Mencius 374 B.C.

"Japan has modern weapons, China 4,000 years of history during which she has been conquered but never absorbed."

—From *China Fights for Her Life,* Ekins and Wright.

General Wavell

*By Major General Sir Nevill Smyth, V.C., K.C.B., 1st A.I.F.**

GENERAL Sir Archibald Percival Wavell, Commander of the British and Australian Forces in the Near East, has had unrivalled experience both of the topography and of the human elements comprising the populations extending from the Caucasus to Ankara, the Levant States, Jordan, the Nile Valley and the oases of the Libyan Desert.

Several facts about him have been circulated in the Press; thus his father and grandfather each rose to the rank of major-general and he went to the South African War at the age of 19 as an officer in the Black Watch.

In 1928 he published a book on the Palestine campaigns and he has lectured more than once on strategical subjects. In December, five years ago, at the Royal United Service Institution, Whitehall, he discussed the essential qualifications for the Higher Commander, the modern conditions in which High Command has to be exercised and, that which is of particular interest to us, he suggested certain measures which could produce adequate commanders for war.

Two Types

He showed that there are two types of general—the one fitted for independent command; confident in his knowledge, his ability and delighting in responsibility; and the other excellent while serving under the orders of a superior, but apt to be at a loss when in sole command. The first is often a difficult subordinate and may even border on the rebellious.

Generals with great peace reputations often fail in war. All material of war, including the General must have a certain solidity, a high margin over the normal breaking strain. A robust physique and robust mind are the first essentials.

He quoted Xenophon, who was born about 440 B.C., and shows that the same qualities were required in a General then as at the present day.

Physical courage we are apt to take for granted as the Duke of Wellington did for all British officers, and although it is not as essential as in the days of close range fighting he says, "I do not see how any General can properly exercise command without constantly risking his life to make personal reconnaissance both from the ground and in the air."

Moral Attributes

Next to physical qualities come moral attributes; the fighting spirit. The man who in a game plays best when the result hangs in the balance has a value which the modern highbrow defines as a superiority complex. To this must be added loyalty, straightness, simplicity. He must know what he wants and that must be victory.

Then as to his mental make-up: Military learning must be based on a solid foundation of common sense, imaginative common sense or foresight and a knowledge of what is and what is not practicable. It sounds rather obvious, but is indispensable.

General Wavell wisely advises that in dealing with soldiers of other nationalities, unless he has a gift that way the officer had better not try to talk their language, but the more general knowledge he has of their characteristics and point of view the better.

I remember the late Sir Henry Wilson on being told that a person spoke six languages remarked "you mean he can make a fool of himself in six languages."

There is one thing about the Arabic language that it is well to remember: There are so many accepted dialects of it that it is better if one cannot hold forth in the highest idiom to converse in rough Arabic, for thus one at once gains the confidence of Arabs or educated Moslems the world over who very often do not quite trust an interpreter.

But to return to General Wavell and his view of the war of today.

On the ground the commander will have to handle forces moving at a speed and ranging at a distance far exceeding that of the most mobile cavalry of the past. A study of naval strategy and tactics, as well as those of cavalry, will be essential to him. Needless to say he must be able to handle air forces with the same knowledge as forces on land.

It seems immaterial whether he is a soldier who has really studied the air or an airman who has really studied land forces; it is the combination of the two—never the action of one alone—that will bring success.

Then he says: "No one should hold the rank of Higher Commander without having had at least six months really close association with the Air Force within a few years of his promotion."

*From *Reveille*, Australia.

The reader will observe that these proposals mostly apply to peace training and they reveal a disposition to escape from the routine centralization of the War Office which has resulted in a definite weakening in the Higher Commander link in the chain of command.

"I think," said he, "that the Staff College looms rather too much in the opinion of the ordinary regimental officer as the only possible way of reaching higher rank, and that an officer who has not passed through the Staff College is inclined to consider that the prospects of higher rank in his military career are more or less at an end. I think that this is not and should not be true, and that it is not a good thing for the Army that many should so regard it. (War has closed the college.) N.C.O's do the work of junior officers to a very large extent; it is right that they should do so and they should be so trained with the view of being promoted to commissions in war."

Perhaps the reader may think some of these views unorthodox and demanding the impossible, but I feel confident that all will agree that General Wavell's opinions disclose the true soldier spirit of a leader who can be relied upon to lead, to act, to execute and to achieve.

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CARDED

German Horse Cavalry*

"The splendid achievements of German armament did not only apply to the motorized and mechanized units of the *Fast Troops*, but also to the mounted ones—*the horse cavalry*. At the beginning and during the course of the World War, the German Cavalry lacked the armament and equipment to enable it to break through and penetrate hostile resistance. This defect has been remedied today. A propaganda-company report throws some light on the pursuit operations of the German cavalry division after the occupation of Paris. In spite of strong enemy resistance on the Seine and Loire and at Samur, this cavalry division was able to travel 70 and even 100 kilometers (44-73 miles) daily. Hence this division was able to beat the retreating enemy to the critical river crossings, thus permitting the rapid and uninterrupted advance of the following army troops. That the modern German cavalry is even equipped for the defense against a modern offensive enemy, is proved by one of the army communiqués which states that a cavalry division destroyed 34 out of 40 attacking tanks."

*From *Deutschewehr*, August 23, 1940.

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CARDED

Horse in German War Operations*

Have present conditions changed much in comparison with those existing during the World War 1914-1915? This question may be answered with "No." On the fixed Western front the addition of Cavalry was neither necessary nor possible during the second phase of the World War. Then, a Cavalry attack in front of Verdun and on the Marne would have been as suicidal as an attack of the Siegfreid or Maginot Line. Entirely different are conditions on other fronts. Terrain and road conditions in the Balkans and in Eastern Europe remain the same today as they were 25 years ago. The few auto roads, constructed since then, do not alter the picture to any great extent. With light battle forces such roadways "avenues" have no significance anyway. Whoever, as a member of the larger forces, took part in pursuit of the enemy over a Serbian or Rumanian Road —mountain trails need not be considered—he knows, that for man, cannon, munition, and provision there is but one transportation that never fails—the horse. Whenever draft or motorized baggage or ammunition wagons, whenever field kitchens mire or encounter impassable obstacles such as wrecked bridges, landslides, and the like it is always and only the horse or mule which alone can save the situation.

The corollary is clear: Not only Cavalry, but all troops whose mobility depends upon the horse, must have efficient riders, grooms, and drivers. The field or mountain Artillerist must be able to manage his horse as well as the Cavalryman. The tasks that fall to the lot of each in battle are frequently the same. Only in the most exceptional cases will the Mountain Artillery have any Cavalry detachments for purposes of reconnaissance or inter-communication. Too much attention can never be bestowed upon the systematic development of horsemen and mule skinners. Unfortunately Mountain Artillery quite frequently resorts to unwelcomed belittling of pack leaders by assigning deficient cannoniers to the latter. Good, reliable, and experienced animal leaders are as essential for the wartime

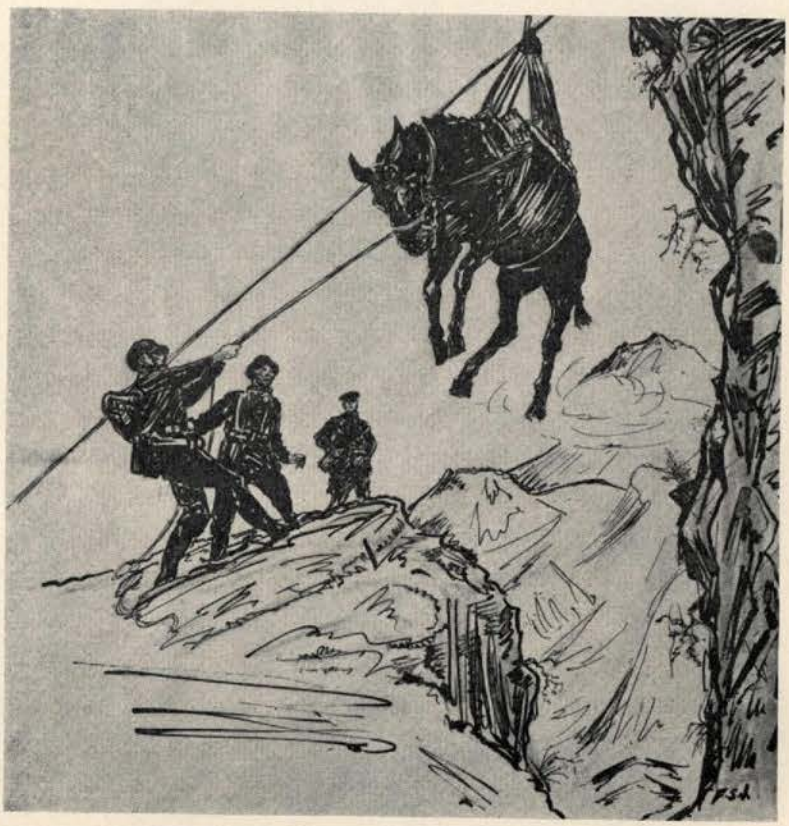
*From *Deutsche Kavallerie-Zeitung*.

efficiency of a battery as trustworthy cannoniers. A good groom is usually also a good animal leader. The latter must know his animal fully as well as a rider does his mount. What appears easy during peace time maneuvers may turn out to be a disastrous effort in actual warfare.

As example, we may serve an advance under enemy fire on a road that can be in view of an enemy observer. In most such cases, with guns taken apart, or with machine guns and ammunition stowed on pack animals, the advance is made at irregular intervals on the right and left of the road where ditches may afford some shelter, in order to reach a spot from which an effective bombardment of the enemy's position is possible. Here the animals follow each other in trace but at considerable distances. The pack leaders are then wholly on their own; they must be men absolutely dependable, trained to perfection, and thoroughly familiar with the peculiarities of their leads in order not to lose control over the mule or horse in such critical situations. And yet more hazardous is a like undertaking whenever, in the higher mountain reaches, cliffs have to be passed which happen to be under the enemy's eyes. Similar incidents cannot always be avoided.

Manifold are the tasks demanded from horse or mule during wartime operations—the same applies to the soldiers. Even in countries like Belgium or England where Cavalry in toto, or nearly so, has been hurriedly motorized, a shortage of horses exists. It is an indication that the motto for all countries must be "horse and motor." Legion is the number of Artillery positions to which ammunition can be brought only by the horse, draft or pack. During the World War it was shown that in the Dolomites with its magnificent highways, the final climb (Etappe) for maintenance of the troops in the very first line of battle was possible only with the help of the horse or mule. During rainy seasons in the Balkans, on their sloppy, deep, and squashy roads, every motorized column is brought to a standstill. Everywhere, where natural obstacles in mountain form are met, motorized troops will encounter limitations, which in many instances are appreciated only in emergencies. For the difference is great whether unimproved roads are passed over for days and weeks by masses of varied troops than when the same roads are used only now and then by some column. One column of mounted troops or pack animals will damage a road less than a horse drawn or motorized train of vehicles.

For the time being, both horse and Cavalry will remain an important, indispensable factor in the defense of all countries, that find it expedient, or are compelled, to resort to field operations or to war movements over roadless or mountainous regions.



"THE GREEKS HAD A WORD FOR IT"

Flame-Throwers and Their Uses

ALMOST startling weapon developed in the World War was the flame-thrower. This special tool of modern warfare was not looked upon then by all armies with equal favor. However, its reappearance on a considerable scale in the present war makes it again an object of much interest to all combat troops. The basis of the following discussion is an article which appeared in a recent number of the Swiss magazine, *Allgemeine Schweizerische Militärzeitung:*

The earliest studies dealing with the construction of flame-throwers date from early in the present century. The German Army made the first experiment with the flame-thrower and by 1914 had actually constructed some of them. During the first month of the first World War, the flame-throwers were tried out to determine the best ways of using them. The first assault with these weapons was at Malancourt, on the Western Front, on February 25, 1915. The limited successes gained in these attacks were insufficient to impel the Allies to build similar weapons.

All flame-throwers have the same basic principle. They consist of two containers, one holding the oil—a mixture of tar residues, hydrocarbons, creosote and carbosulphide—and a second container, connected with the first by a valve, which holds compressed gas, preferably nitrogen. This gas, of course, is the propelling agent. When the valve is opened the gas forces the oil through a pipe, and as it comes out of the nozzle the oil is ignited by means of a fuze or pilot light.

The range of a flame-thrower depends upon two things: First, the amount of pressure exerted by the propelling gas. This must not exceed a certain limit, so that the oil stream will not scatter. Second, the thickness of the stream of flaming oil. This has to vary with the duration of the assault, since oil consumption naturally rises with the increase in diameter of the oil stream. Thus range and duration of fire depend also upon the weight of the equipment and oil that has to be carried along.

Two main types were used during the World War: fixed and portable. The following table shows the development of flame-throwers:

Type	Range (ft.)	Oil (gals.)	Duration of fire (sec.)	Weight (lbs.)	Remarks
1. Fixed					
Hersent Thiriont (French)	100-260	131	20	4,000	Stream could not be interrupted.
Schilt 1 (French)	80-100	21	20-25	275[1]	Coupling several flame-throwers produced a range of 130-200 feet. Duration of fire 20 seconds.
Schilt 1-bis	80-100	14	20-25	190[1]	
Schilt 2	80-100	8	20-25	155[1]	
Grof (German)	115-130	26	40	165[1]	
2. Portable					
Wex	80	3	20	22[1]	Approx. 18 bursts.
Schilt 3-bis	80	3	25-30	66[1]	Approx. 28 bursts.
Schilt p3	80	3	25-30	53[1]	Approx. 28 bursts.
Schilt p4	80	2 6	20	42[1]	Approx. 15 bursts.

[1]Empty.

Fixed types of flame-throwers are not in use today, but data on their construction can probably be applied to flame-throwers built in tanks. These modern types have a range of over 300 feet and can deliver from fifty to a hundred bursts, with a total duration of fire from one to three minutes. Italy has for a number of years armed her tanks with flame-throwers, and the German Army used them with great surprise effect in the Battle of Flanders.

No doubt, also, the construction of portable flame-throwers has been greatly improved, especially through using light materials. These now have ranges up to 115 feet, and a duration of fire between thirty and forty seconds with as many bursts.

The stream of fire from a flame-thrower acts primarily through the flaming oil itself but the effective heat radiates out to approximately three times the diameter of the stream of oil. Flame-thrower personnel has to be protected by asbestos cloaks. The oil stream acts further through its poisonous combustion gases, especially when it is directed into closed spaces, like dugouts and pillboxes. As the stream strikes a surface the incomplete combustion creates carbon-monoxide.

At the point of impact, the effect of the oil stream is immediate and complete. But the moral effect is even greater than the material effect. This is definitely proven by the number of prisoners taken in flame-thrower operations. On June 1, 1916, the German 66th Infantry launched an attack in the woods of Caillette, near Verdun, preceded and strongly supported by a company which had five fixed and twelve portable flame-throwers. Besides gaining considerable ground, the regiment captured 1,900 prisoners, including two regimental commanders and sixty other officers.

In fighting tanks, flame-thrower crews aim the stream of fire at slits and other apertures. The oil that gets inside the tank keeps on burning, of course, and may ignite anything that will burn. In any case, the inside temperature of the tank will usually rise at once when burning oil enters any aperture. And, when a tank is enveloped in flames, the air used by the motor is deprived of oxygen, which reduces the speed of the tank or stops it entirely.

During the first World War fixed flame-throwers were employed for offensive action in position warfare, where the opponents faced each other at close range. The fixed types served to put the enemy in the advanced trenches out of action and to deliver fire concentrations with surprise effect, thus preparing for a penetration of the hostile front lines. This type of equipment is of no avail in combat of the kinds so far engaged in in the present war. In fact, no mention has been made of the employment of fixed flame-throwers. Fixed flame-throwers might be used effectively in the defensive to

cover small sectors, except that their effect is of such limited duration. In certain circumstances fixed equipment might play a rôle in short-range defense of fortifications.

Portable flame-throwers form part of the armament of assault units. Flame-thrower units, protected by the supporting fires of all weapons and taking full advantage of all cover, close in on hostile strong points and pillboxes. Resistance encountered in closing on these objectives is overcome with hand grenades and automatic rifles. If a flame-thrower operator finds he cannot approach within range of his target, he delivers a burst and then pushes on to effective range under cover of the smoke screen he thus creates. It may be best to blast the objective before committing the flame-throwers to action. Then again, the demolition may be carried out with flame-throwers in support. Their function then is to wipe out or neutralize close resistance, or with their smoke screen prevent the enemy from observing the advancing demolition party.

Flame-throwers are also useful in street fighting, where they are used to smoke out cellars and buildings at ranges too long for accurate aim with hand grenades at windows or doors. Flame-throwers will also cause local fires, thus spreading confusion among the enemy.

In the offensive, the flame-thrower is not so much a weapon of favorable chance as one that should be given a definite job after careful reconnaissance. The flame-thrower as such cannot be used to insure continuity of an attack within a given zone, excepting when it is possible to accompany the assault troops with enough flame-throwers to take care of all the separate tasks. How many would be needed can only be determined when the hostile situation is clear. Besides supporting certain individual actions, the primary employment of flame-throwers seems to consist in leading the assault troops, at the moment the support of the rear echelons ceases, that moral superiority essential to penetrating a strong position and continuing the attack on through it. In the present war, flame-throwers play a vital rôle in assaults directed at pillboxes and are used against them jointly with other weapons of offensive fire power.

In warding off a counter-attack, flame-throwers are used in defensive action at close range. On the other hand, they are rarely committed to action at the outset of a defensive action.

No information has been published concerning the tactical employment of flame-throwing tanks. They may be used against pillboxes where there is an accessible approach and also for antitank defense.

As for measures against foot troops, there is no individual protection against the stream of flaming oil. It should, however, be feasible to provide collective protection for pillboxes. Without discounting the actual effect, it must be brought home to the troops that the success of the flame-thrower depends mainly upon its moral effect. Any man who does not lie within the radius of the oil stream must accordingly direct his fire immediately against the flame-thrower. That is the best method of defense. For the operator of the flame-thrower makes a sizable target at close range, and the duration of effect of the flame-thrower is short. Once the moment of extreme moral strain is overcome, the success of the flame-thrower reduces itself to the actual material effect, and the attack of the hostile assault troops loses much of its momentum.

Book Reviews

AMERICA AND TOTAL WAR. By Fletcher Pratt. Smith and Durrell, New York, 1941. 318 Pages; Illustrated; Complete Index; $3.00. (Publication Date, March 21, 1941.)

This is the most expert unofficial appraisal of this timely subject that has come to our attention. In view of Mr. Pratt's numerous books, articles in our service journals, and recent commentaries in the *Saturday Evening Post, Time* Magazine, and the *New York Post,* the author has earned the distinction of being one of the better known commentators on the profession of arms.

While Mr. Pratt's complete analytical exposition is of intense professional interest and is comprehensive in scope, the following passage will interest cavalrymen:

"Which brings up the other great peculiarity of our military geography—the relatively heavy afforestation, accompanied by an infrequency of roads, which North and South America share. Both point in the same direction as the gables of the wooden house, the American individualism and trend toward marksmanship—toward rifle and pistol as the potent primary weapons for an army fighting under American conditions. Not that machine guns, mortars and howitzers should be neglected; but the organization that arms every man with a pistol, regardless of whether he is serving a mortar or not, is a good one to stick to. In wooded country there is no force quite equal to a group of intelligent small-arms men.

"Or no force but one. The tactical problem of any form of war may be stated as that of bringing weapons to bear on the enemy and keeping them supplied with ammunition. In open Europe the wheel, whether harnessed behind an animal or a gasoline motor, is the best method of accomplishing this result. But all wheeled vehicles are at disadvantage in country even lightly forested; and this is particularly true in America, with its incomplete road net. Woods drive wheeled traffic to the roads, canalize it, subject it to punitive aerial attack.

"But traffic on horseback can seep through woods at a rate even faster than on foot, and woods offer cover that take away the chief objection to cavalry in modern war—vulnerability. In the Finnish war and in the early stages of the Italo-Greek campaign many of the axioms of mechanical war turned sour—and the terrain of both countries is not too different from that of the eastern and western coasts of the United States, with the exception of a few spots of flatland like New Jersey. In such country the bombing airplane proved notably ineffective against combatants hidden under trees. Artillery only pulled its weight when it was light pack artillery that could be manhandled or carried on animal back. Even the all conquering machine gun was less useful than the rifle; and cavalry was of the very greatest use when it could forget the tradition of glitter and treat the horse as a mere instrument of transportation for men and weapons."

Mr. Pratt is not an alarmist, yet his dispassionate survey of our existing defenses makes one keenly aware of the necessity for swift and united action. There are no neutrals in total war.

AMERICA CAN WIN. By Major Malcolm Wheeler-Nicholson. The Macmillan Company, New York, 1941. 246 Pages. $1.75.

The fluent pen of Major Wheeler-Nicholson gives us another book. This one is in strange contrast with his recent *Battle Shield of the Republic.* Perhaps, in the interim, the author has discovered that much of his *Battle Shield of the Republic* was factually inaccurate; and that his statements, "These basic faults would make it difficult for the United States Army to win a war against a first-class military power," and, "The Army is still unable to supply officers who can be depended upon to lead troops capably in battle," etc., *are not true!*

With a release date of March 25, 1941, Major Wheeler-Nicholson reassuringly, but with apparent haste, writes that *America CAN win.* We can be assured also that his obvious plans for the immediate utilization of our military strength as outlined in his XIV Chapter, have already received meticulous and intelligent consideration by our War Department. His remaining chapters, for the most part, comprise a recapitulation of what has previously appeared in public print, culminating in his concluding virile paragraphs as follows:

"Let us stop deluding ourselves with catchwords.

"Until we drop, once and for all, that craven catchword, 'aid short of war,' we are unworthy of the freedom we possess. Unless we take our place as men, ready to fight again for the freedom for which our forefathers fought, we shall inevitably—and deservedly—drop back into the gray limbo of slavery.

"Unless we face the facts quickly and take action, it will be too late. Those facts are evident to anyone who reasons clearly.

"We cannot defend our nation and our hemisphere for several years to come without Britain. Britain cannot win against the overwhelming forces against her without adequate aid from us. Our aid is not and will not be adequate in time.

"There is no aid to Britain short of war.

"There remains only war.

"The question for us to decide is whether we shall fight now with everything in our favor, or whether we shall delay, dawdle, and waste time in idle talk until we are forced into battle at the time when conditions are worst for us. There is no question of war or peace.

"America MUST FIGHT."

AMERICAN RACE HORSES, 1940. By John Hervey. The Sagamore Press, New York. 255 Pages; Profusely Illustrated; $6.00.

American Race Horses, extremely informative and splendidly produced, has been proclaimed by the best informed horsemen of the world as the outstanding book on this fascinating subject. The photographs of each horse reviewed, with his or her five-cross pedigrees, are alone worth many times the price of the book.

American Race Horses is of vital concern, not only to racing men and women, but as well to cavalrymen and all who love horses—to those interested in steeplechasers, hunters, polo ponies, and saddle horses—for the thoroughbred appears across the entire horse horizon.

OFFICERS' MANUAL. By Colonel James A. Moss, U. S. Army (Retired). George Banta Publishing Company, Menosha, Wis., 1941. 384 Pages; $2.50.

For the older officers of our army this 1941 Revised Edition of *Moss's Manual* needs no introduction.

The following foreword by Major General H. H. Arnold briefly sums up the advantages of having this book in one's military library.

"*Moss's Manual* has filled a unique and urgent need in the field of military information in the United States for a generation, the more so because it is the kind of book which could not be produced as an official publication. Its unique values rests on its concern with customs and traditions which, if published officially, would cease to be customs and traditions and would constitute a code of conduct prescribed by regulations. Actions which have their roots in customs of traditions are above and beyond legislative or regulatory requirements and mark the individual taking them as one who has grasped the spirit as well as the letter of the tenets of his profession.

"In this revision of *Moss's Manual* the author has succeeded in perpetuating the most valuable of our older unwritten laws, and added some of more recent growth. The younger officers in the Army today will serve themselves and their Country better if they are familiar with the traditions that have guided their illustrious predecessors in the American military service."

ONE HUNDRED YEARS WITH THE SECOND CAVALRY. By Major (now Lieutenant Colonel) Joseph I. Lambert, Cavalry. The Capper Printing Co., Inc., 1939. 441 Pages. Bibliography and amply illustrated. $2.50 (at Headquarters, 2nd Cavalry, Fort Riley, Kansas).

Through over a century of gallant service, Indians of the north, east, south and west, Mexicans, Confederates, Spaniards in Cuba, Filipinos, and Germans "Over There" learned to respect the 2nd Cavalry, which now is stationed at Fort Riley, Kansas.

Colonel Lambert deserves great credit for his painstaking and thorough treatment of this volume. There are numerous informative and instructive episodes. Of particular interest is his description in Chapter V of the Fort Fetterman Massacre, which should be better known than it is.

Every Cavalry Dayroom and professional library should have a copy of this history of the 2nd Cavalry.

THESE MEN. By Maurice J. Swetland, Lilli Swetland, co-author. Military Service Publishing Company, 1940. 312 Pages; $2.50.

"For conspicuous bravery above and beyond the call of duty. . . ."

This is a fast-running story . . . a mosaic of several hundred individuals whose actions are recorded . . . touching the highspots of World War I, when America turned the tide and ended the gigantic struggle.

This story is also human. Men live and die in mud and blood-stenched trenches. In the individual action of *These Men* however, we find something glorious and inspiring in their daring and valor, honor and self-sacrifice.

CAPITÁN. By Lucy Merndon Crockett. Henry Holt and Company, 1940. 354 Pages; $2.00.

Capitán is the story of an army mule, fascinatingly illustrated by the author. Miss Crockett is an army girl, the daughter of Colonel Cary I. Crockett, Retired.

This unique, human interest story is written in the style of an autobiography, and as *Capitán* unfolds the chapters of his army career, there are numerous incidents which impel heart throbs and again, merriment. It is a story behind a story, since it has an authentic historical background that carries the reader through campaigns in Cuba, China, the Philippines, Mexico and even France. Rich in detail, it is a mule's-eye picture of the army and of the men in it who have fought for America.

There is something homely, gallant and appealing about *Capitán* that makes one wonder if after all he wasn't something of a hero.

WHAT THE CITIZEN SHOULD KNOW ABOUT THE ARMY. By Lieutenant Harvey S. Ford, FA. W. W. Norton Company, 1941. 223 Pages; index; $2.00.

Many times has this reviewer, interrogated by relatives or other civilians, wished that he were able to recommend to them some one volume which would give them the concise, authoritative, uptodate data about the Army which they wished. Lieutenant Ford's new book fills the bill admirably. The army man can now present to his civilian friends a copy of this book, and tell them that it contains the desired information, briefly and accurately expressed, and understandable to the average layman.

Lieutenant Ford, who has specialized in military research for a number of years, is now assistant editor of *The Field Artillery Journal*. Being stationed in Washington, having full access to information available in the War Department and being able to have his work reviewed by official sources, he was able to produce a volume which can be considered reliable in every way. The army officer and the enlisted man, as well as the civilian, will welcome this book, since it provides a compilation of many facts concerning which the average military man is imperfectly informed, or cannot easily obtain. Persons who have recently entered the military service will discover that it provides them with an excellent general orientation.

The author is to be congratulated, also, on the clear method of exposition. —W. S. N.

THE FLEET TODAY. By Kendall Banning. Funk and Wagnalls Company, New York and London, 1940. 346 Pages; $2.50.

We remember *West Point Today* and *Annapolis Today*. *The Fleet Today* is another of the author's excellently written and highly informative books for the layman. Beginning with the moment the young applicant enters the Recruiting Office, the reader follows his career step by step as an apprentice seaman during his basic training, through the service schools where he learns a trade and becomes expert in the technique of handling the modern instruments of war. We see him aboard the warships; his work, his play, his adventures, and his perils described in an easy-to-read style—exciting and dramatic pictures of little-known phases of Navy life.

Included in this book is a complete, uptodate list of every fighting ship in commission, building, or authorized.

Horse Feathers

Bantam Enthusiast

LIEUTENANT: "It runs so smoothly you can't feel it; so quietly, you can't hear it; has such perfect ignition, you can't smell it, and for speed—Sergeant, you can't even see it!"

SERGEANT: "Gosh, Sir, then how do you know the darn thing is there?"

* * *

The following rhyme accompanied a present to a horse cavalryman on his birthday. The present, of course, was a small toy horse.

In this day of mechanization
With the horse in jeopardization
And the fear of your stagnation
In the event of mobilization
Without a horse,

I have felt the inclination
And yielded to temptation
And have tried to save the nation
And the hope of civilization
With a horse.

The horseman's jaunty comeback:

Your wits in mobilization
Have conceived a jeopardization
For the horse (and my stagnation)
That's the bunk!

I fear no inclination
To swap the horse for mechanization
If we yield to that temptation
Then We're sunk!

* * *

The less we use our heads, the more we must use our hands and feet.

* * *

TRAINEE: "What does O.I.C. mean?"
CORPORAL: "Officer-in-Charge."
TRAINEE: "Oh, I see!"

* * *

You can lead a cavalryman to water—but why?

* * *

TRAINEE: "Gosh, that looks like a dray horse."
INSTRUCTOR: "Well, it's a white horse; and you cut out that baby talk."

FIRST SERGEANT: "This troop reminds me of Kaffee Hag—99 per cent of the active element has been removed from the bean."

* * *

Generally, when a trooper has a "buck" in his pants, the ants are not far away.

* * *

COLONEL: "Son, do you know what little boys who swear, become when they grow up?"
SON: "Yes, Sir—Cavalrymen!"

* * *

CAVALRY TRAINEE I: "Who yer shovin'?"
CAVALRY TRAINEE II: "Don' no: what's yer name?"

* * *

Provost Sergeant says, "Where there's a *chip on the shoulder,* there's usually *wood* above."

* * *

SERGEANT INSTRUCTOR: "Now when you troopers are on reconnaissance DON'T be like Columbus! When HE started out he didn't know where he was going; when he got there, he didn't know where he was at; and when he got home, he didn't know where he had been. Savvy?"

* * *

Recruit: When the cavalry commands FORWARD, why do they drawl, Haow-o-o?
Corporal: What we mean is, FORWARD, *AND HOW!*

War Department Changes

Cavalry Personnel

(From January 19, 1941 to March 15, 1941)

Captain S. F. Abrahms relieved detail in Q. M. C. Feb. 28, and assignment as asst. to constr. Q. M., Camp. Jos. T. Robinson; assigned 1st Armd. Div., Fort Knox.

Lieutenant M. W. Adams, relieved present duty, assigned Cav. School, Fort Riley, Kans.

Major C. P. Amazeen relieved 2d Cav. Div., Fort Riley; assigned 2d Armd. Div., Fort Benning.

Lieutenant Colonel W. B. Augur, relieved Campo, Calif., assigned Cav. Repl. Center, Fort Riley, Kans.

Lieutenant H. C. Baker, relieved Cav. R. C.; assigned Cav. Sch., Fort Riley, Kans.

Lieutenant Colonel F. H. Barnhart, relieved O. R., 6th C. A., Champaign, Ill., December 5; assigned 3d Cav. Brig., Fort Riley.

Lieutenant Colonel H. W. Benson, relieved Canon City High School, Colorado, March 1; assigned 7th C. A. Service Command, Fort Meade, S. Dak.

Lieutenant Colonel Frank E. Bertholet, from Pasadena, Calif., to 4th Corps Area Serv. Command, Camp Claibourne, La., sail San Fran., 12 April.

Captain P. H. Bethune, relieved Hq. and Hq. Co., 1st Armored Brigade, Fort Knox, March 25; assigned as instructor, C. and G. S. School, Fort Leavenworth.

Second Lieutenant J. E. Bickerton, relieved Fort Riley; assigned Philippine Islands, sailing from San Francisco, March 15.

Lieutenant W. H. Boyd, Jr., relieved Fort Knox, Ky., assigned A. F. Sch. Observation Av., Brook's Field.

Lieutenant Harry Bullock relieved Fort Knox, Ky., assigned A. F. Sch. Observation Av., Brook's Field.

Lieutenant W. L. Calhoun, relieved 3rd Cav., assigned 4th Cav. Brig., Fort Riley, Kans.

Lieutenant E. W. Callihan, relieved present duty; assigned Cav. Sch., Fort Riley, Kans.

Lieutenant L. S. Carson, relieved 3d Cav.; assigned 4th Cav. Brig., Fort Riley, Kans.

Lieutenant Colonel C. R. Chase, relieved Oklahoma Military Academy, Claremore; assigned Cav. School Det., Fort Riley.

Major C. C. Clendenen, relieved Augusta Military Academy, Fort Defiance, Va.; assigned as military attaché and military attaché for air, Caracas, Venezuela; to report in office, A. C. of S., G-2, Washington, D. C., December 15, for temporary duty.

Captain K. G. Clow, relieved 6th Cav.; assigned 2nd Armored Div., Fort Benning, Ga.

Lieutenant Colonel L. H. Collins, relieved Fort Bliss, March 8; to proceed home and await retirement.

Major F. Del Comfort, relieved Fort Myer, Va.; assigned as instructor, C. and G. S. Sch., Fort Leavenworth, Kans.

Lieutenant Colonel C. B. Cox, relieved as instructor, Wyoming N. G., Cheyenne, Mar. 10; assigned 115th Cav., Fort Lewis.

Lieutenant A. G. Crist, relieved 2nd Armored Div., Fort Benning, Ga.; assigned Cav. Repl. Center, Fort Riley, Kans.

Lieutenant Colonel G. P. Cummings, relieved Polytch. High Sch. and Jr. College, Riverside, Calif.; assigned Armd. Force R. C., Fort Knox; sailing from San Francisco to New York, April 12.

First Lieutenant R. B. Curtiss, relieved office, C. of S., Washington, D. C., February 18; assigned Cav. Repl. Center, Fort Riley.

Lieutenant Colonel J. F. Davis, relieved detail as member of G. S. C., assignment to G. S. with troops, and Hq., 2d C. A., Governors Island; assigned Armored Force; Fort Knox.

Lieutenant G. D. Dawson, relieved Cav. R. C.; assigned Cav. Sch., Fort Riley, Kans.

Lieutenant Wm. L. Delaney, assigned 10th Cav., Fort Leavenworth, Kans.

Lieutenant Colonel A. J. de Lorimier, relieved Univ. of Illinois, Champaign, March 12; assigned 1st Armored Div., Fort Knox.

Captain J. L. DePew, relieved 1st Cav., Fort Bliss, February 19; assigned staff, Cav. School, Fort Riley.

Colonel M. A. Devine, Jr. (Lieut. Col.), temporary appointment as colonel, Army of the U. S., terminated on arrival in U. S.; relieved detail as member of G. S. C., assignment G. S. with troops, and as mil. att. and mil. att. for Air to Paraguay; assigned 4th Div., Fort Meade, S. D.

First Lieutenant S. W. Downey, Jr., relieved 11th Cav., Seeley, Calif., March 7; assigned 3d Cav. Brig., Fort Riley.

Lieutenant Colonel E. F. Dukes, detailed as parole officer for U. S. Dis. Bks., Fort Leavenworth; Lieutenant Colonel E. A. Everitt, Jr., relieved.

Lieutenant H. W. Dune, relieved 3rd Cav.; assigned 4th Cav. Brig., Fort Riley, Kans.

Lt. Jack McK. Dunlap, Jr., relieved 3rd Cav.; assigned 4th Cav. Brig., Fort Riley, Kans.

Captain E. C. Dunn, relieved 4th Cav., Fort Meade, S. Dak.; assigned staff, Cav. School, Fort Riley.

Colonel H. M. Estes, relieved 4th Cavalry, Fort Meade, S. D.; assigned W. D., Bu. of Public Relations, Washington, D. C.

Lieutenant J. G. Farmer, Jr., relieved present duty; assigned Cav. School, Fort Riley, Kans.

Lieutenant Colonel P. C. Febiger, relieved as instructor Wyoming N. G., Cheyenne, March 11; assigned 11th Cavalry, Seeley, Calif.

Second Lieutenant P. R. Fennig, relieved 2d Cav., Fort Riley; assigned 1st Armored Div., Fort Knox.

First Lieutenant David McC. Flournoy III, from Ft. Riley, Kans., to War Dept., Bureau of Pub. Relations, Washington, D. C.

Major H. M. Ford, relieved 1st Cav. Div., Fort Clark, Texas; assigned to 2nd Armored Div., Fort Benning, Ga.

Lieutenant Colonel H. W. Forster, relieved Mattoon High School, Ill., June 1; assigned 1st Armored Div., Fort Knox.

First Lieutenant J. E. Fowler, relieved Brooks Field; assigned March Field.

Lieutenant Colonel E. A. Franklin, relieved 14th Cav., Fort Riley, March 1; assigned 9th C. A. Service Command, Fort Worden.

Captain J. F. Franklin, Jr., relieved Hq. 7th C. A., Omaha, and temporary duty at C. and G. S. School, Fort Leavenworth; assigned staff, Cav. School, Fort Riley.

Lieutenant Colonel Geoffrey Galwey, assigned as C. O. of troops, USAT Roosevelt, effective upon reporting for duty at New York Port of Embarkation.

Major Alex George, relieved, El Centro, California; assigned Cav. Repl. Center, Fort Riley, Kansas.

2d Lieutenant J. A. George, relieved Fort Riley; assigned Philippine Islands, sailing from New York, April 2.

Lieutenant J. P. Gerald, assigned 10th Cav., Fort Leavenworth, Kans.

Lieutenant A. R. Giesen, relieved 3rd Cav.; assigned 4th Cav. Brig., Fort Riley, Kans.

Lieutenant Colonel R. MacD. Graham, relieved Kansas City high schools, Mo., January 18; assigned Q. M. C. at Kansas City, Q. M. Depot; previous orders revoked.

Captain P. B. Griffith, relieved A. C. A. F. School, Moffitt Field; assigned A. C. A. F. School, Stockton, Calif.

Major J. C. Groome, relieved detail as member of G. S. C., assignment to G. S. with troops, and will report to Commanding General, 28th Division, for duty.

Lieutenant Colonel G. B. Guenther, detailed as member of G. S. C.; assigned W. D. G. S., and office, C. of S., Washington, D. C.; relieved post Hq., Cavalry School, Fort Riley; previous orders revoked.

First Lieutenant J. A. Guimond, relieved 107th Cavalry, Cleveland, Ohio; assigned with J.A.G.D., and J.A.G.O., Washington, D. C.

Lieutenant C. D. Hamner, relieved, 3rd Cav., assigned 4th Cav. Brig., Fort Riley, Kans.

Captain L. F. Harris, relieved 9th C. A. Service Command, Fort MacArthur; assigned Cavalry R. C., Fort Riley.

Captain W. O. Heacock, assigned 10th Cav., Fort Leavenworth, Kans.

Lieutenant Colonel T. J. Heavey, detailed as member of G. S. C.; assigned G. S. with troops, and Hq., VII Army Corps, Birmingham, Ala.; relieved 6th Cav., Fort Oglethorpe.

First Lieutenant L. C. Herkness, Jr.; orders amended to assign him 2d Armd. Div., Fort Benning.

Lieutenant Colonel Frederick Herr, relieved detail in I. G. D., March 8, and Hawaiian Dept.; assigned 11th Cav., Camp Seeley, Calif.; previous orders revoked.

Captain William B. Hope, from C.A.S.C, to 6th Cav., Ft. Oglethorpe, Ga.

Captain F. L. Howley, relieved as A. C. supervisor, Civilian Mechanics' School, Rising Sun Aircraft School, Philadelphia; assigned staff, Cavalry School, Fort Riley.

Lieutenant Colonel C. G. Hutchinson, relieved Fort Bliss, Texas; assigned 1st Armd. Div., Fort Knox, Ky.

Captain J. L. Inskeep, relieved U.S.M.A., West Point, N. Y.; assigned 1st Armd. Div., Fort Knox, Ky.

First Lieutenant George S. Iredell, from Fort Myer, Va., 19 March; to 4th Cav. Brig., Fort Riley, Kans.

Lieutenant Colonel W. R. Irvin, relieved C.C.C., Fort Oglethorpe, March 26; assigned 1st Cavalry Div.

Major E. C. Johnston, relieved 1st Cavalry Div., Fort Bliss, March 20; assigned Cavalry Board, Fort Riley.

Lieutenant E. R. Jones, relieved 2nd Armd. Div., Fort Benning, Ga.; assigned Cav. Repl. Center, Fort Riley, Kans.

Major M. E. Jones' orders amended to assign him post Hq., Cav. Sch., Fort Riley.

First Lieutenant Joseph H. Keller, from Fort Meyer, Va., 19 March, to 4th Cav. Brig., Fort Riley, Kans.

Lieutenant Colonel A. T. Lacey, detailed as member of G. S. C.; assigned G. S. with troops, and Hq., Northeast Air Dist., Mitchel Field; relieved O. R., 2d Cav., Albany, N. Y.

Lieutenant Colonel K. C. Lambert, relieved O. R., 2d C. A., New York City, February 1; assigned 14th Cav., Fort Riley.

Lieutenant Colonel I. I. Lambert, relieved Chicago high schools, March 3; assigned 1st Armd. Div., Fort Knox.

Lieutenant Colonel T. F. Limbocker, relieved O. R., 6th C. A., Detroit; detailed O. R., 2d C. A., New York City.

Captain N. A. Loeb, relieved 1st Armored Div., Fort Knox, and temporary duty at Alabama Inst. of Aero., Tuscaloosa; assigned A. C. Basic Flying School, Montgomery, February 13.

Lieutenant Colonel J. W. McDonald, relieved Army War College, February 12; assigned Armored Force Repl. Center, Fort Knox.

First Lieutenant Stephen McGregor, relieved Fort Hayes, March 5; assigned 3d Cav. Brig., Fort Riley.

Lieutenant Colonel L. LeR. Martin, relieved First Cav. Div., Fort Bliss; assigned 1st Armd. Div., Fort Knox.

2d Lieutenant Raymond H. Martin, from 3rd Cav., to Cav. Det., Fort Myer, Va.

Lieutenant Colonel G. R. Mauger's orders amended to relieve him Houston high schools, Texas, March 15.

Major W. B. Mershon, Jr., relieved O. R., 6th C. A., Saginaw, Mich., April 1; assigned staff, Cav. Sch., Fort Riley.

Lieutenant C. L. Miller, assigned 10th Cav., Fort Leavenworth, Kans.

Major R. G. Mills, relieved O. R., 2d C. A., New York City; assigned Cav. Repl. Center, Fort Riley.

Lieutenant Colonel J. G. Monihan, detailed as member of G. S. C.; assigned G. S. with troops, and Philippine Islands, sailing from San Francisco, April 26; relieved Ignatius High School, San Francisco.

Major C. E. Morrison relieved 6th Cav., Fort Oglethorpe; assigned Armd. Force, R. C., Fort Knox.

Captain R. E. Nelson, relieved 3rd Cav.; assigned 2nd Armd. Div., Fort Benning, Ga.

Captain R. E. O'Brien, Jr., relieved 4th Cav., Fort Meade, S. Dak., February 20; assigned 1st Armored Div., Fort Knox.

Colonel Edwin O'Connor, relieved O. R., 2d C. A., New York City, February 20; assigned 2d C. A. Service Command, Fort Hancock.

Captain D. M. Oden, assigned 10th Cav., Fort Leavenworth, Kans.

Major R. D. Palmer, relieved 4th Div., Fort Benning; assigned 4th Cav., Fort Meade, S. Dak.

Colonel L. S. N. Phillipp, relieved Fort Knox, Ky.; assigned as instructor, C. & G. S. Sch., Fort Leavenworth, Kans.

Lieutenant Colonel Otis Porter, from Chicago, Ill., March 17, to 1st Corps Area Serv. Command, Camp Edwards, Mass.

1st Lieut. L. B. Powell, relieved Langley Field; assigned Bowman Field, Ky.

Captain C. LaV. Rickenbaugh, 2nd Div.; assigned 2nd Armd. Div., Fort Benning, Ga.

Major J. H. Riepe, relieved Fort Custer, Mich.; assigned as instructor, C. & G. S. Sch., Fort Leavenworth, Kans.

Captain T. S. Riggs, relieved office, C. of Cav., Washington, D. C.; assigned office, Asst. Sec. of War, Washington, D. C.

Lieutenant Colonel T. M. Roemer, relieved O. R., 3d C. A., Altoona, Pa., March 1; detailed O. R., 3d C. A., Philadelphia.

First Lieutenant J. LeR. Rogers, relieved First Cav. Div., Fort Brown, February 20; assigned 2d Armored Div., Fort Benning.

First Lieutenant Thomas J. Rogers, from Fort Knox, Ky., to 6th Cav., Fort Oglethorpe, Ga.

Lieutenant Colonel H. M. Rose, relieved Owensboro High School, Kentucky, March 10; assigned 2d Armored Div., Fort Benning.

Lieutenant Colonel F. H. L. Ryder, relieved O. R., 3d C. A., Dubois, Pa., February 25; assigned 7th C. A. Service Command, Fort Leonard Wood, Mo.

Captain K. L. Scherer, relieved U. S. M. A., West Point, N. Y.; assigned 1st Armd. Div., Fort Knox, Ky.

Lieutenant F. T. Schneider, Jr., relieved present duty, Cav. School, Fort Riley, Kans.

Lieutenant Colonel John P. Scott, from Phoenix, Ariz., to 2nd Armored Div., Fort Benning, Ga., sail San Fran., April 12.

First Lieutenant J. A. Seay, relieved Fort Oglethorpe; assigned Philippine Islands, sailing from Charleston, April 4.

Major J. K. Sells, relieved 1st Armored Div., Fort Knox; assigned as instructor, C. and G. S. School, Fort Leavenworth.

Captain L. C. Shea, relieved 3d Div., Fort Lewis, February 25; assigned 9th Cav., Fort Riley.

Captain C. H. Shepherd, relieved Fort Oglethorpe, February 28; assigned Langley Field.

Lieutenant Colonel W. E. Shipp, G. S. C., relieved W.D.G.S. and office, C. of S., Washington, D. C.; assigned G. S. with troops, Mar. 6, and as mil. att., Belgrade, Yugoslavia.

Major C. D. Silverthorne detailed as member of G. S. C.; assigned W.D.G.S., and office, C. of S., Washington, D. C.; relieved 3d Cav. Brig., Fort Riley.

Lieutenant G. K. Slaughter, relieved 3d Cav.; assigned 4th Cav. Brig., Fort Riley, Kans.

First Lieutenant W. L. Slisher's orders amended to relieve him Fort Custer, instead of Fort Sheridan.

Captain J. W. Snee, relieved 11th Cav., Campo, Calif., February 20; assigned 2d Armored Div., Fort Benning.

Lieutenant Colonel Kramer Thomas, from Philadelphia, Pa., to 2nd Armored Div., Fort Benning, Ga.

Lieutenant Colonel P. L. Thomas, relieved detail in I. G. D., December 15; relieved Hq., 1st C. A., Boston; assigned 1st Armored Div., Fort Knox.

Lieutenant Colonel J. B. Thompson, relieved as instructor, C. and G. S. School, Fort Leavenworth; assigned 1st Armored Div., Fort Knox.

First Lieutenant J. C. F. Tillson 3d, relieved 1st Cav. Div., Fort Ringgold, and Ryan School of Aero., San Diego; assigned A. C. Basic Flying School, Moffitt Field, Feb. 13.

Lieutenant Colonel L. K. Truscott, Jr., detailed as member of G. S. C.; assigned G. S. with troops, and Hq., IX Army Corps, Fort Lewis; relieved 1st Armored Div., Fort Knox.

Lieutenant J. E. Tyler, assigned 10th Cav. Det., Fort Leavenworth, Kans.

Lieutenant Colonel T. D. Wadelton, relieved O. R., 5 C. A., Indianapolis, December 1; assigned C. C. C., Fort Knox.

Lieutenant Colonel W. S. Wadelton, ordered to participate in aerial flights, period of one month, March 12.

Lieutenant Colonel Otto Wagner, relieved O. R., 6th C. A., Milwaukee, March 1; assigned 4th C. A. Service Command, Camp Polk, La.

Captain C. P. Walker, assigned 10th Cav., Fort Leavenworth, Kans.

Captain William Ambler Weaver, National Guard U. S., to active duty with Ordnance Dept., March 13, to off. C. of Ord., Washington, D. C.

Major J. B. Wells, relieved staff, Cavalry School, Ford Riley, March 15; assigned 1st Armored Div., Fort Knox.

Col. W. W. West, relieved as instructor, New Jersey N. G., Newark; assigned 3d C. A. Service Command, Fort Monroe.

Captain H. R. Westphalinger, transferred to Ord. Dept., on November 16; relieved staff, Cavalry School, Fort Riley; assigned as ordnance officer, that station, and as ordnance member of Cavalry Board.

Lieutenant Colonel Melvin S. Williamson, from Decatur, Ga., June 1, to 2nd Armored Div., Fort Benning, Ga.

Major A. N. Willis, relieved Shreveport high schools, La., April 1; assigned 11th Cav., Seeley, Calif.

Lieutenant Colonel R. E. Willoughby, detailed as member of G. S. C.; assigned G. S. with troops, and Hq., Panama C. A. Command, Quarry Heights; relieved 3d Cav., Fort Myer, sailing from New York, May 20.

Captain A. H. Wilson, Jr., relieved A. C. A. F. Sch., Moffitt Field; assigned A. C. A. F., Stockton, Calif.

First Lieutenant Joseph Woodall, relieved Randolph Field, March 12; assigned Cuero, Texas.

Lieutenant Colonel R. O. Wright, relieved O. R., 3d C. A., Norfolk, March 3; assigned 2d Armd. Div., Fort Benning.

Major W. W. Yale, relieved staff, Cavalry School, Fort Riley, March 8; assigned 4th Cav., Fort Meade, S. Dak.

★ ★ ★

CAVALRY OFFICERS (RETIRED)

On Active Duty

Captain Sam D. Carter, Pasadena Junior College, ROTC, Pasadena, Calif.

Major Roy W. Holderness, Shreveport high schools, Shreveport, La.

Major Richard H. Kimball, CCC, Fort Oglethorpe, Ga.

First Lieutenant Irving L. McAlister, CASC, Jeffersonville, Mo.

Major Vernon L. Padgett, CASC, Fort Des Moines, Iowa.

Colonel Albert E. Phillips, Jeffersonville Quartermaster Depot, Jeffersonville, Ind.

Captain Horace Stringfellow, Jr., Montgomery high schools, Montgomery, Ala.

NOTE—*This list is in addition to that published in our January-February 1941, issue. It is requested that any retired cavalryman who is now on active duty and whose name does not appear on this list, please notify* THE CAVALRY JOURNAL *or the Office, Chief of Cavalry.*

★ ★ ★

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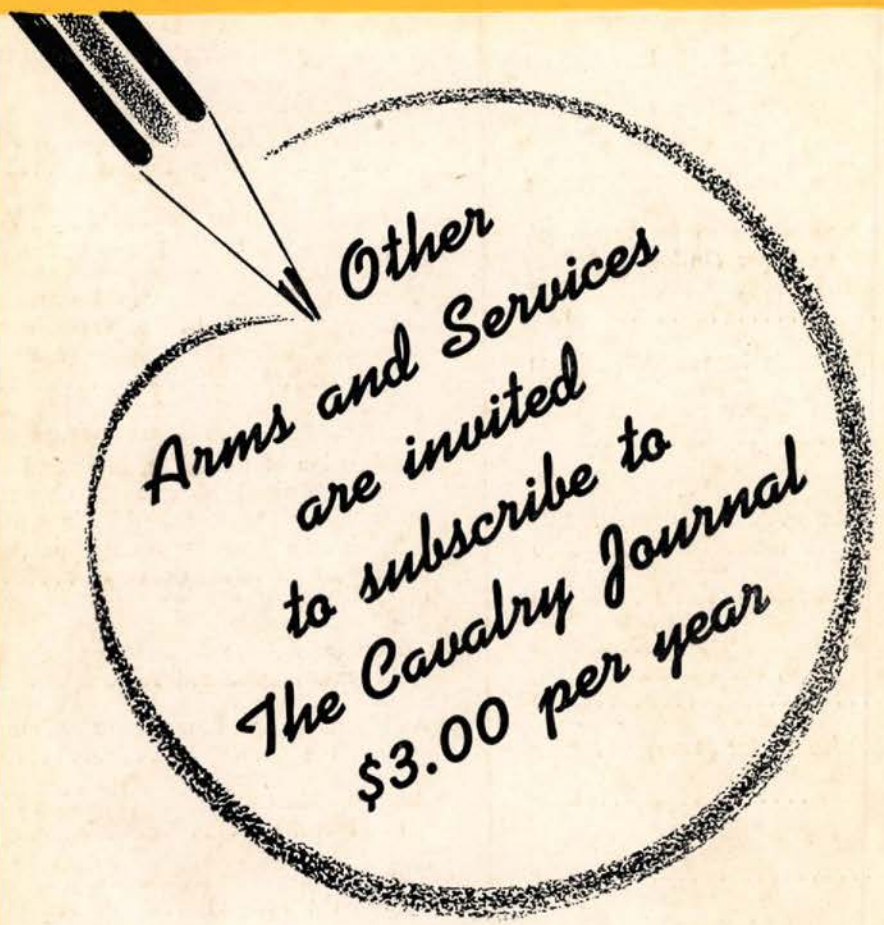
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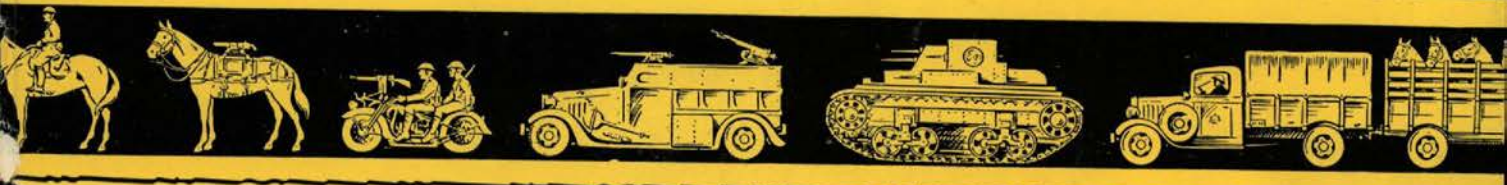

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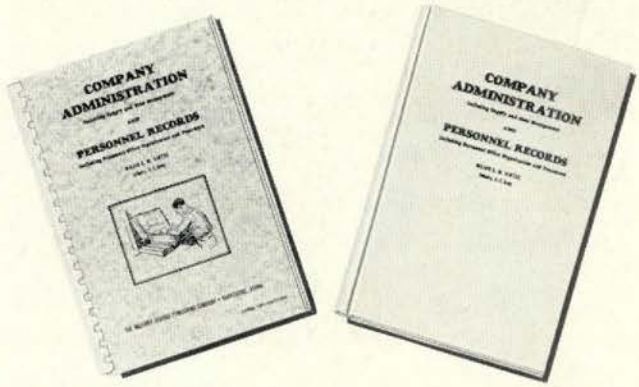

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MOUNTAIN TROOPS

CARDED

Editor's Note: It is generally known that European armies maintain organized divisions trained and equipped especially for the difficult and important rôle of mountain warfare.

Our Secretary of War has announced that our army must be ready for combat in ANY Theater of War. In reviewing these possible theaters, geographically, one finds a preponderance of lofty and rugged mountains and vast wooded areas.

Horse cavalry, in addition to its generally accepted rôle, lends itself admirably to this type of warfare.

* * * * * *

Appreciation is hereby expressed to General Friedrich von Boetticher, German Military Attaché, for his courtesy in obtaining expressly for The Cavalry Journal, the following valuable, hither-to unpublished article, which describes the German method of developing animals for mountain troops.

Remounts for Mountain Units of the German Army*

By Colonel von Jena, German Army[1]

THE need of troops with special equipment and training for employment in mountain warfare was revealed as early as the World War. Thus Germany, in the course of 1914-1918, organized the German Alpine Corps, the German *Jaeger* (light infantry) Division, and the Wuerttemberg Mountain *Jaeger* Battalion. The history of these and similarly equipped units gives ample proof of the soundness of the decision to organize such special troops. Wherever these units fought, both on the defensive and offensive, they demonstrated the fact that they were crack troops.

Bearing in mind these lessons of the World War, Germany took steps to organize special mountain troops as soon as the fetters of the Treaty of Versailles slackened and the nation regained its freedom to rearm. Garrisons for such mountain units were established in suitable Alpine regions.

The successful operations in Poland and, especially, those at Narvik have shown clearly how wise it was to take that vital step. Those campaigns will forever form a page of distinct glory in the annals of the German mountain units.

In addition to a special type of personnel as well as armament and equipment suited for the particular conditions of mountain warfare, it became necessary to provide special types of remounts, that is, to furnish the mountain units with mounts and pack animals that were adapted to mountain warfare.

It is this *remount service* for mountain troops which we shall discuss in the following.

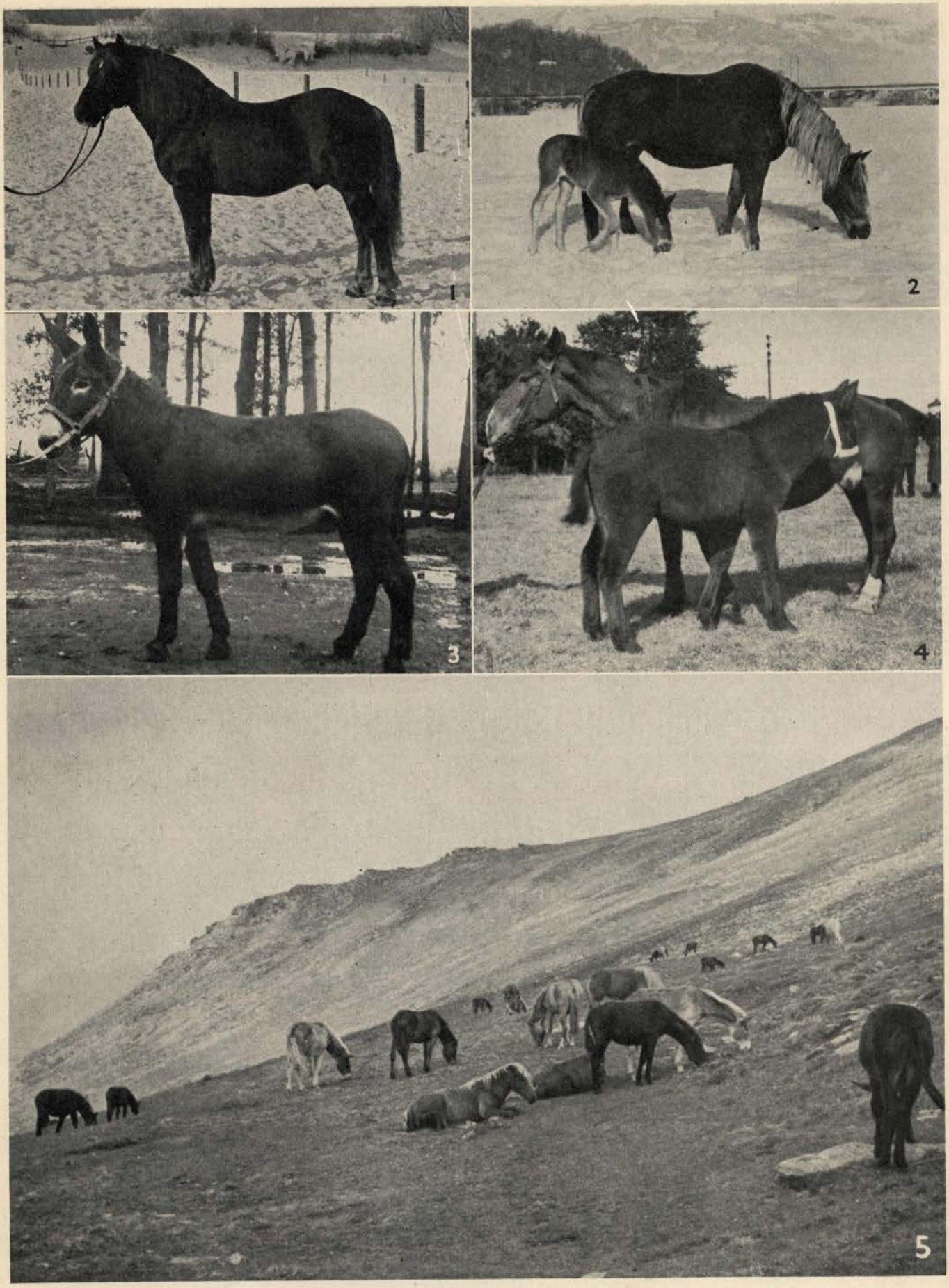
The same as the mountain trooper represents a small, more or less stocky, hardy and wiry type of soldier, so the mountain horse who accompanies him into battle in the vast and steep mountain regions must be small and stocky and possess identical characteristics, namely, endurance, stamina, toughness and frugality.

In Europe, such distinct mountain horses are the Huzul breed in the Carpathians, the Bosnian breed in the Balkans, and the Haflinger breed in the Alps. The Haflinger horse traces his origin to South Tyrol; economically and militarily, he is the most practical and best all-around horse for service in high mountains. Both in appearance and performance, the Haflinger comes nearest to meeting the desires and requirements of agriculture and national defense; and so constitutes an equally valuable aid to the mountain soldier as to the peasant on his lonely mountain farm.

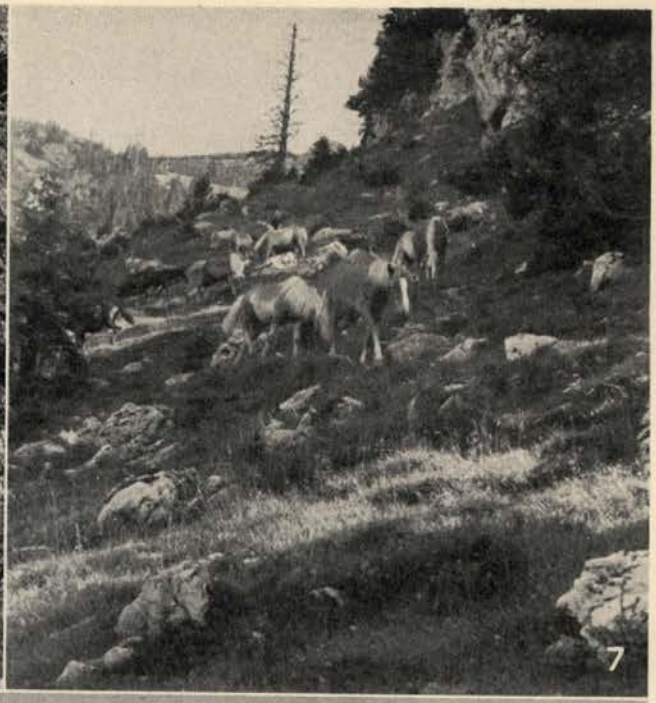
*Not to be republished without specific permission from General von Boetticher.

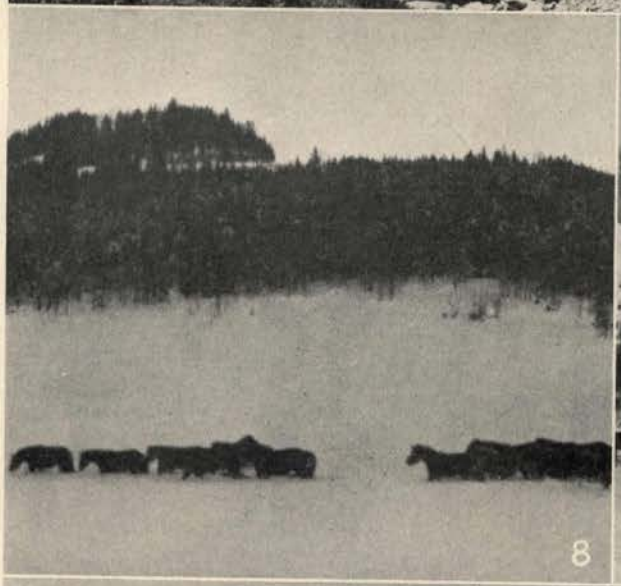
[1]Translated from the German by Technical Sergeant Fred W. Merten, DEML.

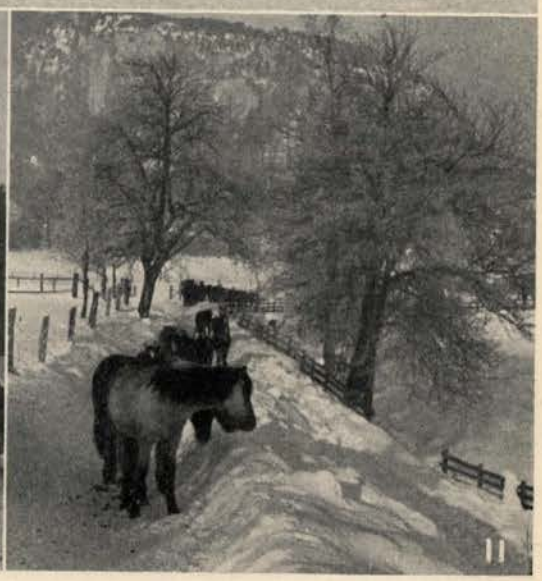
Animals in service with mountain troops



1—Haflinger stallion. 2—Haflinger brood mare and foal. 3—Jack, U.S.A. 4—Half-breed mare and mule foal. 5—Horses and mules grazing together in the Seetaler Alps. (Elevation 6,000-8,250 feet.)







6—Haflinger horses watering at mountain stream. 7—Pastures 6,000 feet above sea level. 8—Haflinger horses taking their daily walk. 9—Stable without stalls at the Wiesen Remount Depot for foals. 10—In the corral. 11—Exercise on the trails plowed through snow

Besides these small, yet hardy mountain horses, the mule has proven to be a strong and tough pack animal, as revealed clearly by the wide use of this hybrid in other countries, such as the United States, France, Italy and Spain.

All nations being dependent upon their respective military-political situation, on the one hand, and geo-political position and climatic conditions, on the other hand, each nation must adopt and promote that form of animal husbandry which comes closest to meeting those requirements, subject to the military-economic interests and demands of the particular nation.

Accordingly, Germany breeds mules and Haflinger horses in a manner corresponding to her military and economic requirements. From these animals, remounts are selected annually and assigned to the mountain units.

The *breeding of the Haflinger horse* rests mainly with the small farmer, that is, 80% of this type of horse are bred by mountain peasants, while but 20% of them are bred by large land owners who maintain small stud farms. For the present, the breeding area of this type of horse is confined exclusively to the Alpine regions. The breeding is conducted and directed by a separate stud association with headquarters at Innsbruck. (See illustrations 1 and 2.)

Mule breeding in Germany is carried on almost exclusively by small farmers throughout the country, on the plains as well as in the mountains, though especially in regions where suitable brood mares are available.

Jacks are imported from the United States, France and Italy. No definite conclusion has been reached as yet with regard to the breeding qualities of the different types of jacks. (For illustrations see 3 and 4.)

Subject to the economic conditions of the mountain peasant, on the one hand, and the military purpose which the Haflinger and the mule are to serve, on the other hand, as well as for the sake of uniformity in supplying the Army with remounts, great importance is attached to the breeding of these prospective "mountain fighters."

Both the small horse and the mule are purchased by the Army at the age of five months, that is, shortly after they are weaned, and raised in herds numbering from 100 to 400 heads at specially equipped remount depots for foals. All of these remount depots are located high in the mountains.

The remount depot for foals must have an adequate fodder basis and sufficient pasture land at various elevations, up to 9,000 feet above sea level, in order to accustom, that is, acclimatize, the young animals from the earliest to the environments in which they will be used later.

Grazing land plays the main rôle in this process of raising animals. The object is to give the horse and mule an opportunity to acquire all of the characteristics that must be required of an animal used by mountain troops, as mentioned above, namely: a small and stocky conformation (the animal must be able to stand firm on slopes); a strong constitution; toughness and endurance; frugality; and, last but not least, sure-footedness. (For illustrations see 5, 6 and 7.)

Only such a uniform and hard method of raising can assure a uniform remount service, a service which furnishes the mountain trooper an animal on which he may absolutely rely at the highest elevations and in times of stress and peril.

While the animals, in the summer, are kept on the range at high elevations, where no sheds are provided and snowfall in July and August is no exception, in the winter the animals remain at the remount depots, in large stables without stalls where they are free to exercise their limbs. Yet, even in the coldest winter and deepest snow, the animals are turned out into corrals and driven along trails plowed through the snow. The strong and heavy coat of hair which the animals develop under those conditons require that the stables be kept cool and well ventilated, in order to preserve the health of the animals and guard them against diseases. (For illustrations see 8 to 11 inclusive.)

After three years of being exposed to all kinds of weather (see 12), the remounts are issued to the troops, where their training follows.

This method of raising the animals in herds and yet giving them individual care assures the development of good-natured and even-tempered animals, especially mules, besides producing sound and hard specimens.

Thus the Haflinger horse and the mule constitute an efficient and reliable "weapon" in the hands of the mountain troops, a weapon which has helped them to accomplish such feats of heroism as the Battles of Lemberg and Narvik and will continue to do so in the future, wherever the vital requirements of the nation may call them into action.

12—Mules on the range

U.S. Horse Cavalry Girds For War

By Colonel Albert E. Phillips*

JEB STUART and Phil Sheridan ride again but they ride faster and farther and hit harder, yes, tremendously harder, for they have adopted the motor and literally placed their cavalry on wheels. They have called on the plane and likewise the tank to come to the aid of their faster, better-bred steeds with bombs and guns aplenty and armored cars galore. American horse cavalry was, and still is, unique. There's none like it in all the world.

European military writers still refer to the brilliant exploits of our Civil War cavalry. This war developed horsemen who were skilled fighters afoot or mounted, though they fought mostly on foot. Armed with the carbine or rifle those audacious cavalrymen used their mounts to move fire-power rapidly from place to place and thus hit at vital and critical points often in the nick-of-time. These were the so-called "hit-and-run" or in-and-out tactics of cavalry with which a small force may inflict a series of damaging blows. Here in '61 to '64 was developed what the Germans now call "speed tactics." These tactics so riled the other arms of Civil War days as to bring forth the familiar slur: "Whoever heard of a dead cavalryman?" And yet even the old flint-lock and the muzzle loader could both bring down a cavalryman if one could hit a running target. But such targets are not easy to hit, as we will show later.

The paramount problem today, however, is to get to, or reach, all those places which neither the tank nor the motor can reach, with a preponderance of fire of all types from pistol to cannon. And if the motor can make it, American Cavalry transports its horses in trucks, preceded by its own armored cars and light tanks. But it still fights most of its battles on foot and utilizes the fastest and most appropriate modes of transportation to reach and attack the enemy. In much of this terrain the horse is still supreme. And horse cavalry is still the fastest ground force that can travel all types of battlefield terrain either day or night, in all kinds of weather.

But fighting on foot, simple as it sounds, may mean a carefully prepared attack with artillery, tanks and planes supporting a suddenly launched, dashing movement of mounted men to secure an important tactical advantage, then dismounting to fight and hold it.

Cavalry fights best when part of a team, or on independent missions. One would not, in the normal case, assign a cavalry division to deliberately attack either an infantry division or a mechanized division; but under proper conditions the new American Cavalry Division may defeat either.

An infantry division and a new cavalry division operating under a single control is a more formidable tactical team for maneuver warfare than two infantry divisions.

Modern mechanized warfare is a carefully planned methodical affair which creates new possibilities for Independent American Cavalry Divisions and Cavalry Corps.

Given the proper quota of attack-bombers and fighters, the new American Cavalry Divisions, by employing surprise, will completely upset methodical warfare.

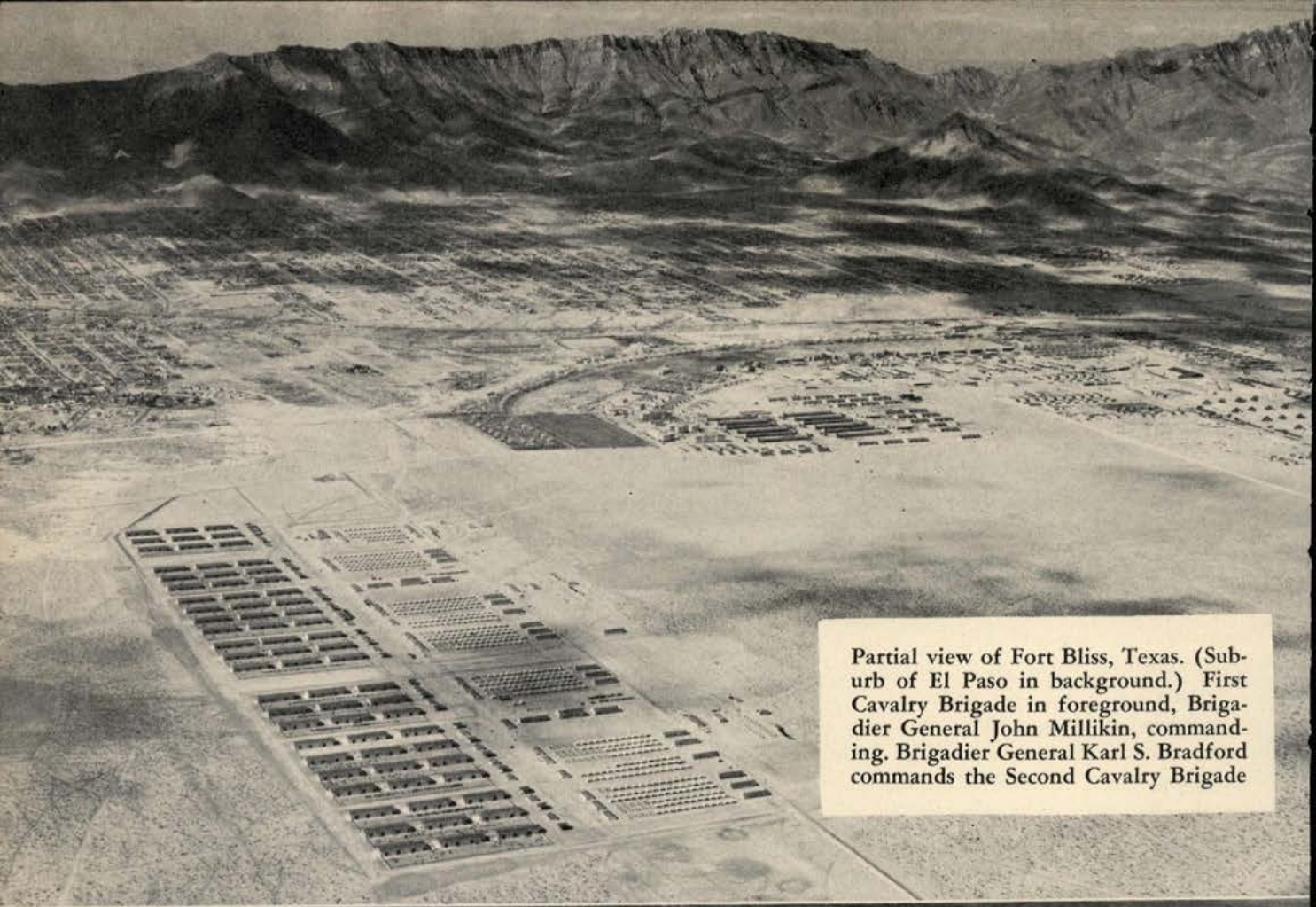
When the tide of battle swings to and fro, can any tactician doubt the effect of a sudden blow against our antagonist—by the new AMERICAN Cavalry Division? Remember, there is no war unit comparable to it in all the world.

The new American Cavalry Division is the one completely integrated army unit equipped to rapidly move over any type of terrain. Where the motors can't go, the horse units will flow.

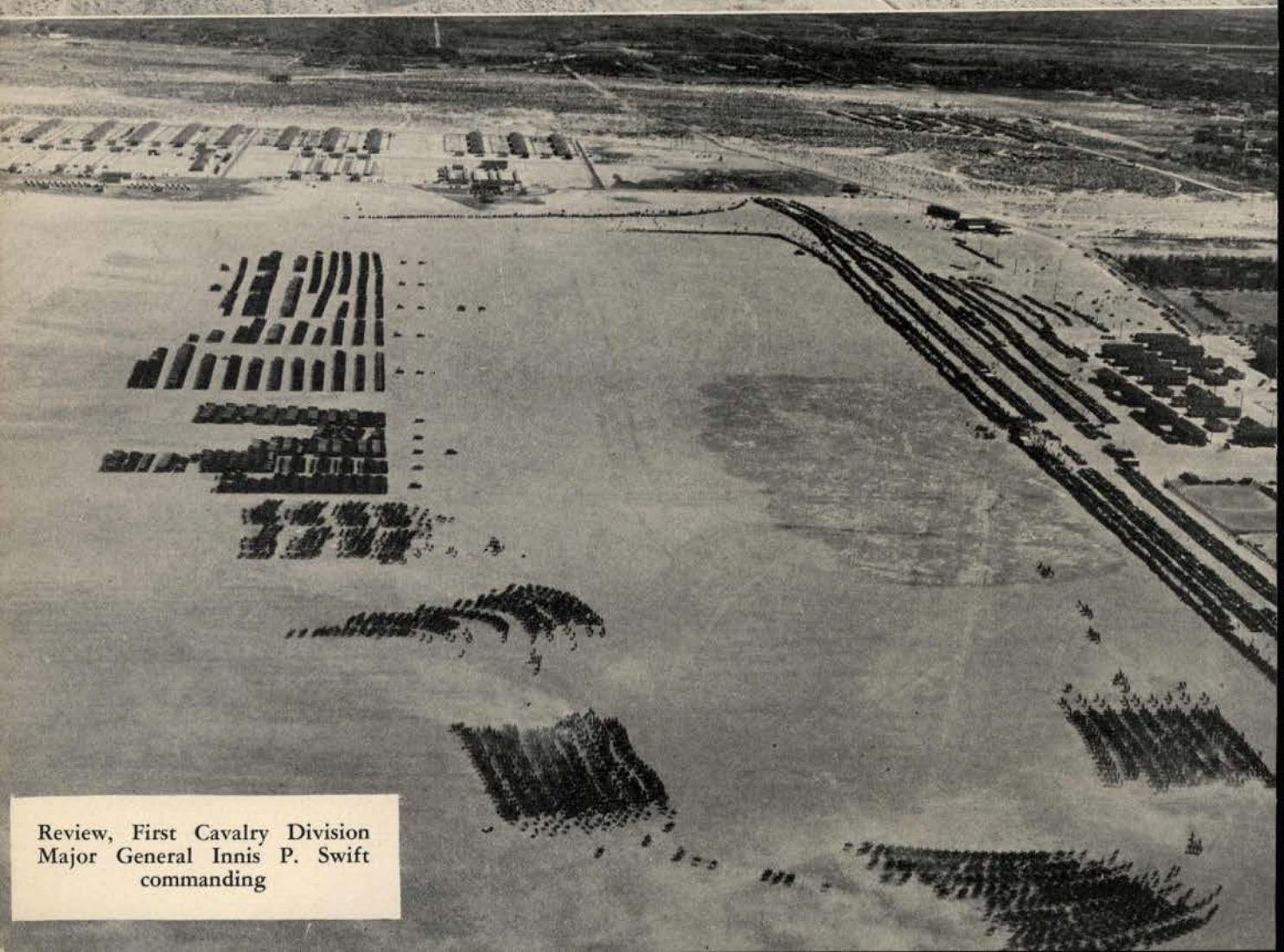
Cavalry, as we employ it, is a heritage handed down to us by those masterful horsemen of the American Civil War. What is this new American Cavalry Division? Here are the highlights:

Four horse regiments, each with a headquarters troop; one .30 caliber machine-gun troop; one special heavy weapons troop armed with .50 caliber machine guns and long-range mortars; two rifle squadrons of three troops each, equipped with Garand semi-automatic rifles; one division reconnaissance squadron composed of two scout car troops; one motorcycle troop and one (light tank) armored troop; two battalions of

*Colonel Phillips, Cavalry (Retired), and now on active duty.



Partial view of Fort Bliss, Texas. (Suburb of El Paso in background.) First Cavalry Brigade in foreground, Brigadier General John Millikin, commanding. Brigadier General Karl S. Bradford commands the Second Cavalry Brigade



Review, First Cavalry Division
Major General Innis P. Swift
commanding

horse artillery, especially organized for cavalry action, with twenty-four 75-mm. howitzers (the fellows which reach over the hill with curved fire and hit when least expected and which may also fire over the heads of advancing horsemen) and an added motor-drawn battalion of twelve 105-mm. howitzers.

Here is a summary of the armament: 327 light machine guns, .30 caliber; 356 heavy machine guns, .30 caliber; 265 machine guns, .50 caliber; 490 Thompson sub-machine guns, .45 caliber; 54 antitank guns, 37-mm.; 28 mortars, 81-mm.; 10,342 pistols and 4,592 semi-automatic rifles, plus the artillery above mentioned. An air observation squadron is attached to each division. Air fighting and bombing units are attached as needed. Of armored vehicles there are: 145 scout cars, 13 light tanks, 12 mortar carriers, and 374 motorcycles.

Here you have an array of tremendous mobile fire power for attack or resistance. And the ability to shift this fire power adds to its value. The new cavalry division represents the most formidable unit of its kind ever designed within an army. For the present, the Army will have two of these horse cavalry divisions; nine corps reconnaissance (horse-mechanized) regiments; one separate horse cavalry brigade; two separate horse cavalry regiments, and ten reconnaissance troops.

Wars are successfully fought by combat teams balanced as to arms for the terrain over which the battles are fought. These ground teams *MUST* be covered by an air force balanced as to planes for requisite air power.

The brilliance of recent mechanized warfare has cast a shadow over the old prosaic arms until they shall once again prove that man and his war allies—terrain and weather—still dominate the battlefield and also the machine. This was again proved in the battles between Greece and Italy. The recent battles in Greece, between the Germans and the Allies, prove nothing. Superiority in every category, plus favorable weather, is an axiom as old as warfare itself.

Mechanized forces are "forced" to use the passes in mountain warfare and thus suffer enormous losses. Cavalry would avoid the passes by moving around or over the mountain-tops – secretly, when desirable, or preceeded by air-bombers when necessary.

Mechanized warfare is specialized warfare, supreme when conditions are favorable, of little use when they are not. Russia could not use its machines in the bitter cold of Finland's winter. Japan, due to mud, signally failed in the use of machines in its war with China. Italy's motors failed in winter warfare in Greece. Would machines or American Horse Cavalry prove more valuable in the Philippines? Where are we likely to fight our wars? If in the Western hemisphere, then all conditions, without exception, favor the new American

Cavalry Division, with its horse and light armored units.

We must use machines whenever possible to save man-power, but, first of all, we must use the proper technical team to achieve tactical success and thus save the country.

Man hasn't yet made the machine that will replace the foot soldier, the pack artilleryman, and the American Mounted Cavalryman. Only the foot-soldier can fight under any and all conditions. And only the basic arms, infantry, cavalry and artillery, can fight in any terrain or in any weather. Of these, the cavalryman with his rifle may fight alongside of the infantryman or use his horse to further assist him by rapidly moving fire-power or, to chase the mobile enemy.

It is in the tropics, and particularly in the Western hemisphere, where one encounters the swampy morass, the impenetrable jungle, the steep, thorny-patched mountains, and the lack of roads for all types of wheel transportation. The foot-soldier, the horse cavalryman with his automatic rifle, and machine gun pack horse, and the pack artilleryman and his ally, the pack-mule, are the trail-blazers who work their way through the inaccessible places and come out with an unbeatable combat team.

In the December, 1940, issue of *Harper's Magazine*, General George C. Marshall, Chief of Staff, tells of some of the problems with which the high command was faced in meeting the requirements for a modern army. In part he says, "with a natural tendency to emphasize the dramatic aspects of the fighting, war correspondents have created in the popular mind the impression that the bulk of the German Army is made up of bombing planes and armored divisions; and have thereby obscured the essential clue as to its remarkable success—the fact that it is a balanced force of all arms." "The German Army had the great advantage in plan-

ning the necessary balance and teamwork between its component elements, of definitely knowing in advance who was to be the principal enemy and exactly what terrain would have to be fought over."

Remember, that Germany had nearly 800,000 horses in her army; that she probably maintains 17 regiments of horse cavalry; that her divisional artillery is horse-drawn by 400,000 horses, and that there are 18,000 horses in her 200 infantry divisions. But, most of all, let us not overlook the fact that with all her might, Germany hasn't any military unit comparable to our new Cavalry Division.

We, in America, were left a heritage which we are now bringing to full fruition—the American Cavalryman with his automatic rifle, his machine gun, artillery, armored cars, and light tanks. His one remaining prime need is adequate air support, for without that no arm can succeed. American Cavalry hits, runs, and hits again, much like a master boxer, but it hits fast and hard and in the least expected places, and the blows of this Cavalry are not mere love taps.

Of course, mounted men are vulnerable to machine gun and rifle fire, just as infantry is, but not to the extent, some military men believe. Surprise, plus speed, plus supporting fires, will largely compensate for the apparently easy target. Here are two interesting examples showing the difficulty of hitting a speedy, twisting target. The Cavalry regiment of which I had the honor of being an officer for many years, was traversing the plains of Wyoming. It was a twelve-troop regiment stretching out in column for nearly a mile. Suddenly two antelope appeared on a flank about 300 yards distant, loping along toward the head of the column. A trooper or two from each troop hurriedly dismounted, jerking rifles out of gun-boots, and waited for the near approach of the animals. At least 100 shots were fired. All missed. Remember—no one was firing at the soldiers.

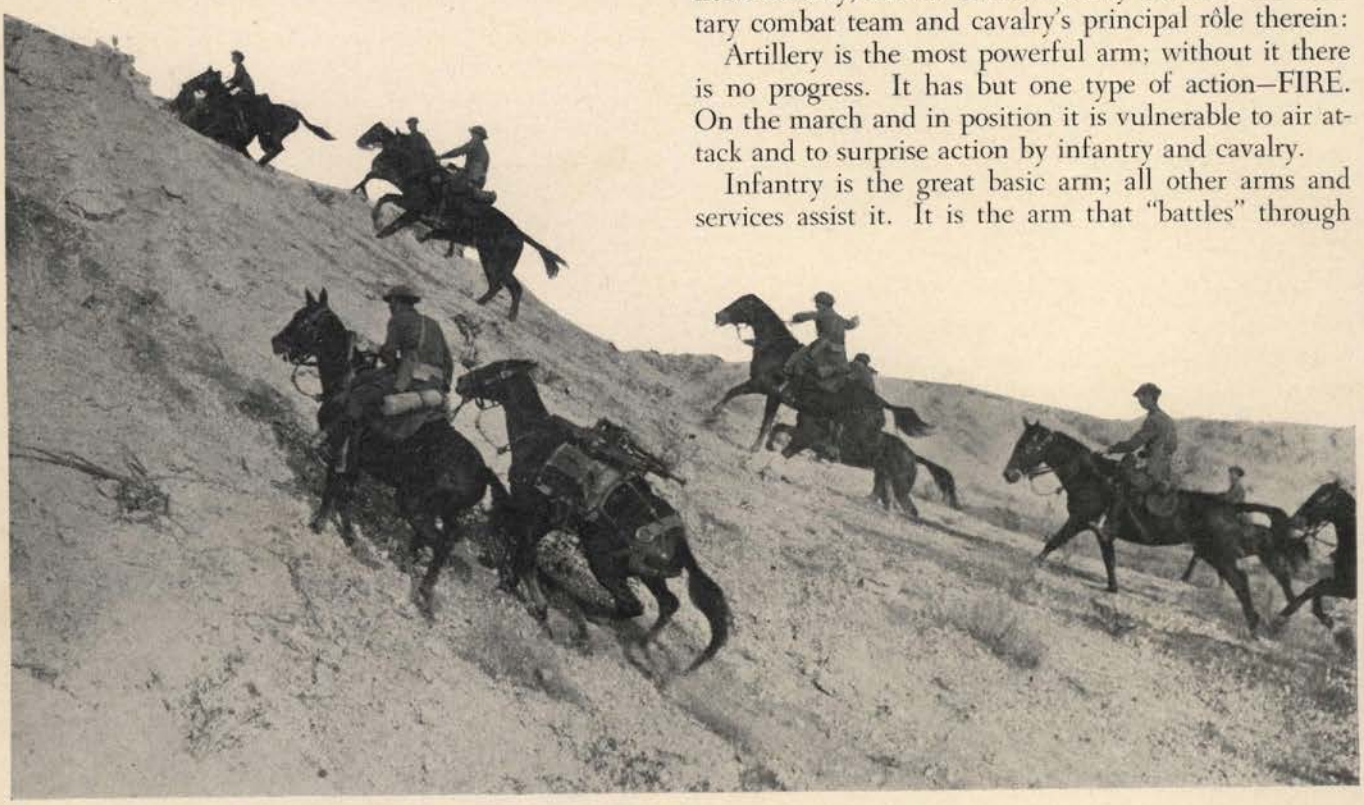
During the Ute Indian campaign in the Powder River Country of Montana, in the winter of 1906, I was accompanied by six expert riflemen on a scouting trip, and, while going down hill at a walk, we saw five big blacktail deer not more than seventy-five yards to our left. We halted, and four of the riflemen dismounted and grabbed their rifles. The deer bolted and ran so close to us that one rifleman was almost bowled over. Yet there were no casualties among the deer. Depend upon it, a horse is not the easiest of targets, either.

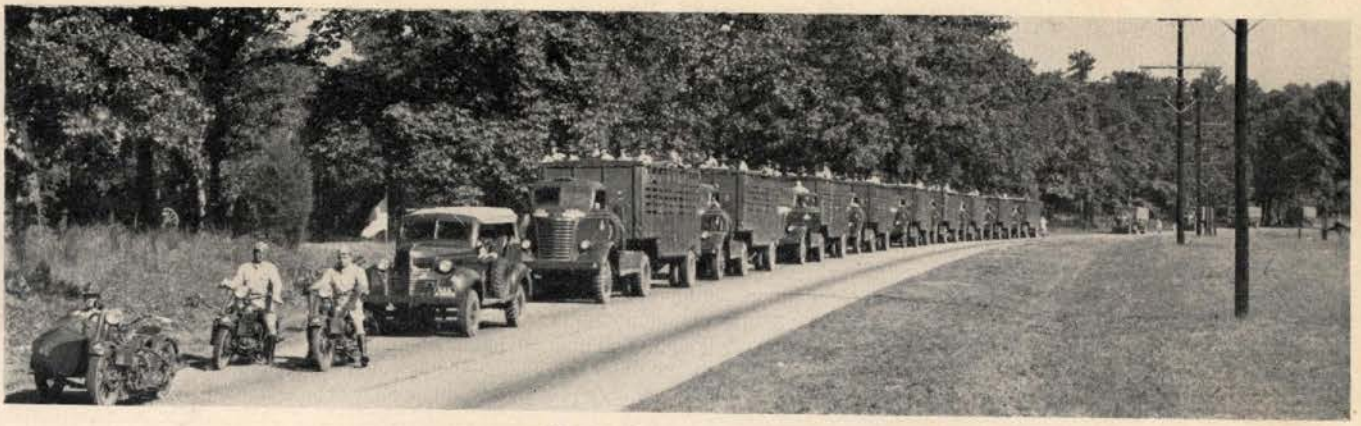
In building our new army we are not so fortunate as was Germany. She knew who her likely, or potential, enemies were, and could plan and build accordingly. We may know how much aviation we require; likewise, infantry and artillery, but when we discuss armored troops and horse cavalry, the many unknown factors will force a decision based on probable requirements. Our War Department has given us the world's most powerful Cavalry Division and the American people may safely place their trust in their judgment. "When" to use cavalry is equally as important as "how" to use it—but to have it is of first consideration.

So far our discussion has been confined mainly to horse cavalry, but let us now briefly examine the military combat team and cavalry's principal rôle therein:

Artillery is the most powerful arm; without it there is no progress. It has but one type of action—FIRE. On the march and in position it is vulnerable to air attack and to surprise action by infantry and cavalry.

Infantry is the great basic arm; all other arms and services assist it. It is the arm that "battles" through





Horse Cavalry Portée

and holds ground. Cavalry is the only other arm organized into divisions and capable of independent action.

In order to "progress in battle" both infantry and cavalry require fire support. Infantry losses are in proportion to the time it is exposed. Cavalry depends on the suddenness and swiftness of its attack to avoid excessive losses in assisting its infantry. Every action by cavalry is to assist its infantry to win, although cavalry may engage in many isolated fights.

American cavalry with its armored and horse elements is to infantry and artillery what cruisers and destroyers are to battleships. It escorts its brother arms on the march and guards them from the lurking enemy in battle. It leaps instantly to the challenge of a threatening foe or sacrifices itself, if need be, to achieve victory or prevent defeat. It asks no favors of weather, roads, or time of day. It asks only for air support.

Fire superiority is a determining factor in warfare, but fire superiority may now suddenly be lost by a shower of bombs from the air—thus creating untold possibilities for horse cavalry divisions. Horse cavalry, with its weapons in pack, is the one force which can rapidly traverse any battlefield terrain.

Fire superiority isn't all-decisive—a tactical move that strikes the enemy at a critical or vital spot, is often more destructive.

Will not American air supremacy enhance the value of cavalry, or, to put it another way—will it not be of greater value to cavalry than to other arms?

The Air force and the Cavalry are both fast-moving arms and their tactics are similar. Air supremacy will dispel all fear of enemy air-attack. Planes will "spot" distant targets, especially enemy mechanization. But air-bombers will strike that and what is left of it may be taken care of by cavalry's own mechanization, artillery and antitank weapons.

Air supremacy during battle will pave the way for quick action by cavalry against demoralized troops. And, with it, cavalry will be in a far better position to keep enemy supporting units "at bay." In fact, cavalry will have greater freedom than it has ever had. Give the cavalry leader "clearance-in-the-sky" and information of "what's ahead," plus air-plugging of it and he'll be ready to take care of whatever comes within his sphere of action. If rapid movement on the ground is important, then air supremacy will protect it and accelerate it.

With armed and armored support on the ground and plane support in the air, cavalry becomes a formidable force to be reckoned with and for the leader who knows how to make the most of it.

The plane will go farther in power and destructiveness, but the tank will have to fight ever-increasing opposing weapons, bombs, guns, both antiaircraft as well as antitank, "thermite" hand-grenades, traps, land mines, etc., etc. Fast armored and combat cars are still in the embreyo stage of development, and, when fully developed, they will tie closer to cavalry.

Cavalry may often clinch what the Infantry has taken but not yet won; when confusion and exhaustion reign and the dreaded counterattack is readying for the strike, or the enemy's reserves are moving to snatch victory from apparent defeat, a cavalry thrust may save the day.

When, and if, the high call to arms comes, American Horse Cavalry will again achieve great glory. The field of opportunity is still wide open. The horse still has his place in warfare, just as it has had from the days of the old warrior Ghengis Khan, down the era of the flintlock, on to the machine age, and from Kitty Hawk to the Spitfires. You can't count him out in a thing so unpredictable as war, and it would be ridiculous to try.

★ ★ ★

Rubber Tires, Cavalry

By Lloyd L. Baldwin*

Types, Operation, Troubles and Remedies

IF it were not for the highly developed and specialized tire equipment on our fighting force's motorized equipment, present-day blitzkrieging would not be possible. Fighting would revert to obsolete tactics employing solid tires or inferior and obsolete pneumatic tires on trucks, combat units, artillery, etc. Even the horses of the cavalry units are now carried from one part of the country to the other in special-built, truck-tractor-drawn portée trailers when long distances are to be negotiated. The tires and tubes on the wheels of all these military vehicles are indeed playing a vital part. The writer has talked to many people in the past several months of mounting interest in war machines and national defense, and has discovered that they are hungry to understand more of the details of modern war equipment and its component parts. The following paragraphs give a description of the tire equipment in cavalry units and also touch on the problems of application, maintenance, and operation.

EDITOR'S NOTE: In appreciation of this timely and valuable contribution, grateful acknowledgment is expressed to the *Firestone Tire and Rubber Company, Akron, Ohio,* who, upon the request of the Editor of The CAVALRY JOURNAL, prepared this article specifically for presentation in this issue.

It often has been said that "the horse is no better than his feet." In this age of extensive mechanization and motorization this statement obviously is equally applicable to our rubber tired vehicles. In other words, to "get thar fustest with the mostest," *watch your tires.*

The tire, tube and rim parts of the motorized and mechanized equipment used by the cavalry may be briefly described, as follows:

PNEUMATIC TIRES

The types of pneumatic tires include motorcycle tires, passenger car tires, and truck tires.

Motorcycle tires as used to date are identical with those used commercially and by the general public, except that the Army always specifies that the tread designs be of the high-traction type. The traction-type tire is not always used in commercial operations. It is necessary for motorcycles to operate off the road on cross-country terrain. Figure 1 illustrates the type of tread pattern best suited to military operations.

Passenger-type tires (Figure 2) are identical with those used currently on automobiles in commercial and private operation. In some special instances the mud and snow type of tread pattern (Figure 3) is used for additional traction, particularly on self-propelled vehicles such as light passenger cars. Regular highway type treads are used on the small gun carriages and on most of the passenger cars.

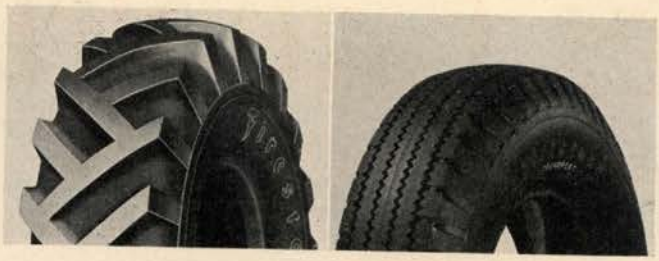
Truck tires are of two general classifications, known as regular highway type treads and mud and snow treads. The former are satisfactory for use on gun carriages and units which operate on improved roads and equipment which does not require super traction. The latter tires have been very successful on equipment such as prime movers, scout cars and front wheels of half-track vehicles. These two types of tires are illustrated by Figures 3 and 4.

TUBES FOR PNEUMATIC TIRES

Due to the fact that much of the cavalry's equipment is called upon to do scouting work and reconnaissance jobs where enemy's outpost or patrol fire is encountered, *bullet seal tubes* are needed. *Regular tubes* as used

(1) *Left,* motorcycle tire. (2) *Right,* passenger type tire

*Sales Engineer, Firestone Tire and Rubber Company, Akron, Ohio.



(3) and (4) Types of treads used on trucks, scout cars, etc.

currently with pneumatic tires are used on some of the equipment such as the 37-mm. antitank gun carriage, passenger cars, etc. In case of actual warfare the cavalry could use a third type of tube known as the *puncture-proof tube,* which would prevent many flat tires, and delays from same.

Years ago, a sponge filler was used in the tires of armored cars and scout cars and gun carriages instead of a pneumatic tube. In modern high-speed operation it was found that these failed due to excessive heat generated in the heavy, bulky filler. All these fillers have since been replaced with bullet seal tubes described and illustrated in Figures 5 and 6.

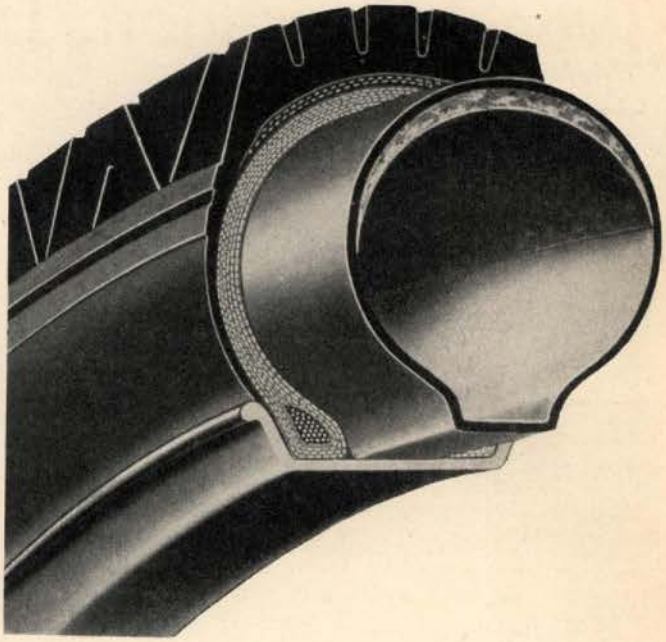
Compression-Plastic Type Bullet-Sealing Tubes

Tire manufacturers have been very successful in developing an outstanding product known as the bullet-resisting tube. These have been found to be effective in sealing holes made by .30 and .50 caliber projectiles. In order that a manufacturer be eligible to supply such bullet-seal tubes he must first satisfactorily pass rigid firing tests conducted by the Ordnance Department of the Army at its large proving ground at Aberdeen, Maryland. Tubes must meet in this test, requirements of running cool enough to withstand the heat developed in operation. They must also satisfactorily seal ten or more .30 caliber bullets fired through the tire and tube in various ways. Tests specify that only a certain percentage of the original air pressure in the tire shall leak over a period of two and one-half hours after the first shots are fired.

In the event that *puncture-proof tubes* are likely to be used in places where regular tubes are now used, we illustrate this type of tube in Figure 7.

Rims for Pneumatic Tires

Three general types of rims cover all of the pneumatic tire applications. These are drop-center rims, semi-drop-center rims and flat base rims. It must be understood that tires designed for drop-center and semi-drop-center rims cannot be used on flat base rims and conversely tires designed for flat base rims cannot be used on drop- or semi-drop-center rims. A special part of this article is devoted to instructions and illustrations of the mounting and demounting of tires on rims for purpose of informing those readers who are assigned the duties of maintenance or the duties of supervision or responsibilities of same. The writer would like to emphasize this feature because a number of specific

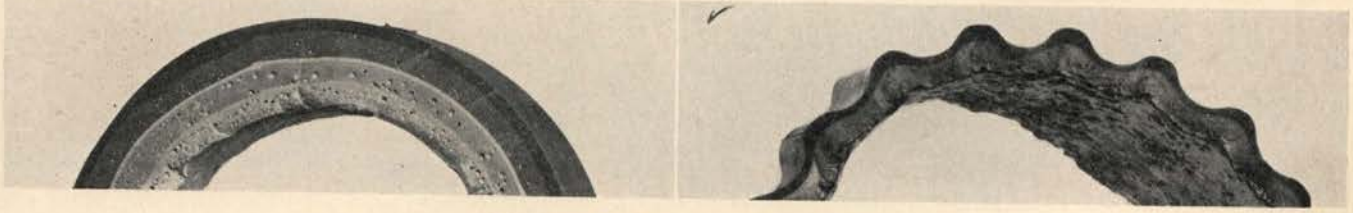


(7) Puncture-proof tube

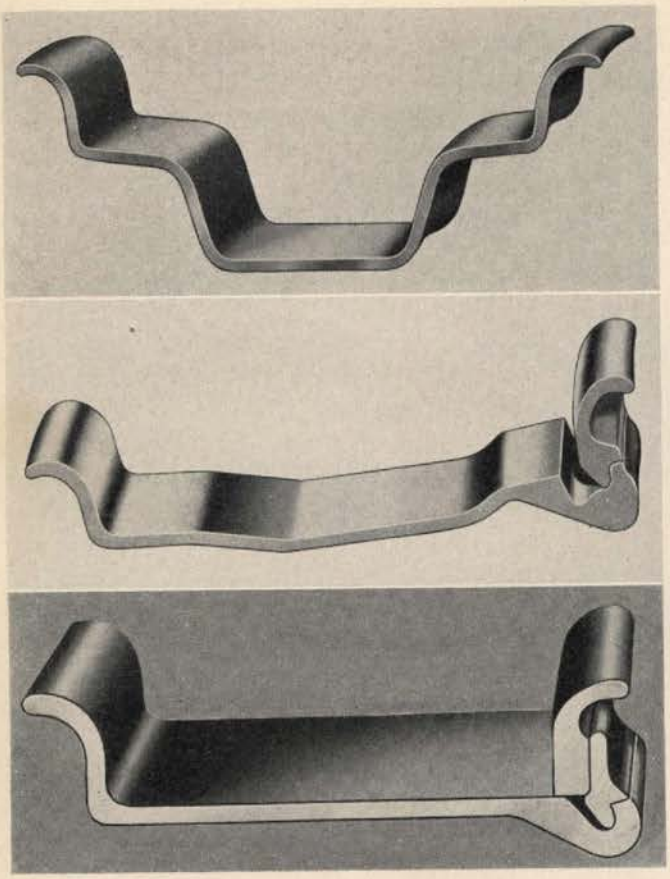
cases of misapplication have been noted during recent maneuvers. Figures 8, 9 and 10 show the above three rims. The types of rims used in each specific case are outlined in the table shown on page 18.

Bogie Roller (Solid) Tires

The bogie roller is the load-carrying wheel of track-laying vehicles—tanks and half-track vehicles. A great deal of special development work has been necessary to produce satisfactory solid tires for this service. Twenty miles per hour has always been considered about the maximum speed which solid tires can operate satisfactorily. Speeds greater than this create excessive heat, which causes early failure of the tread rubber due to heat disintegration. Special compounds were developed for these military vehicle bogie wheels which are performing satisfactorily at speeds up to forty miles per hour. Both of these vehicles employ a track, treaded with rubber on both sides, which helps to protect and



(5) and (6) Bullet-sealing tubes

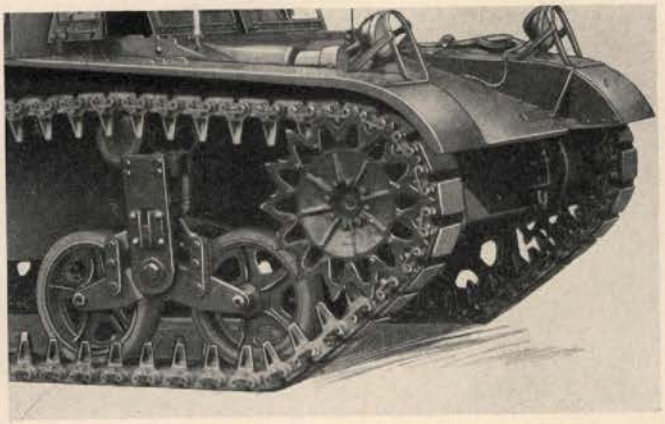


(8) *Top,* drop-center rim. (9) *Center,* semi-drop-center rim. (10) *Bottom,* flat base rim

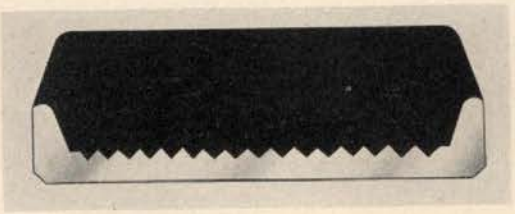
prolong the life of the bogie rollers. Bogie rollers are shown in Figures 11 and 11-a.

Rubber Tracks

Rubber tracks are used on the cavalry's light tanks and half-track vehicles. Cross-country mobility is one of the first requisites of such vehicles and without a track-laying or crawler feature such maneuverability would be limited. Much has been written in recent articles concerning the short-comings of other countries' military equipment when steel track units were compelled to move long distances over improved roads. Steel tracks have advantage of obtaining more traction in certain types of soil conditions but are definitely short-lived when operated at high speeds over improved roads. Consequently, the Army has developed these rubber tracks. The one is made up of many rubber blocks connected through rubber bushings which require no lubrication, and is illustrated in Figure 11. This is used on a light tank.



(11) Bogie rollers



(11-a) Section of bogie roller

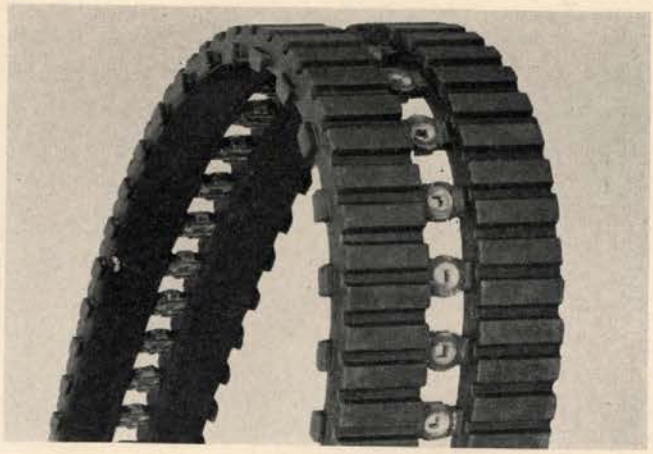
The other type of track is the continuous rubber band. This is used on the half-track vehicles. This is shown in Figure 12.

(See note.)* A more detailed study of the problems of operation, application, repair and general description of each of these items is given in the following:

(1) *Motorcycles, Solo.* Motorcycles also operate on cross-country terrain, as well as on highways and

*NOTE: CAVALRY DIVISION EQUIPMENT, ACCORDING TO PRESENT TABLES OF ORGANIZATION:

(1) Motorcycles, solo—4.00-18 high-traction pneumatic motorcycle tires.
(2) Motorcycles, side-car and motortricycles—4.50-18 or 5.00-16 high-traction-type pneumatic tires.
(3) Scout cars—8.25-20 pneumatic mud and snow type tire, with bullet-sealing tubes.
(4) Passenger cars, light—6.00-16 commercial type pneumatic tires, and regular tubes.
(5) Light tanks, Track-laying type—20x6 size bogie rollers, pressed-on type solid tires.
(6) Command reconnaissance cars (Bantam), ¼-ton, 4x4, 5.50-16 or 6.00-16 high-traction (mud and snow) pneumatic tires and regular tubes.
(7) Half-track vehicles—8.25-20 high-traction tires on the front (driven) wheels with bullet-seal tubes.
(8) Antitank guns, 37-mm. (towed by scout cars) 6.00-16 commercial-track pneumatic tires and regular tubes.
(9) Field Howitzer, 75-mm. (horse-drawn)—6.00-20 commercial tread pneumatic tires with bullet-sealing tubes.
(10) Field Howitzer, 105-mm. (towed by 4x4 truck prime mover) 7.50-24 commercial-tread pneumatic tires and bullet-sealing tubes.
(11) Mortar, motor—8.25-20 10-ply tires and tubes same as scout cars.
(12) Trucks, pick-up—various sizes of pneumatic tires and regular tubes.
(13) Trucks, ½-ton, 4x4, command reconnaissance on ambulance body—7.50-16 high-traction-type pneumatic tires.
(14) Trucks, 2½-ton, 6x6, cargo—7.50-20 high-traction-type (mud and snow) pneumatic tires.
(15) Semi-trailers (Truck-Tractors and special horse-portée type)—commercial truck tires and tubes.
(16) Truck, wrecking, 4x4, 4-ton—mud and snow tires and regular tubes.



(12) Continuous band type track

roads. High-traction tires are required as illustrated in Figure 1.

Regular commercial tubes are used, although bullet-sealing tubes may be required in actual warfare.

Wheels and rims are integral and are shown in the indicated figures.

Troubles and Remedies

Fast wear on the rear tire is the most prevalent complaint, the only remedy for this is to keep the inflation pressure at the recommended figure, and a tolerant use of the clutch and brake by the operator.

Punctures are naturally encountered, which are repaired in the usual way with a "cold patch" or a vulcanized patch. Puncture-sealing tubes may be secured for these vehicles, and it appears to the writer that more of these tubes should be used to eliminate delays due to punctures.

Valve damage. Valves are frequently damaged or pulled from the tubes because of the tire slipping on the rim. This is definitely caused by under-inflation, and the remedy is obviously to maintain the proper air pressure. *Keep valve caps on valves.*

(2) *Motorcycle, Side Car.* The tires and tubes used on these units are identical with those outlined in paragraph 1 above.

(3) *Scout Cars.* Due to the practical use of this vehicle by scouting parties over cross-country terrain, a *high-traction tire* is specified. This type of tire is pictured. (See illustrations 3 and 13.)

The tubes in all of the tires are of the bullet-resisting type as are shown in Figures 5 and 6. It is obvious that equipment being used in this type of service would need some protection against enemy fire.

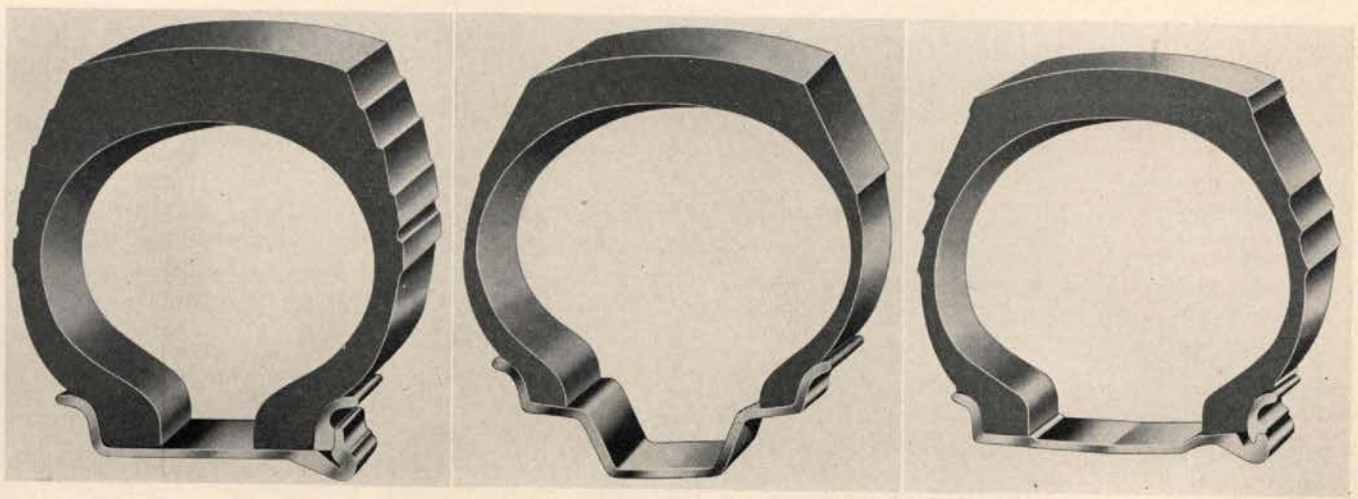
Regular commercial type flat base *rims* are used with the tires and tubes on these vehicles. A cross-section sketch of tire, tube and rim is shown in Figure 13.

Troubles and Remedies

Mounting problems. Bullet-seal tubes are much heavier and stiffer than regular tubes, and sometimes are found to be quite difficult to insert in the casings. The insertion is facilitated by wetting the tube with soapy water.

Balance problems. Scout cars are ofttimes required to operate at high speeds on highways, and tire and tube assemblies are therefore required to be in good enough balance to not shimmy or tramp. Balancing machines are used to balance the wheel assemblies, counter-balances being attached to the wheel or rim opposite the heavy side.

Fast wear. The front and rear wheels of scout cars are loaded unequally. The front tires carry about 2,200 pounds each, while the rear tires carry 3,400 pounds each. Due to the fact that there is no differential between the front and rear axles, the air inflation pressures must be adjusted so that the front and rear tires must have the same loaded or rolling radii. *Forty pounds inflation in the front tires and sixty-five pounds inflation in the rear tires is required.* If equal loaded radii are not maintained, abnormal and excessive wear will result on the front tires.



(13) *Left,* cross section of tire and rim. (14) *Center,* drop-center rim. (15) *Right,* tire on semi-drop-center rim

Punctures. Nails and pieces of steel and bullet holes which do not seal completely may be patched in the usual way with a "cold patch." A vulcanized patch is not recommended for bullet-seal tubes.

Leaky valves. Valve cores which are leaking should be replaced, and as a double insurance against leakage, caps should be securely applied at all times on the end of the valve. Valves which leak around the base cannot satisfactorily be repaired in the field, but should be returned to the manufacturer, who may be able to repair them.

Under-inflation and over-inflation. In addition to causing unequal wear, under-inflation will bring about premature failure of the tire due to weaknesses as result of excessive heat in one case, and in others may result in bruise breaks. Over-inflation has a tendency to weaken the cord strength safety factor causing impact breaks in the body of the tire and may also develop separation of the tread from the body. See illustrations at end of article, for example.

Mechanical misalignment. Results in premature and fast tread wear. Reputable machines are available for determining such misalignment and for correcting same.

(4) *Passenger Cars, Light.* Commercial type highway tread design, *passenger car tires* are used on the above Army units. See Figures 2 and 3.

The tubes used have to date been of the regular type; however, puncture-proof tubes or bullet-proof tubes, as shown in Figures 5, 6, and 7, may be used. Since the passenger car is in itself not armored, it is not felt likely that bullet-sealing tubes are essential; but, on the other hand, puncture-proof tubes would be highly advantageous in reducing road delays due to punctures. It is conceivable that retreating enemy forces would deliberately scatter puncture-producing hazards over all roads, and tires with regular tubes would be quickly punctured on all wheels, and naturally enough spare tires could not be carried. A bullet-seal tube or puncture-proof tube would take care of most of these hazards.

The wheels used on passenger cars are of the standard types commonly used by the public throughout the country. A cross-section of this type drop-center rim is shown in Figure 14.

Troubles and Remedies

Fast wear caused by under-inflation, high speeds, abusive use of clutch and brakes, misalignment of front wheels, etc. The corrections are naturally maintenance of proper inflation, exercising of care by operator, proper alignment.

Punctures caused by nails, scrap iron, glass, pieces of shell fragment, etc. The remedy is to patch the tubes with a hot or cold patch, but the preventive for most of such trouble is as outlined above, the use of bullet-seal tubes or a good, puncture-proof tube.

Balance. Extreme, out-of-balance condition will cause shimmy or tramp, especially at high speeds. The remedy is a careful balancing operation to the tire, tube and wheel assembly, using counter-weights for correction.

Bent or rusty rims. Bent rims are generally the result of accident, but sometimes are caused by hitting small and firm obstructions such as chuck holes in pavements, curbs, etc. Most rims can be straightened, but extreme cases may require replacement of the wheel.

Tire failures. Two types of failures occur predominately. First, impact breaks caused by hitting a sharp obstruction and accentuated by *over-inflation;* and second, by rim bruises, also caused by hitting obstructions and accentuated by *under-inflation.* (Illustrations of these two types of failures are shown in this article.)

(5) *Light Tanks.* The bogie roller and the rubber track, is shown in Figure 11. The speed of thirty-five miles per hour or more puts a very severe requirement on the bogie rollers, and special compounds and adhesion methods have had to be developed by the tire companies. Today the bogie rollers are considered very satisfactory, inasmuch as they have a relatively high mileage life.

The rollers are pressed on the steel bogie wheels and when they need replacement it is a relatively simple operation to remove the wheel, press off the rubber roller and press on a new one.

Not much can be recommended to improve the service of either the rollers or the tracks, except that it has been found that small rocks, sticks and foreign matter become lodged between the bogie roller and the supporting arms, which often wears away the rubber prematurely.

It is also necessary to *keep the proper tension on the track.* This is done by an adjustment on the idler wheel at the rear. The life of the track may be increased somewhat by reversing the direction of rotation, and also turning the track blocks over at the proper time.

Light oils and kerosene used sometimes in cleaning grease from the wheels, suspension parts, guides, etc., *should not be allowed to touch* and remain on the *rubber of the track* or the *bogie rollers,* as this has a definite, deteriorating effect on the tires.

(6) *Command Reconnaissance Cars (Bantam)* ¼-ton, 4x4. This is a new light, low profile, high speed car, recently developed. Much of the success in gaining its popularity has been due to the high-traction pneumatic *tires* with which it is equipped. These are sizes 5.50-16 and 6.00-16, four ply.

The tubes procured so far have been of the regular type.

The wheels are of the integral type, detachable at the hub, drop-center rim. See Figure 14.

Reports from early experiences indicate that flat

tires are already occurring. This points to the necessity of using a puncture-proof or bullet-seal tube.

Other troubles will no doubt show up in the form of bruise breaks, impact breaks, as may occasionally be expected in all types of tires.

(7) *Half-track Vehicle.* This equipment has the 8.25-20 10-Ply mud and snow *pneumatic tire* on the two front wheels, and a continuous *rubber-band track* serving as the rear wheels. The new models have sixteen 12" x 4" cured-on type *bogie rollers* to support the weight inside the tracks, eight of these on each side. These tracks and bogie rollers appear to be relatively free from premature failures. Track is shown in Figure 12.

The front wheels are a standard type of truck wheel, which demounts at the hub and has a *flat-base* truck rim integral with it. *The tubes* are of the bullet-seal type illustrated in Figures 5 and 6.

(8) *Antitank Gun, 37-mm.* The *tires* are of the regular commercial, passenger car type as shown in Figures 2 and 14.

Rims are of the standard, drop-center type, as shown in Figure 8.

Tubes are regular commercial type.

There are no particular problems here. The unit is over-tired to the extent that if tires go flat, it can still be pulled considerable distances on its flat tires.

(9) *Field Howitzer, 75-mm. Tires* are of the regular commercial type truck tire for highway use, size 7.50-24 eight-ply, such as shown in Figure 4.

The *tubes* are of the bullet-sealing type.

The *rims* are of the flat-base type.

There are no premature failures, or unusual types of failures, encountered with the tires or tubes on this vehicle. Most of the field guns are purposely over-tired, which almost eliminates any trouble.

(10) *Field Howitzer, 105-mm. Tire* equipment is identical with that of the 75-mm. Howitzer as shown in Figure 4.

(11) *Mortar, Motor Carriage.* This type of equipment is made from two basic types of vehicles: one, the scout car, as described under 3; and second, the half-track vehicle. The *tire and rubber* equipment in the first case is identical with that of the scout car. The front wheels of the half-track are identical with the scout car front wheels, but the rear wheels are replaced with a crawler continuous band rubber track. Inside this track are sixteen (eight on a side) small (12" x 4") *cured-on type bogie rollers.* Earlier models used a steel bogie roller. It is felt the continuous-band tracks with the rubber bogie rollers will endure under average conditions 5,000 miles.

(12) *Trucks, Pick-up.* Tires, tubes and rims are identical with half ton 4x4 Command Reconnaissance Trucks. See Figure 3.

(13) *Truck, Half-ton.* 4x4, Command Reconnaissance. Tires—same type of tread is used as outlined above.

The tubes used in these tires are of the regular commercial type, but bullet-sealing tubes may also be used if specified, such as are shown in Figures 5 and 6.

Wheels and rims. This tire and tube are used on the semi-drop-center type of rim, which insures a tight fit of the bottoms of the beads, which is necessary in this size tire to prevent slippage of the tire on the rim. This type of rim is shown in Figure 15.

The semi-drop-center rims used are quite similar in outward appearance to the flat-base truck-tire rims more commonly known. In mounting and dismounting the tires from the semi-drop-center rim, the tire beads must be "buttoned" or "unbuttoned," keeping the one side of the bead in the center well of the rim while the opposite bead is being maneuvered over the side of the rim. The accompanying pictures illustrate this process. Many tires have been damaged at the beads because this feature of the fit of the tire on the rim is not understood.

Complete mounting instructions with pictures are elsewhere given in this article.

Troubles and Remedies

The most prevalent trouble with tire equipment on these vehicles has been in keeping the front wheels properly balanced and aligned. Frequent checking and correction of alignment has been found to be necessary to prevent fast tread wear, as well as to guarantee proper handling.

Balancing has also been a problem with the front wheels of this vehicle. These large section tires and tubes have a tendency to shimmy or tramp if not fairly well balanced. Counter balances on the wheels have been found to be effective as a remedy. See photographs at end of this article.

(14) *Trucks, 2½-ton,* 6x6, Cargo. These trucks are using the *commercial type tire* with a mud and snow tread pattern as shown in Figure 3. Further explanation is not considered necessary.

The *tubes* used are of the regular commercial type.

Wheels and rims are also of standard commercial type. The rims are in most cases riveted or welded to the center part of the wheel, the wheels being demountable at the hub. The rim is the standard, flat-base type, as shown in Figure 10.

Troubles and Remedies

Problems of premature wear, punctures, balance, and hazard failures are of the usual expected nature on this equipment. Recommended inflation, proper balance, valve caps, proper alignment, all help to insure long life of tires and tubes.

(15) *Truck-tractors and Semi-trailers* (Horse Portée Units). This motorized cavalry equipment about which much has been written in a former issue of The Cavalry Journal, depends on a large number of tires of ample size and capacity to enable it to ac-

complish its mission and to cover long distances in short time. The highly developed truck and bus tires adapt themselves to these requirements. Regular highway type treads and regular tubes and rims are used. The use of puncture-proof tubes would be desirable in the writer's opinion.

This equipment is rather new and no unusual troubles have been reported.

Summary of Motorized Vehicles and Gun Carriages Used by the Cavalry Division

The foregoing paragraphs have outlined, more or less in detail, the tire, tube and rim equipment used on the various vehicles. The writer feels that a table summarizing this equipment and incorporating the all-important inflation recommendations should be a part of this article. (See note.)*

How to Get the Most Service from Pneumatic Tires

Much has been said and written concerning the common causes of premature failures and low mileage of pneumatic tires in consumer and commercial operations. It seems worthwhile to repeat briefly, in this period of preparing our nation for national defense, the major factors influencing *tire life*. These are outlined below, with the hope that officers and enlisted men in the cavalry will read and put into practice throughout the motorized and mechanized equipment the recommendations set forth herein.

(A) *FAST TREAD WEAR*

Causes:

(1) *High temperature.* At 100° atmospheric temperature the rate of tread wear is five times as fast as at 40°. Road surfaces become much hotter than air temperatures. Winter driving will result in twice as much mileage as summer driving.

(2) *Speed.* At 60 miles per hour the rubber wears off twice as fast as at 45 miles per hour.

(3) *Horsepower.* Increased horsepower of modern engines results in faster tread wear.

(4) *Road surfaces.* Tread wear varies greatly with the type of road surface. Some apparently smooth types of hard-surface roads are highly abrasive.

(5) *Accelerating and braking.* Sudden stops and starts produce much faster tread wear than easy stops and starts.

(6) *Misalignment.* Wheels that do not run parallel with each other scuff the rubber off prematurely.

(7) *Under-inflation.* A 30% under-inflated tire will give only about 75% of its expected mileage.

Remedies or Suggestions for Improvement:

(1) Keep tires inflated to recommended pressures.
(2) Keep valve caps securely tightened on each valve.
(3) Keep brakes properly adjusted.
(4) Keep wheels in proper alignment.
(5) Keep spare tire in use by alternating it on running wheels.
(6) Change wheel positions every 4,000 to 6,000 miles.

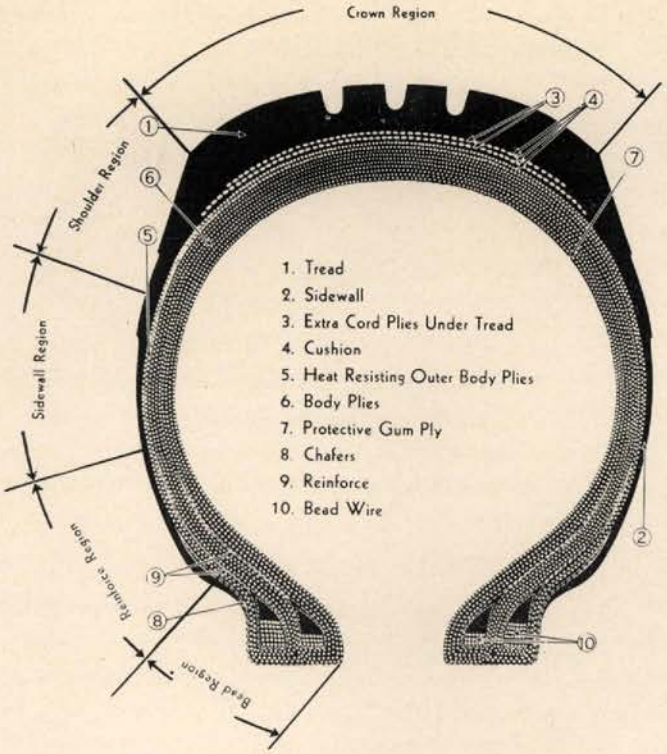
(B) *RIM BRUISES*

Causes:

When a tire hits an object which is solid and sufficient in size, the force may collapse the tread or sidewall of the tire against the flange of the rim. The tendency for this to occur is made more likely when

*Note: Tire, Rim Equipment and Inflation Table.

Unit	Tire Size	Type Tire	Type Tube	Size Rim	Type Rim	Recommended Inflation
Motorcycle, solo	4.00-18- 4	Motorcycle	Regular	18x2.15B	Drop Center	22
Motorcycle, sidecar	4.50-18- 4	Motorcycle	Regular	18x2.15B	Drop Center	22
Scout car, M3A1	8.25-20-10	Mud and snow	Bullet seal	20x5.00S	Flat Base	40 lb. Front 65 lb. Rear
Passenger car	6.00-16- 6	Regular	Regular	16x4.00E	Drop Center	28
Light tanks	20x6x16	Solid bogie roller	None	.....	.....	..
Command reconnaissance car, ¼-ton	5.50-16- 4 or 6.00-16- 4	Mud and snow	Regular	16x4.00E	Drop Center	30 28
Half-track vehicle	8.25-20-10 Fronts Only	Mud and snow	Bullet seal	20x5.00S	Flat Base	60
Antitank gun, 37-mm.	6.00-16- 6	Regular	Regular	16x4.00E	Drop Center	36
75-mm. Field Howitzer	6.00-20- 6	Regular	Bullet seal	20x3.75P	Flat Base	50
105-mm. Field Howitzer	7.50-24- 8	Regular	Bullet seal	24x4.33R	Flat Base	45
Motor carriages	8.25-20-10	Mud and snow	Bullet seal	20x5.00S	Flat Base	60
Trucks, pick-up	7.50-16- 6	Mud and snow	Bullet seal	16x5.50F	Semi-drop-center	40
4x4 Trucks and Command reconnaissance car, ½-ton	7.50-16- 6	Mud and snow	Regular	16x5.50F	Semi-drop-center	40
6x6 trucks, 2½-ton	7.50-20- 8	Mud and snow	Regular	20x5.00S	Flat Base	55
Tractor trucks and semi-trailer	9.00-20-10	Regular	Regular	20x6.00T	Flat Base	60
Trucks, wrecking, 4x4	9.00-20-10	Regular	Regular	20x6.00T	Flat Base	60



(16) Nomenclature

pressures are below those recommended. Such bruises occur in new tires as well as in old ones. The tube does not necessarily immediately puncture, but will puncture or blow out soon thereafter.

A typical failure is shown in Figure 17.

Remedies or Suggestions for Prevention:

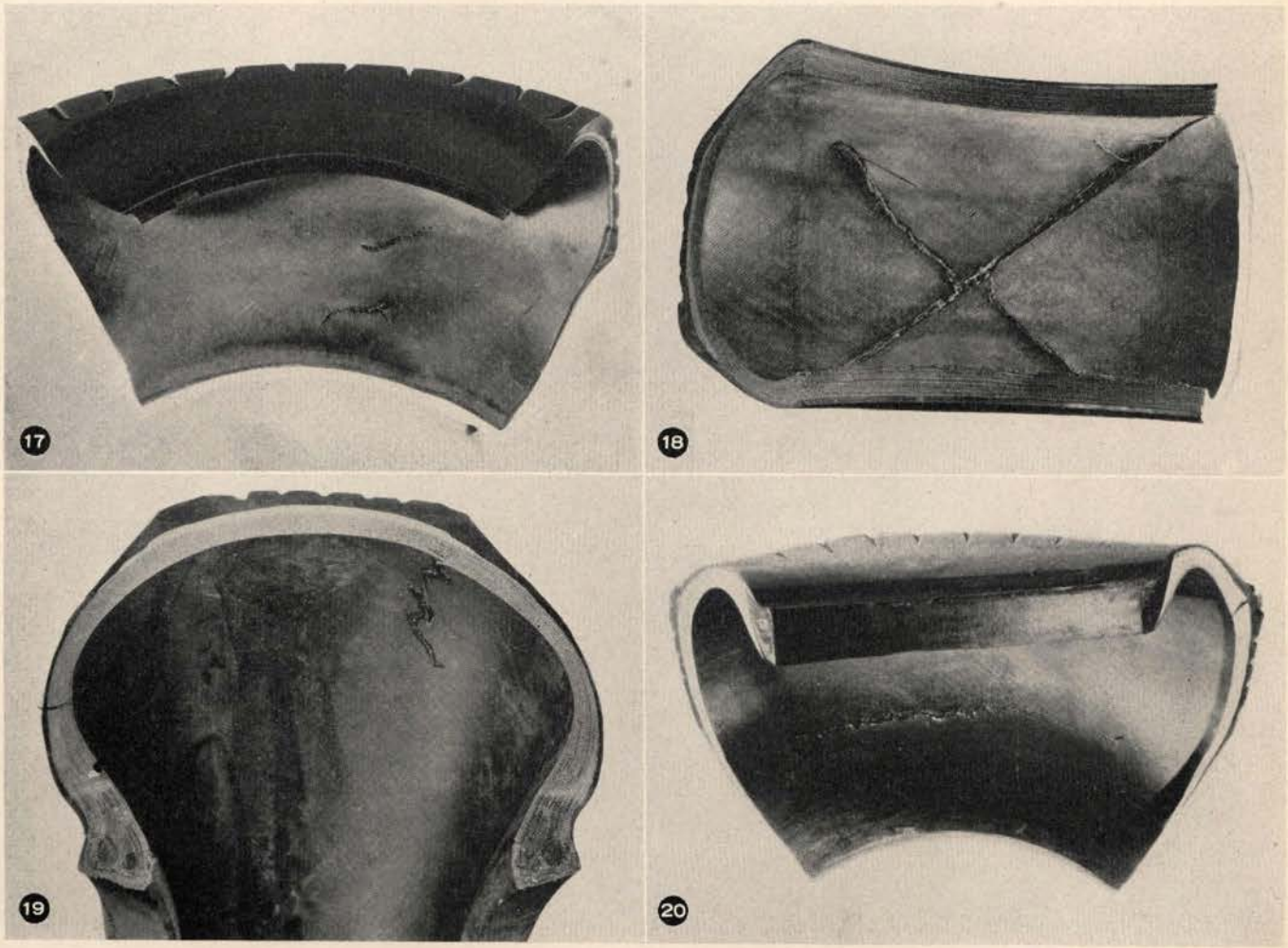
(1) Keep tires inflated at recommended pressures.
(2) Avoid hitting curbs, stones, stumps, etc., with the tires.
(3) If the injury is in the upper sidewall or tread, or shoulder region of the tire, repairs may be successfully made.

(C) *IMPACT AND HEAT BREAKS*

Causes:

Long-distance running with heavy loads and often augmented by under-inflation, result in tires becoming too hot. This heat weakens the cord body strength, lessening its safety factor. The tire may then strike an obstruction, and in its weakened condition rupture the cords. The shape of the break is a diagonal or "X." These are shown in Figure 18.

High, sustained speeds and overloads develop a third type of break, known as the crown break. An



(17) Rim bruises. (18) Impact and heat breaks.
(19) Crown break. (20) Overload or flex break

illustration of this is Figure 19. An obstruction does not necessarily cause this failure.

Suggestions for Prevention:

(1) Maintain proper air pressure when tires are cool. (Do not "bleed," i.e., release air, when pressures build up.) It is normal for tires to become warmer while operating, which results in an increase in pressure. Most United States Army vehicles, as used by the cavalry, are properly tired, and overloading is not often the cause of tire failures.

(2) If overloads are frequently encountered and cause this type of tire failure extra ply tires or tires made of rayon are recommended. Rayon cord does not weaken under heat as much as cotton.

(3) This type of break is not repairable.

(D) *OVERLOAD OR FLEX BREAKS*

Causes:

Overloading is the principal cause although under-inflation may also cause it. The break occurs in the lower sidewall region or the upper sidewall and shoulder regions, as shown in Figure 20.

Remedies and Recommendations for Prevention:

(1) Keep tires inflated to recommended pressures. (Do not overinflate.)

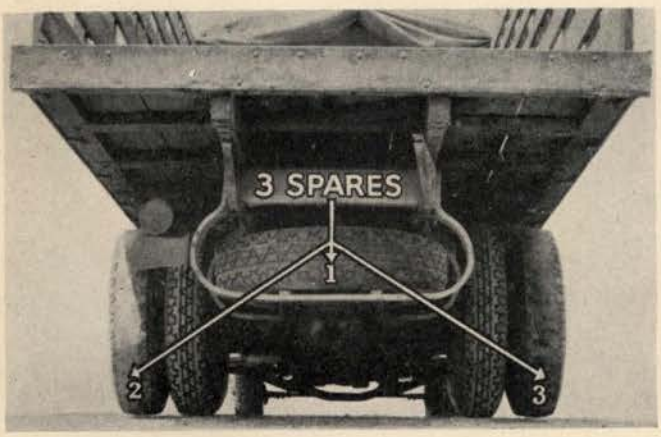
(2) Keep dual tires properly matched.

(E) *MISMATCHED DUALS*

The illustration below clearly points out this malpractice. If a truck is designed to carry a load on four tires, two tires certainly should not be expected to do almost all of the work. Mismated duals often cause premature failures such as crown breaks, flex breaks, and impact breaks. See Figure 21.

(F) *DAMAGE DUE TO RUNNING FLAT*

It is the air in the tire that carries the load; the tire merely serves as a container for this air. If a tire is allowed to run almost deflated or completely deflated



(21) Mismated duals

(22) Damage due to running flat

severe damage quickly results. This is shown in Figure 22.

Tire, Tube, and Wheel Balance

Most military equipment is designed to operate on the highways at about thirty miles per hour average. At this speed, troubles with shimmy and tramp, due to extreme out-of-balance conditions, are not likely to occur. However, some vehicles, namely, motorcycles, scout cars, passenger cars, one-quarter- and one-half-ton command reconnaissance cars often do attain fifty to sixty miles per hour, at which speeds a fair degree of balance is necessary to prevent shimmy or tramp.

Even though tire, tube and wheel assemblies are in good balance when new, service wear, changing of tubes due to punctures, etc., may soon result in a troublesome out-of-balance condition. It is practical to rebalance such tire, tube and wheel assemblies by placing the wheel on a static balancing jig, determine the light point of the assembly and fasten a specially designed counterweight (or weights) to offset the heavy part diametrically opposite. These weights are easily attached to the rim and generaly are put on the inside so that they will not show and they will not become brushed off.

Sometimes tires are worn with extreme flat spots as result of bad, out-of-balance condition, eccentric brakes or sliding and it is difficult to offset the bumping action which these flat spots cause.

Proper balance is most necessary on the front wheels, but in some cases rear wheels out of balance will also cause shimmy trouble which appears to be caused by the front wheels.

Remember that shimmy and tramp conditions may be cause by misalignment, damaged wheel geometry, bent steering arms, loose parts, unequal shock absorber adjustments, and other mechanical maladjustments.

The high-speed vehicles should be constantly checked for proper balance of the wheel assemblies. This will reduce spotty tread wear, improve tire mileage, bring about stability at high speeds as well as help to eliminate shimmy and tramp vibration.

Methods of Mounting and Demounting Tires and Tubes on Rims

Rims fall into three general classifications: (1) drop-center rims; (2) semi-drop-center rims, and (3) flat-base rims.

(1) *Drop-center Rims*

Correct method of mounting tires on drop-center rims:

(1) Insert tube in tire.
(2) Barely round out with air.
(3) Force inside bead over top of flange by "buttoning-on" action.
(4) Force second bead over flange of rim in the same manner, using flat, dull, tire tool to assist "buttoning-on," prying action.
(5) Center tire as near as possible, concentric with tops of rim flanges, both sides.
(6) Inflate tube through valve until beads of tire are forced tightly against flanges of rim.
(7) Check to determine if beads are in proper place as indicated by centering rim near top of flange.
(8) Completely deflate tube.
(9) Inflate tube to recommended pressure.

This procedure will eliminate buckling of tube between beads.

(10) Securely fasten valve cap.

Correct method of demounting tires from drop-center rims:

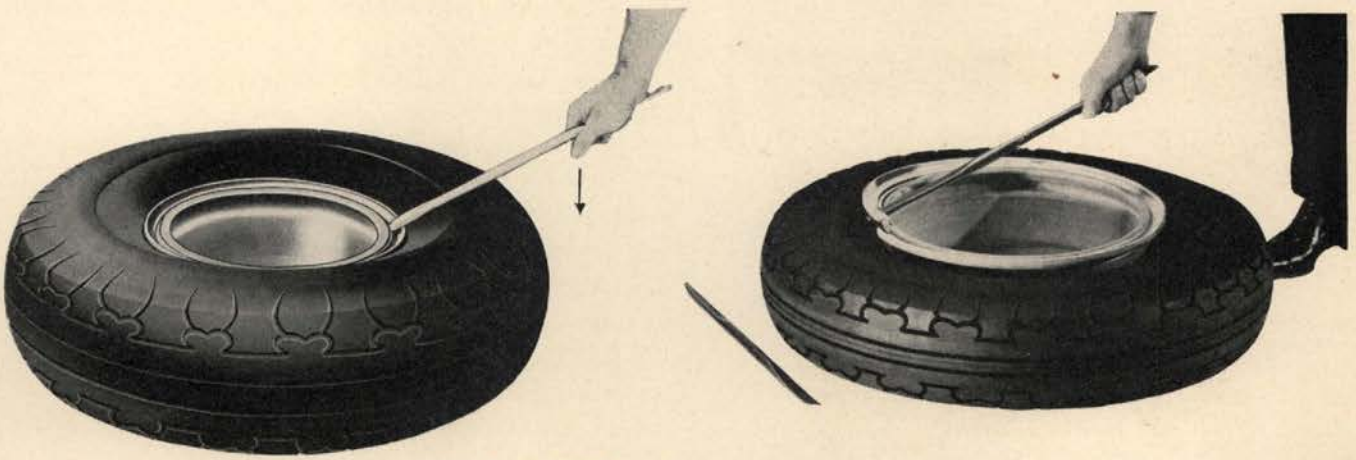
(1) Remove valve core and deflate.
(2) Loosen beads of tire from both flanges and bead seats, by forcing toward center of rim.
(3) Force one side of outer bead into well of rim and pry diametrically opposite side of same bead up and over flange, with flat, dull tool.
(4) Holding this "bite" pry with second dull, flat tool, progressive portions of the bead over the flange, until the whole bead is outside of the rim.
(5) Pull out inner tube.
(6) Working from other side, pry second bead over the same flange, in the same manner as the first bead.

(2) *Semi-Drop-Center Rims*

There are two current makes of semi-drop-center rims, known as RHP and LTS. The slight drop-center well in the center of the base must be utilized in mounting and demounting tires similar to drop-center rim. Figures 23 and 24 should be studied by operators before trying to mount or demount tires on these rims. Operators often mistake this rim for a flat-base rim and do considerable damage, sometimes ruining the bead of the tire.

Correct method of mounting tires on semi-drop-center rims:

(1) Being sure that no dirt or foreign matter is in the tire, insert tube and flap.
(2) Lubricate beads and rim with vegetable oil soap or soapy water. (Do not use oil.)
(3) Inflate tube, barely rounding out. Too much air will make mounting difficult.
(4) Place tire on rim with valve in line with valve hole, and insert valve through hole.
(5) Force first bead into well of rim adjacent to valve, and pry remaining portion over gutter of rim with thin, flat, dull tire tool.
(6) Apply second bead, starting at point opposite valve.
(7) Force and hold this position of second bead into shallow well near center of rim section.
(8) Holding this into place, pry with "buttoning-on" action and short, progressive steps, with thin, dull, flat tool, remainder of bead over gutter side of rim.
(9) Apply loose side ring (RHP side ring is a continuous ring, which requires a "buttoning-on" method; and type LTS side ring is a split type ring, which requires application by inserting one end into gutter and progressing with tire tools around complete circle of rim.
(10) Being sure rings are properly seated in gutter



(23) *Left,* RHP rim has a continuous side ring. (24) *Right,* LTS rim has a split side ring

and tire is concentric with rim, inflate to recommended pressure.

(11) Apply valve cap.

Method of Demounting:

(1) Remove valve core to deflate.

(2) Using tire tool, pry inward side ring until this bead is free from bead seat.

(3) Pry out and up on side ring removing it from base (the RHP continuous side ring requires an "unbuttoning" action; the LTS split-side ring is removed by prying up and over gutter one end and progressing around the rim until flange can be lifted off.

(4) Pry loose bead on other side of rim.

(5) Force one side of bead toward center of rim and holding same, pry opposite side of same bead up and over gutter of rim with "unbuttoning" action, progressing with second tool pry remainder of bead over gutter.

(6) Loosen other bead from flange by prying same toward center of rim.

(7) Remove tube and flap.

(8) Lubricate with soapy water second bead, to facilitate its removal.

(9) Being sure that one side of the second bead is in well or depressed part of rim, pry opposite side, up and over gutter, with flat, thin, tool. The tire should fall from the rim with little effort, with "unbuttoning" action.

Note: It may not be absolutely necessary to remove second bead, if same tire is to be used again on same wheel.

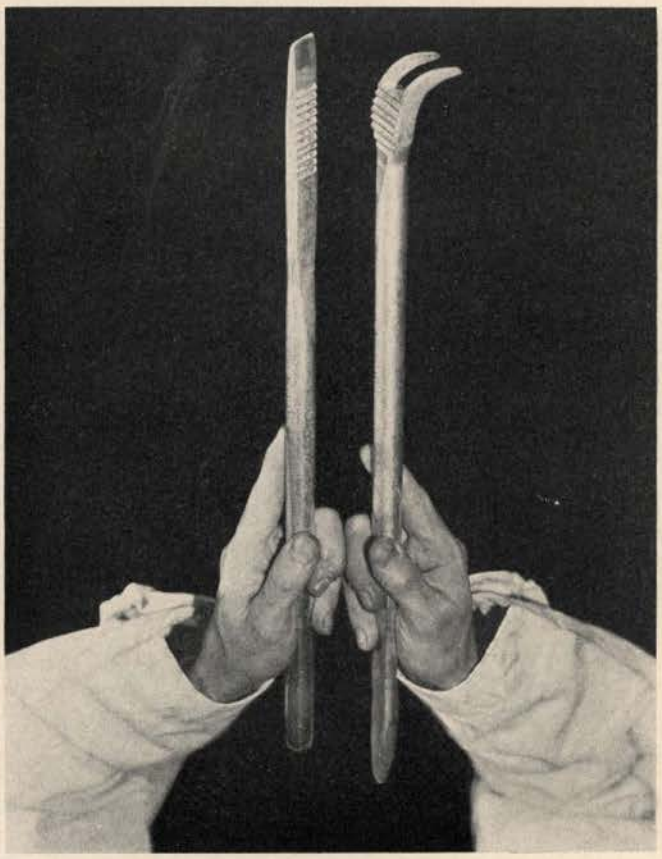
(3) *Flat-Base Rims*

Little difficulty is ever encountered with this type rim, in mounting or demounting tires, because it has been used for such a long time. Furthermore, the flat-base tires which fit on the flat-base rims are slightly larger in diameter at the bead seats, allowing the tires to slip on and off without much difficulty. Sometimes rust forming on the rims makes it a little difficult to remove tires.

Diagrams of the flat-base tire and rim sections are shown under illustrations Nos. 10 and 13 in the preceding paragraphs.

Tools

A recently developed pair of tools has been put on the market which should be in every tire changer's equipment. These are known as the Miracle Tire Remover. See Figure 25. These two tools are found to be extremely effective in handling the tires both demounting and mounting, on all three of the foregoing rims. They are particularly effective in breaking loose "frozen" or "compression fit" beads from their respective rims.



(25) Miracle tire remover

Crowd Psychology*

By Major N. B. Thompson, Jr., Cavalry

CURRENT history indicates the possibility that potential forces may now be established in this country and that in the event of war, these forces could cause considerable confusion.

Certain Corps Areas are exceedingly vulnerable to invisible forces due to the large registration of aliens and the many sensitive points covered by transportation, rail, aeroplane, and bus, particularly in and around the larger industrial centers.

The whole structure of civilized life is in peril.

Here are problems of plenty and of deficiency, of war and of peace, which are the problems of today—many problems which the world has never before been forced to meet.

In these hurried days the daily scene crowds out efforts of long-range thinking. Yet it is only by looking ahead that we can seize the initiative. Today, as never before, officers can see the need of living and working in harmony with their brother officers. The merry-go-round is whirling so fast that questions are not settled, but are forgotten.

Even where men are fighting for their very existence, they look beyond their immediate struggle to the challenge of the future. The springs of actions in men are many sided. Most men will generously help out a stranger in need, then will go home and quarrel with a member of the family over a trivial question.

The relationship of man to man is one thing; the relationship of grouped men is something else again. Their impact on the world can hardly be exaggerated.

Freedom and power then are our twin heritages and as we use or misuse them, so will civilization of today stand or fall.

Side by side with the headlong pace of industrialization with its tremendous benefits and its unforeseen problems, we find hundreds of thousands of aliens whose ideas are various, including the dissemination of defeatist and pacifist ideas, labor agitation, appeasement doctrine, in one form or another, as well as the run-of-the-mill activities of spies and saboteurs; these subjects are today associated in the public mind.

This group consists of individuals who have no apparent hostile intent, but who are prepared to assist foreign powers in various ways and at a time most advantageous to the foreign power. There is no more timely a subject today than that of "Crowd Psychology" because of the ease in which crowds are assembled. One of the reasons for this is that we are washed by a steady stream of news and advice. This is the phenomenon of an awakening world and at the same time one of the means of its awakening.

Pick up any magazine in the average home and page through it. What can you read provided you have the time? As an example, *Fortune* (October), "The War of Nerves, U. S. Front." Hitler's secret weapon has been turned against the U. S. You may find yourself a casualty, for in this kind of war, everyone is in the front line trenches. *Look* magazine (December), "How Hitler Fools America." He has a pretested plan to conquer the U. S. *Click* (January, '41), "These Women Betrayed France." The *Saturday Evening Post; Time,* any week; the *Ladies' Home Journal,* others too numerous to mention here. There are too many points of view irreconcilable to any single system.

As for newspapers, the press is full of "Crowd Psychology." There are the *New York Times; Cincinnati Enquirer; Louisville Courier Journal; Times Picayune; New Orleans, Chicago Tribune,* or *San Francisco Chronicle,* each issue of which magnifies the enormity of the subject.

The radio—well the ether is so full of the discussion of "Crowd Psychology" that it naturally brings it into your home, forming there another circle of friends discussing the educational or authoritative influence of the commentator.

The aeroplane has finally entered the picture as a means of distributing literature from the skies, announcing policies and ideas, anti or pro-British, Nazi, Italian, Russian, Chinese or Japanese.

Thousands of tons of propaganda from the printing presses of Germany, Russia, Italy and Japan are being poured annually into the United States to say nothing of the British propaganda mainly produced by "committees" in this country.

Does it then seem incredible for the United States as a nation to have been won over to this subject? The whole world is seething with "Crowds."

Can this subject then help us to understand part of our field problem long before we enter the "Zone of Interior" or the "Theater of Operations"?

Such preparedness is classed today with "Power of Command," which all Cavalry officers must exercise, not only from a Military standpoint, but from that of the individuals or crowds with which we come in contact. An aversion to the European variety will be of little help to us, so a study of propaganda of all species will be helpful.

Speed, vigor, cohesion, and preparedness is necessary

*From a lecture to Cavalry-Reserve officers. Major Thompson is Assistant Provost Marshal, Sixth Corps Area.

in everyday life. In every community of 5,000 population or over, there are safety departments, either police or fire, always on the alert, in readiness, so in this cockeyed world of today others look to us to be prepared for any emergency, so that is part of each officer's duty. Fortunately for us, we have the opportunity to see the working methods at work so we have time for counter-defenses, which will have an equal chance of success.

The Individual

Before discussing "Crowds," take a brief look at, and have contact with the individual:

He has emotions.

He loves someone—others he hates.

He fears some and approves of others.

He is joyful in one meeting—sorrowful in another.

We share these emotions. We even spread them. In other words, these emotions are contagious. Whether your college athletic team is victorious, or the presentation of a trivial gift, the gift of a new automobile, elevation to public office—all are emotional.

Just take a look at individual types of unwitting agents of foreign powers. Here we have the persons of undoubtedly good will, but with inadequate awareness of the consequences of their doings—like some of the foreign statesmen trying to put over peace plans.

Then we find people whose good will may or may not be beyond suspicion, but who try to outsmart the leader. They realize they are being used, but they think they are smart enough to use the leader instead. Nobody outsmarts leaders in this respect, but it does not seem to prevent individuals from trying.

While last, but not by any means the least, there are individuals who would turn their own country over to a foreign power rather than permit domestic opponents to gain control, as some of the European nations have experienced.

The Average Man

Data from the induction centers are not summarized today, but we do have available data from the draft army of World War No. 1, regarding the capacity of the average man then, and it is interesting.

The tabulation covers many subjects, so briefly we will review a few subjects revealing the record of the average male citizen of 1917-18 as a composite:

Height	About 67 inches
Weight	About 150 pounds
Brain Weight	About 1,300 grams. 2% Body Weight
Daily Sleep	About 9 hours
Age at Death	About 53 years
Age at Marriage	Early
Number of Children	3 or 4
Education	6th Grade
Average Mental Age	14 Years

With such an average person to work with in 1917-18, and as yet no record for 1940-41, the strength of any suggestion depends in part on the degree to which it seems to be of spontaneous origin, an act of the individual's own initiative.

There being so many children to contend with today, we will look at the child:

Age of Impression	*Age*
Laughter, Glee, Amusement	3
Pain, Suffering	6
Fear, Terror	8
Defiance	10
Pity, Sympathy	11
Impulse, Surprise	12
Wonder, Suspicion	Adult

With these two groups, arrogance and domination are at once instinctively resented and resisted.

Laws of Suggestion

The more direct the suggestion, the greater is its dynamic power. Within the limits of the law just indicated, the dynamic power of a suggestion will be greater the more forcefully and vividly it is presented.

It is more effective to suggest the desired response directly than it is to argue against a response that is not desired. Suggestion is most active at its positive pole, and the negative suggestion tends to defeat its own purpose.

Crowds

Not every gathering of people displays crowd mentality.

This word, "Crowd," must be understood to mean the peculiar mental condition which sometimes occurs when people think and act alike, either immediately where the members of the group are present and in close contact, or where they affect one another in a certain way through the medium of an organization, a party, or the press.

Looking about today in any community, we cannot, if we are the least observant and inquiring, fail to be impressed by the immense crowd phenomena. It may be around the news stand, the parks, the curbstones, any public building. It is simply a sudden and spontaneous clustering of people.

We cannot escape the fact that smaller and larger numbers of people gather from divers directions, cluster at more than one point, then melt away like ice in the sun, leaving scant traces.

These clusterings are often more representative of that which will soon appear as a broad movement of people struggling for something they do not have, even the workers rising against their employers. We cannot overlook these matters because as officers it is our duty to examine everything of a social nature.

Most crowds act instinctively and each instinct, with its effective emotion, becomes organized through complex reactions to the social environment into sentiments which are the controlling forces. Nothing is more unpredictable than an emotionally excited crowd.

Mobs

Contrary to prevailing opinion, a mob is not disorderly or disorganized. It is organized into precisely that kind of a machine, for the reason that it is better capable of extreme vigor. All orders flow from the top down, and responsibility for obedient execution flows from the bottom up. Mobs do not differ from crowds in composition, but in function.

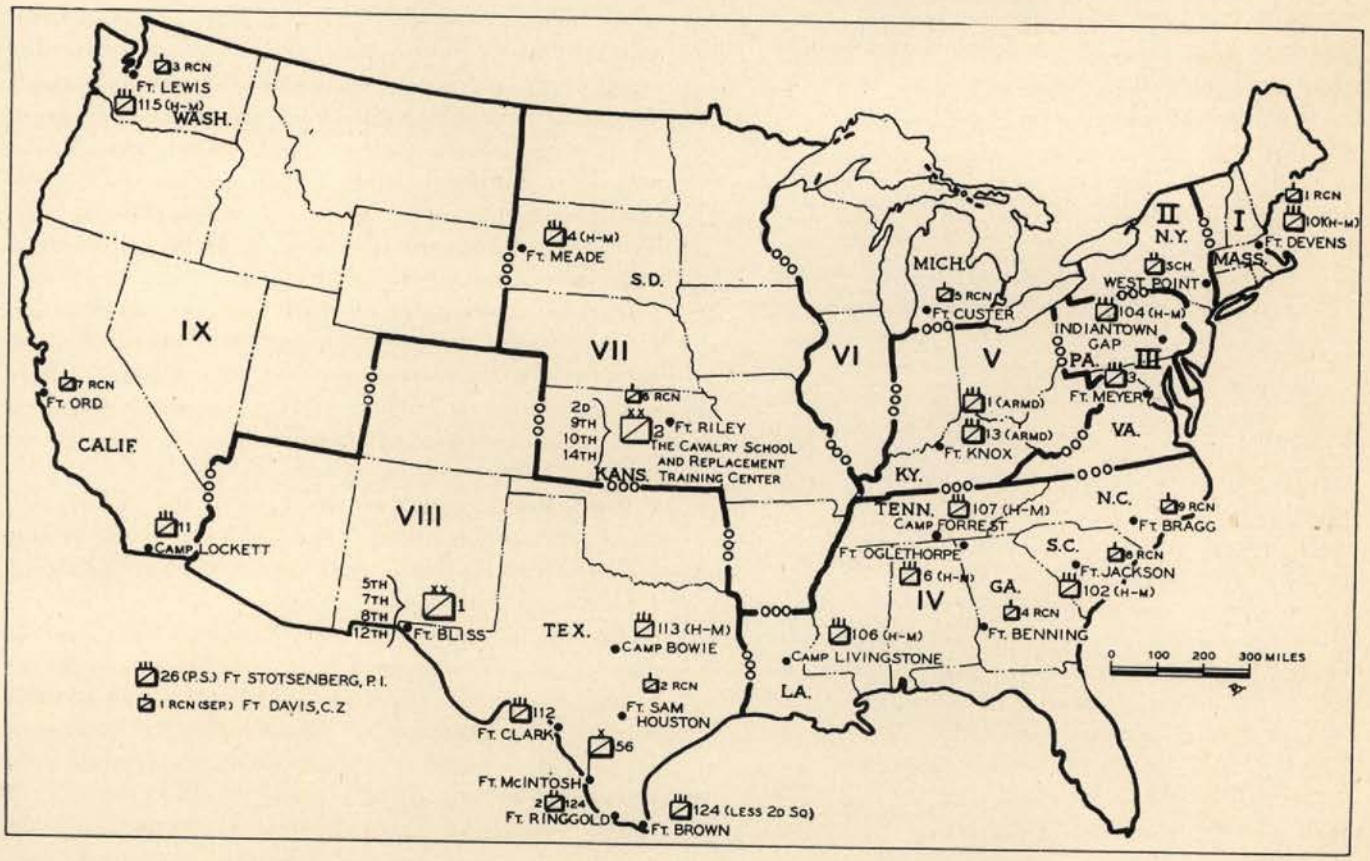
Most of our waking time we spend midst the crowd; the hum of the city; the shout of men; to hear, to see, to feel, to possess. The crowd is the creature of belief. Their ideas are real to them, just as the colorblind man's sensations of color may be as real as those of normal people. The crowd is not merely a group of people. It is the appearance within such a group of a special mental condition or crowd-mind. The sentiments and ideals of all persons in the gatherings take one and the same direction; conscious personality vanishes; a collective mind is formed. Crowds may be temporary or permanent in their existence. It all depends upon you and your actions.

Find the location where newspapers are given away. Some leader, if not there, will instinctively appear to determine your interest. Both the individual and society suffer from crowd behavior. Even civilization is menaced by behavior of crowds. The crowd is the creature of belief, so crowds should be broken into small units as quickly as possible.

It is conceivable that every crowd is against someone. A similar uncommon impulse motivates a crowd. A crowd is a device for indulging ourselves in a kind of temporary insanity by all going "nuts" together.

Thomas Carlisle was very sound when railing at the "paper age." Paper, as he wisely asks us to remember, is made of old rags, and is identified with the crowd. The desires of the crowd are to better themselves and that selfishness is multiplied by numbers and gains momentum as the crowd increases. When a flock of birds migrate from one place to another, the leader is never out in front. He has an advance guard who sets the pace, while he directs them from the center. Thus he makes the other birds feel that they are the leaders. This is typical of all "crowds."

CAVALRY HOME STATIONS



Cavalry Replacement Training Center

By Lieutenant William P. Jones, Jr., Cavalry

IT is very fitting that an article about the Cavalry Replacement Training Center should begin with a tribute to its Commanding General. Brigadier General Harry D. Chamberlin, who assumed command here on April 28, 1941, is one of the outstanding horsemen in the United States. He has been a member of the American Equestrian Team at three Olympic Games, and captain of the Army polo teams that won the twelve- and twenty-goal championships in 1926. He has been a student at the French Cavalry School at Saumur, at the Italian Cavalry School at Tor di Quinto, and later went as an observer to the English Cavalry School. During the War he served with the 81st Division.

In recent years, prior to his promotion and assignment to the Cavalry Replacement Training Center he commanded the 1st Squadron of the 14th Cavalry, served as G-3 and Chief of Staff of the Cavalry Division, and just released command of the Second Cavalry. He has, for years, been intensely interested in all training problems.

Shortly after General Chamberlin's arrival at the Cavalry Replacement Training Center, a reception, attended by all the officers of the Center and guests from Fort Riley, was held in his honor at the Service Club. Incidentally, this occasion also constituted the opening of the Service Club building.

* * *

By the time this account reaches the public eye, the Cavalry Replacement Training Center will have been training selective service men for over two months. During this time we have learned many things. We have made a few mistakes, to be sure, but on the whole we feel that our work is shaping up. The 5,277 selectees in our first contingent looked anything but soldiers when they arrived. Now, after two months, their chests are out and their chins are up. They appear soldierly, obey promptly, and are rapidly absorbing a good foundation of basic military knowledge. The proof of the pudding, however, will be the conduct of these men when they reach the regiments. If, on that fateful day, they find that they are on familiar ground, and if they are able to take up the normal work of a soldier and do it in a satisfactory manner, we at the Training Center will know that we have done a good job.

Selectees in this first group have done their work well. They have acquitted themselves like men. There has been no grumbling nor dissatisfaction with their lot.

Classification

It is the mission of the Classification Section to forward to the unit receiving the trainee a complete record of the nature of training he absorbs at the Replacement Center and the best possible indication for future assignment. This will be based on factual knowledge of his individual skills, both military and civilian.

Cavalry selectees in this first contingent to arrive at the Replacement Training Center have been sent to us from all parts of the nation. They represent 37 states. The bulk of them, however, come from the great centers of population in the East: New York, New Jersey, and Pennsylvania, with Ohio and the Great Lakes states running a close second.

The Classification Section has functioned from the beginning to place men in accordance with their qualifications and desires, so that they may receive the greatest possible benefit from training. Each man, as he arrived from the Reception Center, was interviewed briefly and then assigned to a horse or motors unit. This assignment was based on his past employment, his own desires and the needs of the service.

The initial assignment of the selectees was not in itself a classification process. It furnished the basis of classification by placing men in proper organizations so that their own enthusiasm and desire to make soldiers of themselves would not be frustrated by improper handling. The actual classification is a continuous process which is taking place day by day. Reports from the squadrons and departments indicating ability in various fields are the basis of proper classification.

Because of many factors over which they had no control, the Reception Centers were unable to fill requisitions of this Replacement Center with the prescribed percentages of occupational specialists. In a number of cases, the first steps of the classification processes, handled by the Reception Centers have been found faulty. In general, however, considering the speed with which they have found it necessary to work during induction, the qualification cards have been excellent. The Classification Officer at the Cavalry Replacement Training Center has found it necessary,

however, to spend some time correcting errors and adding additional information which the Reception Center interviewers had been unable to get. The Classification Section is now in the process of giving mechanical and clerical aptitude tests to those individuals who have experience or who show promise along these lines. Information from the troops and departments is also being entered on the qualification cards, and it is expected that military specializations can be coded on the cards during the latter half of May. As explained in previous articles, the mission of the Cavalry Replacement Training Center is the training of *basic cavalry soldiers*. Thus the military specialists required by units will, in general, have to be trained by the units receiving them.

Brigadier General Harry D. Chamberlin, commanding general, Cavalry Replacement Training Center

General Scheme of Operations

The Master Training Schedule, as devised by the Replacement Center's S-3 Section, is the father and mother of all training schedules. After many false starts and much labor it was completed and approved. It is a most thorough and detailed document, giving lesson assignment, type of instruction, areas in which the instruction is to be given, and the uniform and equipment necessary, for every organization in the command, every training hour of every day for 12 weeks. But with all this detail, there is enough open time to allow for the minor adjustments that may become necessary from time to time. During the first thirty minutes of the morning drill period from Monday to Friday, calisthenics are held. These exercises are attended by the officers and other members of the troop cadre. The remainder of the morning is divided into two periods of 2½ hours each. There is another 2½ hour period in the afternoon, giving three periods in the training day. The selectee personnel is therefore divided into three groups for training.

Let us take, for example, "A" Troop of the 2nd Training Squadron and follow it through a typical day's work. The day selected is Monday of the sixth week—April 28th.

After a half hour of calisthenics, the first period, from 7:00 a.m. to 9:30 a.m., is devoted to basic training. The first half hour calls for dismounted drill including combat formations. The next hour's assignment is in Map Reading and Conventional Signs and the last hour is given to offensive Combat Training. The second period, 9:30 until 11:50 belongs to the Department of Weapons. This instruction is not subdivided into two or more subjects, but is all devoted to mechanical instruction with the pistol. For the third period of this training day, Troop "A" of the Second goes to the stables for instruction by the Department of Horsemanship. For the first hour they have mounted drill. The second hour is given over to scouting and patrolling, mounted, and the remaining half hour is devoted to the care of animals and equipment. Similarly, Squadrons comprising the other two groups take up simultaneously, training in one or the other of the three types of instructions shown above but in different sequence. These periods are devoted to training in basic subjects or functional as to weapons, horse or motor. Three and one-half squadrons receive motor instruction while the other four and one-half squadrons receive horsemanship. All trainees receive the same basic and weapons courses. In all, the problems of schedule coördination are well cared for by the Master Schedule. Very little supplementary work along this line is required of the organization commanders.

Horsemanship Department

The Horsemanship Department has been functioning to make riders out of men who have had no previous experience with horses. In fact, many of them, selectees from the metropolitan areas, have seen horses only on the screen or attached to milk wagons.

The Cavalry Replacement Training Center has 1,600 horses. Half of these are "gentled remounts" and half are regimental horses that were ordered sent to the Cavalry Replacement Training Center on the basis of their suitability for recruit work. The Fort Robinson and Fort Reno Remount Depots sent cold blooded animals. These were in good flesh, gentled, and in general well suited for the work at hand. The horses received from the regiments are not nearly as suitable as the remounts.

The saddle equipment is unmodified McClellans,

model 1918. These saddles will eventually be modified, but until such time as this can be accomplished they are being used as they are.

Instruction is given by sergeant and corporal instructors under the supervision of Department officers. Each N.C.O. instructs a group of approximately twenty-five selectees. Department instructors are assisted by officers and N.C.O's of the training troop.

The stables are cavalry type stables and not converted motor sheds. They have center aisles and adjoining corrals. Two buildings comprise a stable unit capable of taking care of 104 horses. The unit has its stable gang consisting of a stable sergeant, an orderly, saddler, and teamster. It is supervised by an officer. The stables have dirt floors, single stalls, windows for each stall and ventilators in the roof.

Each stable unit has forage space, an adequate saddle room, and a saddler's shop.

Many essential supplies have been slow arriving. For a long time shortage in Post supplies did not allow the issue of boots and breeches. This shortage of boots, and the resultant sore legs, necessitated the reduction in training of all gaits to a walk during the latter part of the second week. This general reduction of gaits supplemented by voluntary individual increased gaits and accompanied mass trotting and galloping in equitation rings, seemed generally to restore the confidence of many of the timid riders. Now; that boots and breeches have been issued to the bulk of riders faster gaits have been resumed and instruction seems to be going more smoothly.

In the Horsemanship Department, an effort is being made to build up a vocabulary of expressions from the everyday vernacular of the instructor cadre. It has been found that these expressions frequently work where long winded explanations are lost effort. Such expressions as: *Steer a horse as you would a bicycle; To trot, you bounce once while the horse bounces twice; To step on the gas, squeeze with your legs; No hump backs; Finger your reins;* have been found exceedingly useful.

Classes are being held twice weekly for all troop officers and N.C.O's. This is being done in order to orient them and better qualify them to assist in horsemanship instruction.

During the instruction of trainees, two or three different points are emphasized daily, such as the proper adjustment of the bits, position of the lower leg, position of the hand, etc. Each day the instructors are handed a slip on which is written the things to be stressed the next day.

Plans are being made to procure for all platoon barracks buildings wooden horses with movable necks and heads. They will be equipped with saddles and bridles so that instruction in "seat and hands" can be given outside of normal training hours. This procedure has been found very beneficial for selectees undergoing recruit instruction in the 3d Cavalry Brigade.

Motors Department

"The objective of the Motors Department's twelve weeks course of training at the Cavalry Replacement Training Center is to produce an individual soldier with a thorough knowledge of first echelon maintenance of military vehicles, and the principles of correct, safe and careful operation of scout cars, military trucks and other military motor vehicles, a knowledge of convoy operations, field expedients, motor park and road rules, and with as great proficiency in the application of first echelon maintenance and the operation of the vehicles as the limited time, the limited number of instructors and the large number of vehicles permits."

The above quotation is from a memorandum put out by the Chief of Motors to the instructors of his department.

At first the Motors Department was severely handicapped by a shortage of vehicles. When training started there was only 40% of authorized truck transportation available and no motorcycles on hand. By the fifth week additional trucks had been received. One half of the prescribed allotment of motorcycles, 22, in all, arrived in time for such training to start on the seventh week of the course. Because of this shortage of vehicles, it was necessary to divide the trainees initially into two groups, one for trucks and one for scout cars, rather than the three groups originally prescribed, which would have included one group for motorcycle instruction. This resulted in a large number of trainees per vehicle than was originally intended in the scout car and truck sections.

Preliminary rifle marksmanship

At first, since the scout cars outnumbered the trucks two to one, some of the scout cars were placed in the truck section in order to equalize groups. One-half of the small motor vehicles, consisting of motor tricycles or Bantams have not yet been received.

The number of vehicles allotted to the Center will have to be increased to permit maximum efficiency in training.

At the present time there are approximately seven trainees and one instructor to a vehicle for each of the three periods of the day. These men go out for the day's training and rotate at the wheel so that every man drives some each day.

For the first few days of training the vehicles were jacked up on blocks and the instruction was given by "dry driving" methods. When he saw the set-up, one selectee was heard to remark with disgust, "Here I've spent the last five years tooling a ten-ton truck through the narrow streets of New York. I come out here in the wide open plains of Kansas and they teach me to drive a truck on blocks!" Now, after being initiated into the mysteries of cross country driving, he agrees that it was a sound idea.

The following letter was sent by the Chief of Motors to commanding officers of all nine horse-mechanized regiments.

"Dear Colonel,

"With the thought that it may be of interest to you, I am attaching two copies of the Training Program and Lesson Material which will be used initially by the Motors Department in the training of selectees at the Cavalry Replacement Training Center.

"Because of the large number of men to be trained, and the limited number of instructors and vehicles provided by the Tables of Organization, training is necessarily limited to a thorough knowledge of the principles of first echelon maintenance, and the safe and careful operation of scout cars, trucks, and motorcycles, the execution of simple drill formations, a knowledge of convoy operations, and motor park and road rules. As much time as possible is devoted to the application of maintenance and operation of the vehicles, but, as skill characteristic of the finished motor vehicle operator comes only with continual practice and experience, no attempt will be made to turn out finished operators.

"We plan, of course, to make changes as experience dictates their advisability, and we would appreciate receiving any suggestions or comments you may care to make concerning our objectives and procedures.

"If there is any further information you would like to have concerning our work, please do not hesitate to let me know.

"Very truly yours,

"Harold G. Holt,
Lt. Col. Cavalry."

Not as many motorcycle drivers will be trained as originally planned. The first directive was that all Motors trainees would be trained in the operation and maintenance of either the motorcycle or the motor tricycle (or Bantam). Now, however, due to the lack of equipment and the late arrival of the motorcycles only approximately 1/6 of the total will be trained as solo motorcycle operators.

Each group spends sixteen of the sixty lessons with each vehicle, including some time on vehicle drill. The remaining twenty-eight lessons will be spent in cross country driving, field expedients, marches and convoy operations, use of weapons, the demonstration of the use of weapons, semi-trailer operations and rail movements.

Weapons Department

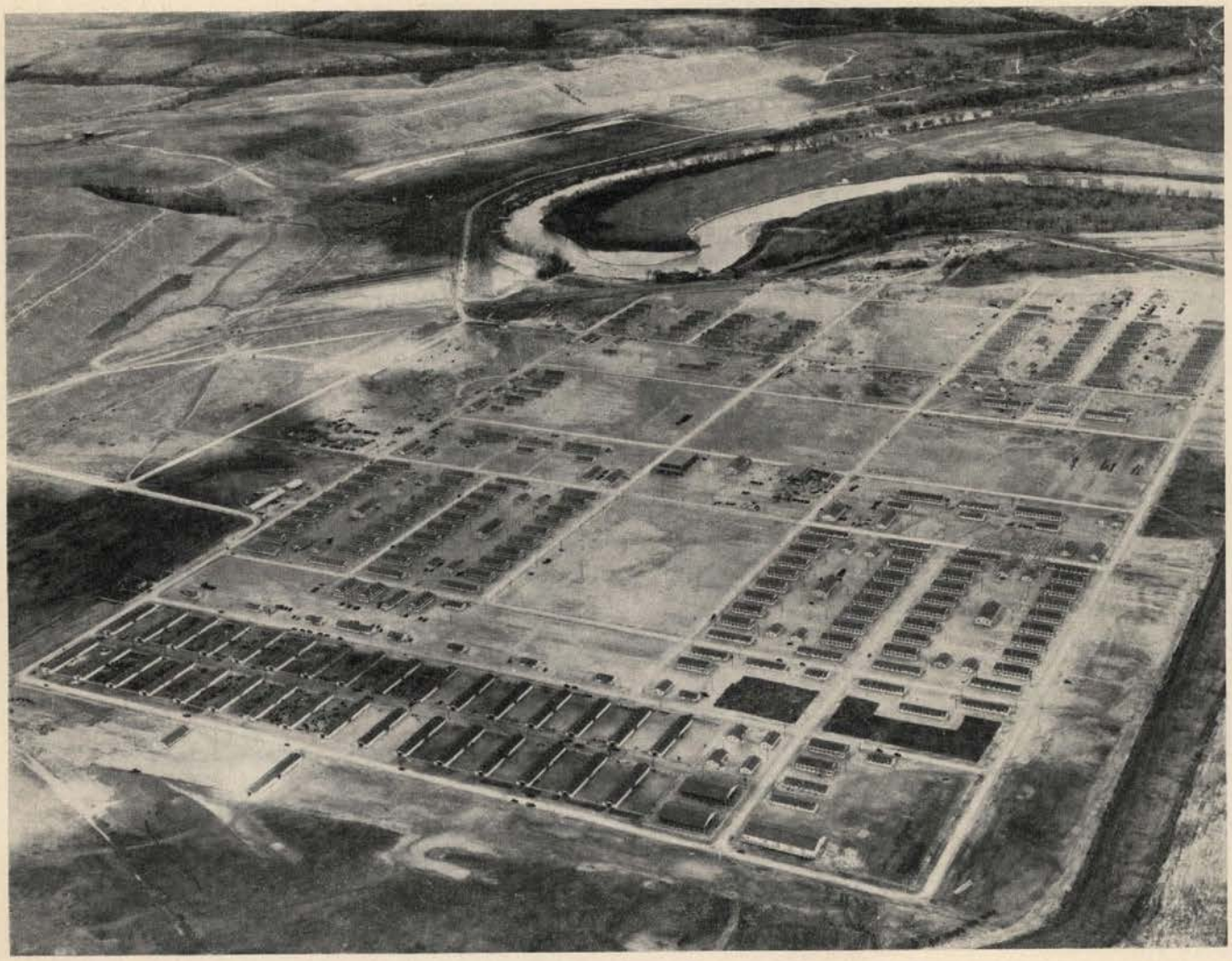
The results of the Weapons Department instruction more or less speak for themselves. All trainees have completed training and record firing with the M1 rifle and at this writing are on the range with the caliber .30 machine gun and the caliber .45 automatic pistol.

Trainees are picking up the manipulation and nomenclature of the various weapons with surprising rapidity. Of course not so much emphasis is being placed on technical nomenclature, but they are taught to strip the pieces and roughly understand the function of the various parts.

When on the rifle range, one selectee was afraid of his rifle. He didn't want to fire it. It seems he had heard lurid tales about the severe recoil of the old Springfield and he just could not believe that the new rifle didn't kick just as much. With infinite patience, the instructor kept the frightened selectee on dry runs with dummy ammunition, each simulated round being carefully squeezed off. Finally, after several clips of dummies, the instructor quietly slipped a live round into the clip. When the live round came up, the trainee squeezed it off as carefully as the rest and scored in the black. He was so delighted with the results and the fact that the weapon really didn't kick that he wanted to go on shooting long after his order had finished their firing for the day.

Qualification percentages with the rifle showed a steady increase with each succeeding week. Whether this was due to a difference in the quality of the selectees, or a difference in the quality of the instruction, is open to conjecture, but we believe it safe to assume the latter. That may be coupled with the fact that weather conditions improved steadily on every qualification day. The first was characterized by a twenty mile wind, varying between 3 and 6 o'clock, and intermittent rain. The second qualification day lacked the rain and on the third, conditions were ideal. It is unquestionable that with experience, the instructors performed their duties in a much more efficient manner.

The first group to fire for record qualified 50.9% with only 6 experts and 50 sharpshooters. The second



From the clouds

group increased the qualification to 61.8% having 12 experts and 65 sharpshooters. The third and final group qualified a grand total of 70.6% and produced 48 experts and 183 sharpshooters. Qualification courses are fired as scheduled regardless of weather conditions.

Too much credit can not be given to Master Sergeant Grider and the other enlisted members of the Weapons cadre for the difficulties they have overcome and the long hours of hard work they have put in cleaning and caring for all the weapons of the Training Center.

Basic Instruction

The basic instruction given to the trainee is the responsibility of the troop officers. It comprises all dismounted instruction from defense against chemical warfare to combat problems.

In addition to their administrative duties and the task of instructing in basic subjects for one period a day, officer and N.C.O. instructors from the training squadrons accompany their organizations to weapons training and horsemanship or motors. Here they assist generally the Department instructors and in order to prevent inactivity of trainees which results from lack of matèriel, the men who are awaiting their turns are given either functional or basic training until their time to drive or fire comes.

Trainees having previous military training, or who show the qualities of leadership, have been made acting squad leaders and have been issued special chevrons. These are black corporal's chevrons on a yellow disc. Additional hours are required of these acting corporals in the attendance of troop schools which normally precede each day's instruction. A vast majority of these men have had previous military training in either the R.O.T.C., the National Guard, or the C.M.T.C.

Recreation

The recreation program has been developed to a high degree in this camp. Intratroop and intrasquadron tournaments are now operating in volley-ball, boxing, soft-ball, and horseshoe pitching.

Hops are being held for the selectees in the various recreation halls. The civic organizations of the neighboring towns deserve a great deal of credit for the effort they are expending in getting girls here for these affairs. In addition to the dances, the recreation halls are being used twice weekly for "home talent" shows, and boxing and wrestling. We are very fortunate in

having a large number of professional entertainers among our selective service men. There are dancers, singers, musicians, and actors. These men take a great delight in being able to use their talents for the entertainment of their friends. The other selectees receive the shows with great enthusiasm. It is doubtful if any of the entertainers could ever have played to a more appreciative audience.

A typical program in one of the shows might consist of a piano solo by George Gregory who for several years has conducted his own band in New York, a tap dance routine by Harvy Dorsey a vaudeville actor, a short recital by Charles Mackie Swan, Philadelphia Civic Opera Company baritone, and a skit produced by a well known director.

Several well known professional boxers are with us in this contingent. Their talents are being utilized for the development of boxers among the other trainees. One of them, "Young Stuhley," particularly well known in the upper middle west has made it his private ambition to uncover a "white hope" while in the service. Mickey Paul is also known to all fight followers.

The recreation halls are each equipped with a piano, magazines, newspapers, ping-pong tables and dart boards.

The Service Club, constructed for the exclusive use of enlisted men, is of such magnificence that it puts to shame the Cavalry School Officers' Club building which was originally put up in 1917 or 1918 as a military camp recreational hall. The Service Club is well equipped with a cafeteria, a dance hall, a library and hostess's offices.

The Cavalry School Officers' Club has outfitted as a branch club one of the Officers' Mess buildings, complete with attractive furniture, special electrical fixtures, Venetian blinds, window drapes, pictures, bar, and barber shop. This has been provided for the convenience and pleasure of officers at the Center.

As many readers of this article will know, the distance between the center of Republican Flats and the Cavalry School Club is about four miles. This makes it very difficult for an officer, working as hard as the Replacement Training Center officers are forced to work in order to get the job done, to drop in at the club for a beer, a chat, or a bit of recreational exercise. The branch club here at the Flats has been a Godsend. It offers as recreational facilities volley ball, badminton, and ping pong. A soft ball diamond and two tennis courts are in the process of construction.

Band

A selectee band of 30 men was organized shortly after the arrival of the first group. Starting with a regular army director, Technical Sergeant Klineau of the 14th Cavalry, and three other musicians, qualified selectees were soon uncovered and put to work. They played for retreat after they had practiced together for exactly one hour. The results were unbelievable. They couldn't march, but the march music they produced left little to be desired. After a few weeks of intensive work they now can be favorably compared with any army band. This is due in part to the excellence of the training they have received, and in part to the fact that a large proportion of them were professional musicians before coming to the service. The band will be augmented by field music consisting of thirty-two bugles and ten drums, when the drums, now on purchase order, arrive. The Cavalry Replacement Training Center orchestra, which furnishes music for trainee hops and other functions, is hard to beat. It, too, is filled with men who played professionally in dance bands before coming to the service. The improvement in marching of the command was immediately noticeable with the organization of the band, especially so since the band has turned out to be such a fine one.

In general, after eight weeks of training selectees of this first contingent to arrive at the first Cavalry Replacement Training Center, we believe we may say that our work bids fair to be highly successful. Training in all departments is progressing satisfactorily.

With General Chamberlin in command of the organization, it seems that through his energy and guidance, we will achieve that perfection in training toward which we have striven. There is no doubt in our minds here at Riley, that we will be sending out men in June, who will, by their conduct in the Regiments, reflect a credit on the system that has trained them.

★ ★ ★

It is very difficult for a nation to create an army when it has not already a body of officers and noncommissioned officers to serve as a nucleus, and a system of military organization.—NAPOLEON, Military Maxims.

Notes From the Chief of Cavalry

Change in Personnel, Office Chief of Cavalry

The following changes in personnel within the Office of the Chief of Cavalry have occurred recently:

Brigadier General Karl S. Bradford has been relieved of the duties of Executive Officer to assume command of the 2d Cavalry Brigade, Fort Bliss, Texas.

Colonel Howell M. Estes has assumed the duties of Executive Officer.

Lt. Colonel Charles S. Kilburn has been relieved of duty in the Operations Section in order to perform duty with the General Staff in the War Department.

Lt. Colonel Vennard Wilson, formerly Chief of the Weapons Department, the Cavalry School, has replaced Colonel Kilburn in the Operations and Training Section.

* * *

The following projects are at present undergoing study or test by the Cavalry Board:

Strip Films for R.O.T.C.
Changes in Field Manuals and other publications.
Antitank gun (in connection with the "bantam" car).
Gun elevator for Antiaircraft machine gun fire.
Submachine gun (new type).
Bullet-seal inner tubes.
Airplanes for liaison.
Boots, rubber, over-the-shoe.
Shelter tents.
Tool-set, horseshoers.
Pyramidal tents.

* * *

In the development of the 81-mm. mortar packs, cooperation was secured from the Quartermaster Corps, and Colonel A. E. Phillips, for whom the pack saddle was named, attended the final conference with Ordnance representatives at Rock Island Arsenal, together with Lt. Col. Forsyth, as a representative of the Chief of Cavalry. It is expected that the pack hangers will soon be in the hands of the using units.

* * *

Short-range Liaison Airplanes

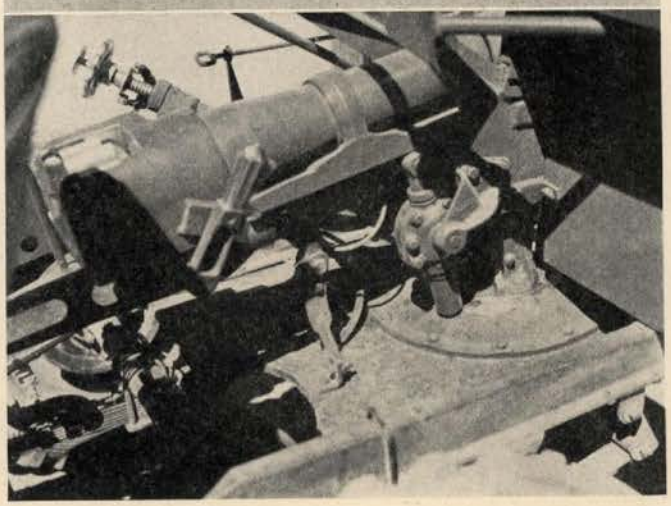
Field tests of 3 types of short-range liaison airplanes, the Ryan, Stinson, and Bellanca started on May 10th, 1941. Tests will cover: the ability of these planes to land and take off in restricted areas, function as command planes, ability to locate and identify ground troops, perform messenger duty, and required mechanical maintenance in the field.

When tests of these planes by the Cavalry Board are completed, the planes will depart for Fort Bliss for a similar test by the 1st Cavalry Division.

Experiment

The 1st Cavalry Division has successfully mounted a 37-mm. AT gun on a "bantam" chassis, thus producing a light, self-propelled mount. An interesting feature of this experiment is the fact that a section of a light truck rear end was cut and used as a pedestal mount for the gun. Accuracy, mobility, and rapidity of fire tests were highly satisfactory.

It is the opinion of the Chief of Cavalry, as a result of reports from testing agencies, that the *four-wheel steer* "bantam" should be standardized for Cavalry use.



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Please address all communications for The United States Cavalry Association and The Cavalry Journal to 1624 H Street, N.W., Washington, D. C.

Cavalry Demonstrations for GHQ

*Vicinity of Fort Myer, Virginia, April 3d**

IN order to familiarize personnel of GHQ with typical platoon combat exercises of cavalry units a series of demonstrations by platoons formed from elements of the 3d Cavalry was arranged. Suitable ground was found between Ft. Myer and Alexandria. Locations for various type exercises were designated, then troops were assigned to various exercises and worked them up in detail. These exercises were not tactical as the situations were known well in advance. They were in effect *battle drills* and of considerable training value in their preparation. Present for these demonstrations were Major General L. J. McNair, Chief of Staff, GHQ, and his staff; Major General John K. Herr, Chief of Cavalry; Brigadier General John N. Greeley, Commanding General, Washington Provisional Brigade; and Colonel W. W. Gordon, Commanding Officer, 3d Cavalry. Following are extracts from the report of these demonstrations with chronological summary showing times and distances:

First Phase: Platoon in defense and delay. Platoon organized in little depth should have automatic weapons to include Caliber .50 Machine Gun. Mechanization should be ambushed, advancing enemy columns should be delayed, forced to deploy and maneuver before the defensive platoon withdraws. Platoon reserve should be strong and mobile to cover withdrawal and for counterattack. Ammunition supply is vital. The platoon went into pack and moved one-half mile to the troop bivouac in seven minutes.

Second Phase: Troop in covered bivouac should be protected by all-around automatic ground and air defense.

Third Phase: Scout car action emphasizes the following points: Scout cars must have a covering force. They must advance by bounds and avoid ambush. For attack of a road block smoke or H.E. should be laid on the road block by attached mortars. Individual cars should make a wide maneuver and machine guns be maneuvered on the ground forming a base of fire. Platoon should be able to reduce a lightly defended road block promptly.

Fourth Phase: Light machine gun platoon. This platoon furnishes the automatic fire power of the rifle troop. It moves into and out of position at speed, guns going from pack and into action in well under a minute. Machine gun squads may be attached to rifle platoons or the platoon fought as a unit. Led animals are particularly vulnerable.

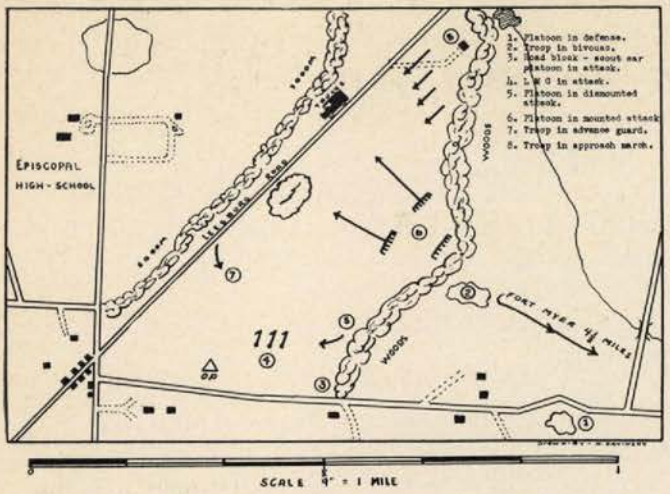
Fifth Phase: Dismounted attack. Platoon attacks on a broad front with little depth, covered by machine gun fire. Again led animals are the chief worry of the platoon commander.

Sixth Phase: Platoon in the mounted attack. The mission of attack is to close with the enemy and drive him from his position. This attack had two objectives: 1st—an infantry squad in position supported by automatic weapons; 2d—motor transportation for this force. Automatic fire-power firing at right angles to the direction of mounted attack forces the defender to keep under cover. The first squad moved directly to the first objective covering 450 yards in 35 seconds, dismounting and going into action. Second squad moved against the secondary objective. The platoon commander followed with the third squad and light machine gun squad to attack either or both of the objectives. While the platoon reorganizes, machine guns are put into position to repel enemy counted attack. Frederick the Great stated that speed in the attack saved casualties.

Seventh Phase: Advance guard formation where the main force moves on an axis of advance. Cal. .50 ma-

*Courtesy, Lieutenant Colonel C. H. Gerhardt, GSC, GHQ.

Left to right: Major General J. K. Herr, Chief of Cavalry; Major General Lesley J. McNair, Chief of Staff GHQ; Colonel W. W. Gordon, Commanding Third Cavalry; Lieutenant Colonel C. H. Gerhardt, G.S.C., GHQ



chine gun should be well to the front. Commander should be up with the main portion of his advance guard. In case of mechanized attack, riflemen should allow this attack to go up against antitank weapons closing in behind tanks and scout cars.

Eighth Phase: Advance of the troops using a covering force. This covering force always a tactical unit, is advanced by bounds on the direct order of the commander. Bounds should be long. The main body follows under the command of the executive. Movement of the main body should be protected by machine guns in position. Cavalry in approach formations should be able to flow over any type terrain by the use of proper formations and under competent leadership.

Chronological Summary Showing Times and Distances

1st Phase

Introductory Remarks, 1st Stop	10:00	A.M.
Withdrawal of Delaying Platoon ordered by Platoon CO (1st Phase)	10:11	A.M.
Platoon reached troop bivouac, Distance ½ mile (1st Phase)	10:18	A.M.

2nd Phase

Observers reached troop bivouac (2nd Phase)	10:15	A.M.
Observers left troop bivouac (2nd Phase)	10:24	A.M.

3rd Phase

Observers arrived OP (3rd Phase)	10:31	A.M.
Message sent to Plat. Car to start exercise (3rd Phase)	10:34	A.M.
Leading Scout Car moved off road (3rd Phase)	10:38	A.M.
Dismounted MG fire from Scout Car MG opened fire (3rd Phase)	10:40	A.M.
Mortar attached to Scout Car Platoon opened fire (3rd Phase)	10:42	A.M.

4th Phase

Signal sent to Plat. CO to start exercise (4th Phase)	10:44½	A.M.
Platoon came into view (4th Phase)	10:45	A.M.
Time to open fire after "Action right" was given (4th Phase)	39 Seconds	
Time to move off in pack after "Out of Action" was given	1 Minute 50 Seconds	

5th Phase

Signal to open fire given at and fire opened (5th Phase) Dismounted attack	10:54	A.M.
Assembly ordered at (3 squads on a front of 250 yards)	10:59	A.M.

6th Phase

Signal to move out to attack (Mounted attack)	11:03	A.M.
Advance to objective required	35 seconds	
Reserve moved forward	11:05	A.M.
LMG's went into action on objective (Distance 450 yards)	11:06½	A.M.

7th Phase

Signal to start march	11:11	A.M.
Point appeared	11:13	A.M.
Point started across open demonstration area	11:18	A.M.
Main body across open demonstration area Distance 1,200 yards.	11:21	A.M.

8th Phase

Covering Force started across open demonstration area	11:32	A.M.
Covering Force reached observers' position	11:35	A.M.
Troop CO started across same area	11:35	A.M.
Troop CO reached observers' position	11:37	A.M.
Main body started across same area	11:37	A.M.
Head of main body reached observers' position Distance 1,200 yards.	11:42	A.M.

Distance covered in the combat phases totaled 5 miles in 1 hour and 42 minutes elapsed time. Total distance including administrative move to and from Fort Myer 14 miles.

To conclude the critique General McNair commented on the exercises as follows:

> "I want to express the appreciation of GHQ for what you have done for us today. Fort Myer, in its typical fashion, has put on another splendid show. Instead of the usual horsemanship display we have been shown a real battlefield demonstration and it certainly was what we wanted to see. I am delighted to see so many young officers do so well and I suspect that the older NCO's have had a very strong hand in this performance. Congratulations and thanks deeply."

His comments with reference to the report submitted on this exercise were:

> "Your report re Myer Demonstrations is very interesting. Visibly and by actual times, the speed and smoothness was impressive especially for comparatively new troops."

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General Hawkins' Notes

Antitank Corps

IT is time, and after time, to fix a system of tactics on which we can depend to meet the new conditions we may have to face. These tactics must depend on the kind of armament we may get in a comparatively short time. It is necessary to observe carefully the tactics of the warring nations but not to copy them slavishly. Their tactics are based upon their armament. The tactics of Germany are based upon superiority over other nations in air force, in tanks, and in numerical strength of her other arms. For us, in the absence of this superiority, for a long time to come, it would be foolish to try to imitate the Germans. We must have a tactics of our own. They must be based on the armament we can get quickly. Airplanes and tanks in great numbers cannot be produced quickly. But, from a comparative standpoint, guns can be. Once they are produced in great numbers they can be stored away when not needed. Although they will need repairs from time to time, they do not wear out or become obsolete as quickly as airplanes and tanks. I refer especially to antitank guns.

It is not likely that in a short time, the United States will catch up with European nations in the matter of tanks and airplanes. Nor is it likely that if we were given time to catch up we would continue to maintain in peace time such great numbers of these machines. It is possible to produce enough antitank guns, however, of the proper caliber to permit us to carry out offensive operations with the rest of our forces. We must have air force, armored force, infantry, artillery, cavalry, engineers, etc. If we cannot stop the enemy armored forces we cannot use these various kinds of troops. They are all needed, but they will do us no good if the enemy armored forces are not stopped. Our own armored forces will certainly be inadequate numerically for a very long time—perhaps always.

Let us examine the present war between what we call the Axis Powers and the Allies.

Once again, Germany has given an example of a large, well equipped, well trained army in an offensive against smaller armies less well equipped and, therefore, forced to take a defensive attitude. Germany is believed to have some thirty thousand tanks.

When, in these days of movement and open warfare, an army is forced to go on the defensive, it must be an active defense and not a passive defense. In order to conduct an active defense the army must repulse the assaults of the enemy and then counterattack.

The Germans use three, four, or five heavy columns distributed over a wide front according to the nature of their terrain. To repulse them, each of these columns must be repulsed, because if one of them succeeds in breaking through it moves swiftly with armored mechanized troops to gain the flanks and rear of those elements of the defensive army which may be holding. In that case, only powerful reserves thrown in time against the enemy may check the break-through.

On account of the great numerical superiority of the Germans over the Allies in every theater of war so far, the Allies have had in each case to assume the defensive rôle, hoping to make an active defense and finally to take the initiative and convert the campaign into an offensive of their own.

To have any hope of success, the Allies must have enough troops of various kinds to meet the several German attacking columns and repulse them despite their superiority in numbers and attack equipment. In addition, the Allies must be strong enough to hold out a powerful general reserve, as well as the local reserves of those forces opposing themselves to each of the German columns. Without this general reserve, any breakthrough, by any one of the German columns, wrecks the whole defensive line as just explained.

Each of these separated German columns has several Panzer divisions as well as several Army Corps of three or four infantry divisions each; therefore, each of the Allied columns whose job it is to stop a German column must have the means to repulse and then to counterattack. This repulse cannot be effected by infantry and field artillery alone. It is known that the Germans will use dive bombers and mechanized divisions whenever the resistance is stubborn. Even in narrow valleys or mountain passes, the German tanks cannot be stopped by the fire of infantry rifles and machine guns, nor by field artillery guns placed in rear in the usual way. Neither could an armored force in each of these Allied columns repulse the German Panzer divisions, because, in each case, the Germans have superior numbers of these armored troops. To send inferior numbers of Allied armored forces is merely to destroy the Allied tanks to obtain a short delay.

What the Allies need is to have mobile brigades of antitank guns trained to deploy on the front line and in successive lines. These troops should be highly trained and imbued with the idea of sticking to their positions to the end. The closer an enemy comes to these guns the more deadly the guns become. They can shoot more accurately than the enemy's guns which are in moving

tanks, They can, if time permits, be dug into emplacements and camouflaged. They can be supported by the field artillery in rear. They can be supported by aviation so that their enemy's dive bombers may not have unopposed opportunities. Thus, these guns being properly deployed, the dive bombers of their opponents will not be able to destroy them. Dive bombers in France did not destroy any deployed troops who had the determination to stand and fight. These mobile antitank units should be able to stop the enemy; moreover, the guns must not only be mobile and powerful enough, but also they must be protected from machine gun fire by shields or armor of some sort. Otherwise, their crews will be too much exposed to the machine gun fire from enemy tanks and hostile supporting troops. Then, and not until then, our armored forces can execute a counterattack against the crippled tanks of the enemy. This counterattack can be supported by infantry divisions and all the rest of the army.

Of course, the enemy will bring up his infantry to meet the counterattack, but the tendency of armored forces to push ahead so far in front of marching infantry might enable the defenders to counterattack very successfully before hostile support could arrive.

The Germans got the jump on the Allies before the war started in the matter of airplanes and tanks. No one knows if or when the Allies may catch up. Certainly not in the immediate future. The tactics of the Allies should be adapted to the conditions.

It is passing strange that after the Polish Campaign the Allies did not see clearly that the German tanks could not be stopped by ordinary means or by inferior numbers of mechanized forces. It is still stranger that after the conquest of France the importance of great numbers of mobile antitank guns was not appreciated. The attempt was made to catch up to the German mechanization by making British mechanization. But that has not been accomplished, nor is it likely to be.

If the Serbian Army had been equipped with sufficient numbers of antitank guns they could have made good use of their mountainous country. The Greeks needed antitank guns too. It seems that they destroyed a number of German tanks by fire from their pill boxes in defensive positions, but the Germans managed to get around such positions. The general reserve, too, in the Greek army, as in every army, needed to have many strong units of antitank guns. The British, also, need them in large numbers.

The repulse must come before the counterattack. Antitank units can effect the repulse of the hostile tanks. Armored forces, and other forces, can then make the counterattack.

To fight land forces requires proper means and skill in the use of those means. Means without skill is of no avail. Skill without means is pathetic. The Germans have had both. The Allies have been short of both. Unity of command seems to be impossible in allied armies. This lack of one central command was nearly fatal to the Allies in France from 1914 to 1918. Only in 1918 was it established.

But now, in the situation of the present date, the Allies should understand that special means must be provided and skillfully used to hold off disaster until the Germans can be met on equal terms. It is all very well to hasten the production of tanks and airplanes, but in the meantime antitank guns must be produced and organized to prevent the German Panzer divisions from running wild without effective opposition.

There is no doubt about it, we must organize and train our army in the proper tactics for an active defense as well as for an all-out offensive. An antitank corps must be developed and trained in tactical exercises. We must smash the hostile armored forces and then take the offensive with everything we have. At the beginning, we shall always be inferior in strength to any aggressor nation that may attack us. We must be prepared, therefore, for an active defense first and a general offensive afterwards. Even if we were able to assume a general offensive at the start of our military operations, the enemy would attempt to smash us with armored divisions. We must not only have means of attack but also means of defense in certain areas. The machine gun attained its prestige as a weapon because of its power in defense. This made it possible to hold in one spot while we attack in another, and to repulse counterattacks made by the enemy to halt our attack. In the same way, we must develop antitank units of high *esprit de corps* to do the same kind of work against enemy armored forces as the machine gun has done against other kinds of troops.

The conditions that are reported at this date (May 7th) in Greece, Yugoslavia and North Africa, support these views perfectly. With almost two years to produce the necessary equipment the allied nations at war against the Axis have failed to understand them and are suffering in consequence.

The recent accounts of massed German infantry with almost solid ranks hurling themselves against Greek and British troops in position, without attempting to use cover and thus sacrificing thousands of men recklessly, show that the Germans are not perfect in their tactical conceptions and may suffer some serious repercussions in the future. The idea of sending solid masses of men to crush the enemy by sheer weight and numbers has been tried before. It is sometimes successful locally, but with such frightful losses that it cannot be kept up for long even by the most ruthless commanders with great hordes of men at their disposal.

Our factories have all sorts of orders for military equipment. Great importance should be given to antitank guns and ammunition for them. Our factories should be turning them out by the thousands. We boast of inventive skill and resource in this country. We should adopt, without delay, the type of antitank gun we want, a mobile mount, a shield against caliber .30 machine gun bullets, and turn them out with

greater haste than any other one weapon the army needs. The caliber .50 machine gun, which has really a bore of only about 12-mm., is inadequate against the medium and heavy tanks now being used.

After we get the guns the units must be organized and trained. The officers must learn how to maneuver such large units of guns and keep them supplied with ammunition.

Our government must be made to understand that we want these antitank units only to smash enemy tanks. They would be ineffective against enemy infantry and other arms, so, we must have our own infantry and other arms. First of all, however, we must smash the enemy tanks. Then we can use the other arms.

Some men say that the only answer to an enemy tank is a bigger or better tank. That means that we must have more tanks than the enemy has. This is an advantage enjoyed so far in this war only by the Germans. If we get into war we cannot count on having more tanks on the spot than our enemy has. We must have more insurance than that. The British tank units have fought splendidly and smashed a lot of German tanks, but it was a desperate measure and served only to delay the Germans. The delay was useful, but the British were not strong enough, either in tanks or other arms, to use it to turn an offensive against the Germans or to resist effectively the subsequent attacks. The Germans had many more tanks; the British had very few left. Large units of good antitank guns in the British and Greek armies would have saved the British much sacrifice in tanks and preserved them for counterattacks.

Of course, this is not to say that the British and Greeks would have won. The Germans had huge forces backing up the Panzer divisions, and they had great superiority in the air. The campaign might have been prolonged, however—especially had the Serbs been armed with antitank guns, also—until other influences had become important factors. Defensive warfare, particularly the active defense, sometimes brings wonderful results in the end.

Although antiaircraft guns have justified their production and are indispensable, they alone have by no means given the measure of protection that is desired against attacks from the air. They assist the pursuit airships which probably have downed more hostile airplanes than the guns have. Even the combination of these guns and pursuit ships cannot give adequate protection to cities from bombing, especially at night. In daytime they do fairly well. Antitank guns promise to do better against hostile tanks, but they are needed in great numbers. This must be emphasized.

Aided by great superiority in the air, the Panzer divisions, practically alone, brought about the conquest of France; yet their successes would have proved fruitless without the huge forces of the other and older arms which followed them. This statement is repeated because it must not be forgotten.

We must not only build tanks as fast as we can. We must have a mobile force to stop tanks and permit the full use of our other arms.

No matter what our progress may be in arming ourselves with airplanes and tanks, a powerful antitank corps would give us a great advantage over other armies. This could be peculiar to America. Let us beat the enemy in the American way.

* * *

In the May, 1941, issues of *The Infantry* and *Field Artillery Journals* appear articles on antitank defense by Major A. C. Wedemeyer, Infantry, U. S. Army. These are excellent articles, worthy of study. Major Wedemeyer gives some detailed figures about antitank guns in use in various armies in the present war. He suggests the following distribution of antitank means and weapons.

In each infantry regiment:
- 16 calibre .50 machine guns.
- 12 37-mm. AT guns (a company).
- 1000 light AT mines.

In each infantry division:
- 36 37-mm. AT guns (a battalion).
- 1000 heavy AT mines (in engineer battalions).

In each army corps:
- 36 37-mm. AT guns.
- 36 4″ dual purpose guns for AA and AT defense (a regiment).

In GHQ:
- 3600 37-mm. AT-AA guns (100 battalions).
- 3600 4″ AA-AT guns (100 battalions).
- 5000 medium tanks (tank chasers) with a 75-mm. gun in each.
- Pursuit aviation and light bombing units from the GHQ air force.

Thus, Major Wedemeyer agrees with me that we must have literally thousands of antitank weapons. He also agrees that our main armored force must not be used in antitank defense, but in counterattack or offensive missions of its own, of course, backed up by other forces. In other words, our antitank defense must be sufficient unto itself and not have to call upon our armored force to repulse the enemy.

To learn to use those means of antitank defense, we must have tactical exercises of divisions and corps arranged for that very purpose. It would not be right to expect an infantry division, with its some 72 antitank 37-mm. guns and some 50 calibre .50 guns, to stand up to a very heavy armored force attack without great reinforcements of antitank weapons from corps and army. This reinforcement must be practical in tactical exercises. While the antitank units of the division are being put into action the other units of the division should be withdrawn a certain distance to permit antitank units a freedom of action, to permit corps antitank units to come up and deploy, if necessary, and to avoid having rifle and machine gun battalions run over and

demoralized by a few of the enemy tanks that might have broken through and might be running wild before they can be dealt with by the antitank units. How this is to be done, including the disposition of the divisional field artillery, etc., can be determined only by actual practice in division and corps exercises. A few, at least, of the rifle and machine gun companies will have to be left in close support of the antitank units to deal with enemy detachments of infantry that accompany the enemy tank units and to prevent the removal of obstacles and mines that may have been laid to delay the enemy attack.

Such exercises will tell the commanders and their staffs more than can possibly be written from a purely theoretical standpoint. They are, therefore, vital to the training of our army in addition to other exercises of a more offensive nature. No division, corps, or army commander should be satisfied with his own knowledge or competence until he has become experienced in such exercises, and those exercises should give opportunities to develop the initiative and resource of the commanders and leaders of small units. The basic training of the individual soldier is only the elementary beginning in the training of an army.

When we consider the equipment and training necessary for just this one item in the armament and training of only one field army consisting of several army corps, the immensity of our task in production, organization and training for the whole army is a little staggering. This one item of antitank defense, however, is absolutely necessary if we are to take the field against modern armies.

Major Wedemeyer's figures are after all only suggestions. There are many questions he does not touch. For example, he does not specify whether the GHQ he speaks of is the great general headquarters or the GHQ of a single field army; nor does he discuss the organization of the many battalions he wants. There is no doubt in my mind that we must have an antitank corps of large proportions. The antitank units assigned to regiments may be organically part of the branch of the service of the regiment. They are small. But the antitank battalions behind the infantry or cavalry regiments should belong to the antitank corps. Perhaps, in the cavalry, the antitank squadrons in the brigade should be composed of cavalrymen for reasons that do not apply so much to the antitank battalions in an infantry division.

Whatever the caliber and kind of gun to be made in such great numbers, and whatever the organization adopted, we must not haggle. It must be decided now. There is no time to lose.

TWO NEW GERMAN WEAPONS (From "Signal," February, 1941)*

FOUR-BARREL LIGHT AA GUN

This 20-mm. automatic weapon is not a part of the regular antiaircraft organization, which, in the German Army, pertains to the Air Force. It is assigned to infantry, artillery, or such other ground forces as may have need of protection against low-flying aircraft.

SELF-PROPELLED AA-AT GUN

Smaller than the multiple-barreled mount, this weapon is used against either planes or tanks. It employs an automatic 20-mm. cannon mounted on a tracklaying vehicle having a very low silhouette. The Germans claim that units employing these two weapons have brought down 250 enemy planes since the beginning of the war.

*Plates courtesy *Field Artillery Journal*.

Cavalry Bridge Requirements and the Cable Bridge

By Lieutenant Colonel W. B. Bradford, Cavalry*

MODERN Cavalry is part horse and part mechanized and motorized. The tasks assigned it will frequently require its operation under conditions of terrain such that the horse elements with their machine guns, special weapons, and ammunition in pack will advance and operate beyond the immediate support of its numerous mechanized and motorized fighting, supply, and maintenance elements. *At the earliest possible moment,* a few antitank, reconnaissance, command, and ammunition vehicles must be gotten forward to give essential initial support. *Eventually* all mechanized and motorized transport must be advanced.

Tables of Organization for the Cavalry Division show 7,707 horses and mules, and 1,486 mechanized and motorized vehicles. The animals listed are classified as follows:

Horses, draft, 504 (500 of these are in the Field Artillery).

Horses, pack, 767 (To carry the machine guns, antitank guns, radio equipment, ammunition, and other supplies immediately required).

Horses, riding, 6,141 (To mount the riflemen of the Division).

Mules, pack and riding, 294 (In the Quartermaster Squadron for transporting ammunition, food or other supplies as needed).

In the 1,486 motor vehicles listed are included 148 scout cars, 13 light tanks, and 373 motorcycles and tricycles. These vehicles are used for reconnaissance, antitank defense, messenger duty, and combat. The remaining motor vehicles of the Division are essentially supply, maintenance, and command vehicles.

In the Cavalry Regiment, Horse, there are 1,520 horses, riding and pack; 30 motorcycles and tricycles, and 37 scout cars and other vehicles employed essentially for reconnaissance, combat, maintenance, and supply. With the exception of a few weapons carried on motor units, all armament of the regiment, including rifles, machine guns, antitank guns, and mortars, is carried on horseback. The horse elements of the regiment are thus self-sufficient, and for an appreciable length of time can operate independently of their motors. For this regiment, terrain consequently presents few obstacles, as man and horse can cross rough country, swim rivers, negotiate arroyos and mountains, and pass through difficult areas inaccessible to armored troops and motor transport except with great difficulty.

The Cavalry Regiment, Horse and Mechanized, having one squadron of horse and one mechanized, has characteristics, potentialities, and problems closely paralleling those of the horse elements and the mechanized and motorized elements of the Cavalry Division.

According to present Tables of Organization, the Engineer Squadron of the Cavalry Division has ten assault boats but no bridging material. Such material has purposely been omitted from basic tables of allowances as its great bulk and the road space involved are such as to detract from mobility. Where bridging material is required, Cavalry has been expected to depend upon Corps or Army.

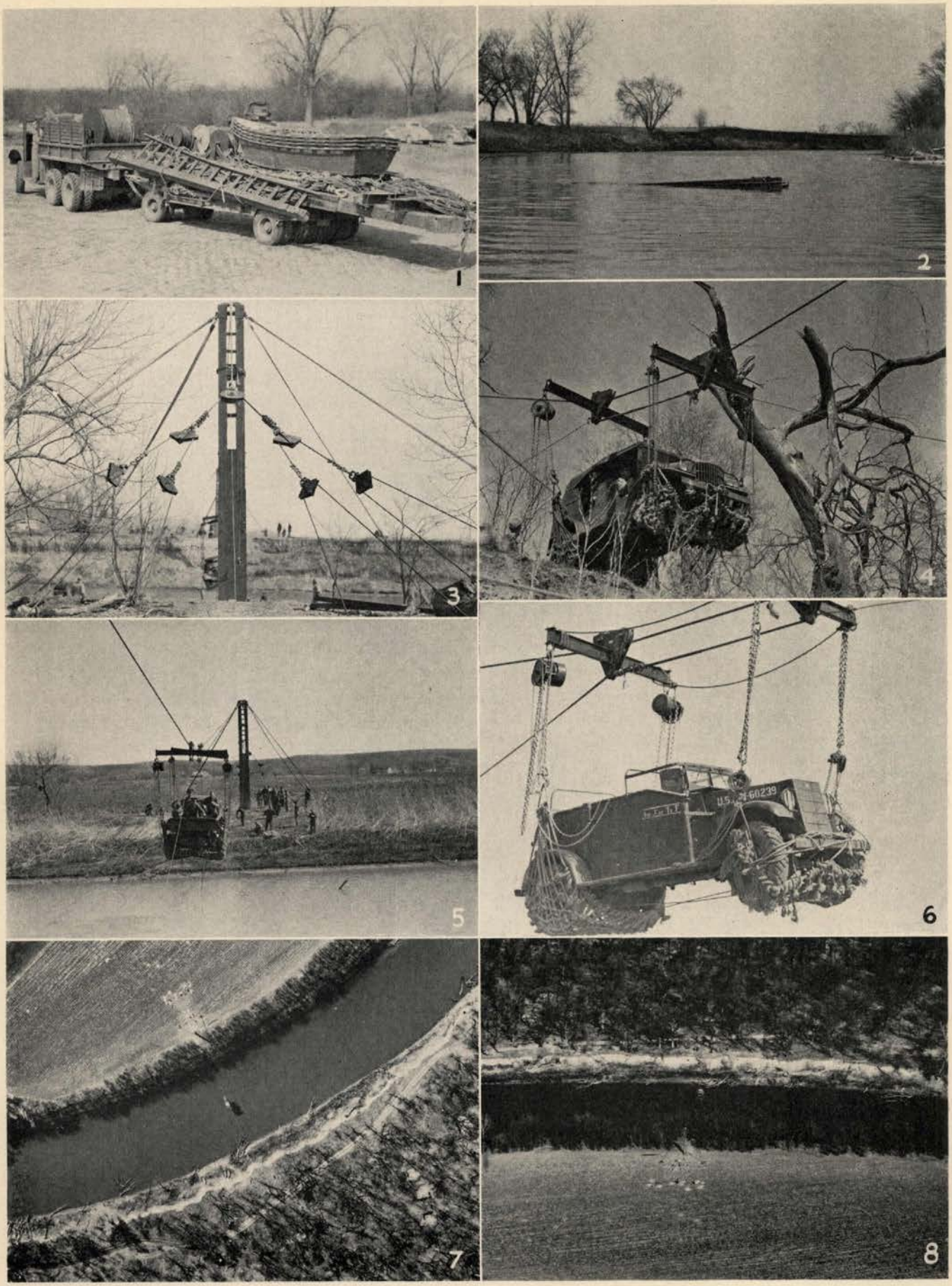
The missions assigned Cavalry often require it to operate at a distance from the Corps and Armies with which associated. The existence today of numerous armored forces will probably result in greater future emphasis on its employment in country not suited to the movements of armored vehicles, and likewise unsuited to the movements of cumbersome bridge trains.

Under such conditions, Cavalry may be expected to advance its horse troops across obstacles that impede the progress of its mechanized and motorized elements. These horse troops will establish bridgeheads and with their own means will be able to maintain themselves for a short time. At the earliest possible moment, however, they must be given some *initial support* by a few of their mechanized reconnaissance and heavier antitank means. The ammunition supplies in combat vehicles must be brought up. *At this phase of operations,* requirements will be limited to a very few essential vehicles, but this initial group, though small, will be desperately needed. Furthermore, as operations will often be on a rather broad front, advance facilities for moving up essential vehicles must be provided for *each of the several brigade or regimental combat teams involved.*

Eventually all of the equipment of the Division must be brought up.

If suitable ponton bridges can always be provided and placed in position to meet both the *initial* and *eventual* needs of Cavalry, so much the better. But of course this is impossible. These trains will seldom be available in the preliminary phases of operations and conditions of terrain often will not permit their use at all. It is evident, therefore, that some other type of equipment must be available; equipment that can be

*Chief, Department of Tactics, The Cavalry School, Fort Riley, Kansas.



1—Arrival of complete cable equipment for 700 foot span. 2—Tower being towed across river preliminary to erection of cable way. 3—Complete tower erected, showing anchor and stabilizer system. 4—Command car "taking off" over edge of cliff. Approaches are immaterial. 5—Truck and crew in middle of span. The greater the sag the greater the permissible load. 6—Scout car in transit. All personnel may ride in vehicles. 7—Vertical aerial photo of cableway, showing relative invisibility. No attempt has been made at camouflage. 8—Oblique aerial photo of cableway. Concealment is relatively easy. No attempt has been made at camouflage.

broken up into small units for use on a broad front if necessary; equipment that will suffice for emergency use until more permanent bridges can be provided.

This equipment must be light, mobile, easily handled, require very little road space or transport, and preferably no personnel in addition to that now contained in the Engineer Squadron. It should be such that defiles may be crossed whether the bottoms are filled with water or are dry. It should be such that conditions of banks and approaches have little effect on the placing of the structure in question. It should be easily camouflaged or concealed as Cavalry antiaircraft equipment is very limited. Its capacity should be such as to transport the essential vehicles of Cavalry regiments together with a few supporting antitank guns of heavier type during the course of a night. It should be capable of division into units so that separate bridges can be erected behind each combat team.

Ferries meet some of these requirements, but they are dependent upon suitable approaches, good depth of water, and cannot be used where water does not exist. They lack mobility, are difficult to hide, and can be easily destroyed.

Cable Bridge

There has recently been developed at Fort Riley a new type of bridge that appears to have overcome all the objections and to retain all the desirable features mentioned above. This is the Cable Bridge designed and constructed by *Lieutenant Colonel Roy Lord,* formerly of the 9th Engineers.* As its name implies, this bridge is literally a steel cable, supported by two portable towers. The entire equipment, sufficient for a 700-foot span, and capable of carrying loads equivalent to that of the light tank, weighs 14 tons. At present it is carried on one truck and trailer. For field use, two trucks will probably be used. The bridge is easily erected in three hours by a crew of 52 men drawn when needed from the Engineer Squadron of the Cavalry Division. Only 12 of these men need be skilled. When the bridge is not in use, the crew can be reduced to the two drivers that are required to handle the trucks.

The bridge operates equally well over water, dry river beds, or from one side of a ravine to the other. Preparation of approaches is not required. Banks may be precipitous or gently sloping, heavily wooded or open, high on one side and low on the other, or vice versa, or at equal elevations. The construction and operation of the bridge is not affected. The only requirement is that the vehicles transporting this material, and those to be put across the obstacle, can approach to within 100 yards of the banks, more or less, and that there is a possible get-away on the other side.

*Now on duty with the Bureau of Public Relations, War Department, Washington, D. C.

Construction

Briefly, the construction of the bridge is as follows: The two equipment trucks and the work crews detailed from the Engineer Squadron drive up to the desired crossing point. This should be preferably a wooded area to give concealment. Equipment is unloaded. Tower crews, lead lines, and a system of pulleys are crossed to the far side by assault boat, or swimming, if a river, or by climbing, if a dry ravine. The pulleys are anchored and the lead line is brought back to the near side of the defile. By use of the anchored pulleys, and power furnished by Engineer trucks on the near side, one of the towers is floated or dragged across the obstacle. Towers are then raised and anchored. The steel cable is then passed over the towers. An especially constructed sling, operating on heavy steel runners, is attached to the cable. Again by use of motor power on the near bank, the cable is tightened and raised or lowered as desired.

When ready, the cable and slings are lowered, vehicles drive onto the sling, the cable is tightened. Then by use of the lead line and pulley on the far bank, and motor power on the near side, the load is moved over the river or ravine. On reaching the far bank, the cable is lowered until the sling touches the ground. The vehicle rolls off under its own power. The sling is drawn back again to the near bank, and the operation repeated. The complete operation requires slightly under five minutes, giving a traffic density of 10 to 15 vehicles per hour.

With towers properly concealed, the only exposed part of this bridge is the steel cable—1¼" in diameter. It is consequently almost invisible from the air, and cannot be seen from the ground unless the observer is quite close. Since there is great liberty in choosing the location of this bridge, it should usually be possible to place it so that its approaches are well concealed by woods. Its discovery by the enemy should consequently be most difficult. Even when located, the bridge is relatively safe from air bombardment and artillery fire, as a direct hit must be registered on one of the towers before much damage is done.

This bridge seems to offer so many possibilities, not only for the Cavalry, but for all arms, that it should certainly be given a thorough field test during the maneuvers to be held this summer and fall. Should tests prove satisfactory, a limited number of the cableways, perhaps one per combat team, should be included in the equipment of the Engineer Squadron of each Cavalry Division or similar unit.

★ ★ ★

Please give the inserted subscription card to a non-subscriber.

Editorial Comment

Faith and Work

"All the scholastic scaffolding falls, as a ruined edifice, before one single word—*faith.*"—Napoleon.

☆ ☆ ☆

" 'Tis not the dying for a *faith* that's so hard—'tis the living up to it that is difficult."—Thackeray.

☆ ☆ ☆

We are not attempting to moralize when we invite attention to this subject. To survive the times, we manifestly must have unstinted national faith and confidence; faith and confidence in ourselves and in each other; faith in the ability of our military establishment to defend this nation; and faith in that our nationals, in turn, unselfishly and with foresight, will allow nothing to impede the progress of our national defense program.

The propagation of false conception is an insidious weapon. We recently have witnessed the gradual defeat-in-detail of many European nations, largely attributed to a lack of faith and unity, and to the boring of "termites" from within the national core. Skepticism, suspicion and doubt probably have contributed more often and effectively to the defeat of armies than to any combination of enemy weapons and strategic and tactical military evolutions. The tendency of some individuals to depreciate the efforts and abilities of others in superior position, that they themselves might appear superior, is a vicious practice. Some, merely, are given to just plain "loose talk" without intelligent consideration. Others are unquestionably sincere, but obviously are misinformed as to the true facts.

America has the resources, the leadership and the organization necessary to meet any emergency. All Americans, by now, should be aware, however, that every effort, knowingly or unwittingly, which tends to destroy our military confidence and faith in ourselves, our leaders, or our future will proportionately result in a definite contribution to our enemy's *fifth column.*

☆ ☆ ☆

Common sense dictates the present need for *concerted work.* The greatest asset of any nation is the animated patriotic spirit of its people, and the greatest danger that can menace any nation, or military organization, is the break-down of that spirit—*the will to win and the courage to work* for our national defense. It was Henry Giles who said, "Man must work. That is certain as the sun. But he may work grudgingly, or he may work gratefully; he may work as a man, or he may work as a machine. There is no work so rude, that he may not exalt it; no work so impassive, that he may not breathe a soul into it; no work so dull that he may not enliven it."

The real danger to "non-Axis" countries today lies in the almost fanatical faith of Germans in themselves, in the tremendous power of the German army, and in the amazing capacity of the German people to sacrifice and work hard in coördination with an intense faith.

We, all of us respectively, have a task to accomplish in this emergency. To all cavalrymen, naturally, the combat efficiency of our cavalry is of paramount concern, not forgetting, however, that we are a component of a greater combat team.

Our FAITH, confidence, loyalty, and WORK, are essential in generating the necessary effective national strength.

★★★

Perspective

Total War presents such a colossal, gigantic, stupendous motion picture that it is extremely difficult for us, without actually witnessing it, to visualize its magnitude and tempo. Recent developments in Europe clearly indicate that the non-Axis nations have lacked *Total War Perspective*. If we are to profit by their experience we obviously must quadruple and preferably quintuple our present national effort.

It is past time that we as a nation stop wishful thinking and squarely face the facts. In every purely military situation in the present war the deciding factor has been air superiority combined with the tremendous drive actuated by mobile fire power in flanking operations. The other contributing elements are initiative, imagination, surprise, morale, leadership, endurance, RUTHLESSNESS, superior training, employment of all possible means in coöperation, superior numbers and superior weapons.

To develop such a military machine requires time, exhaustive effort and total support. For effective defense against total war, *Total War Perspective* is an absolute requisite.

Flanks

If all of the military historical incidents since the beginning of recorded history were summarized, the greatest resultant tactical lesson (assuming air superiority) for ground troops probably could be stated as simply as, *"Guard well our flanks and front, and seek enemy flank weakness."* . . . In other words, *Typical Cavalry Tactics.*

Non-combatant

Recently, in a newspaper published near Washington, an editorial bore the caption, "We cannot depend on our General Staff." Knowing the editor of that paper to be a loyal and patriotic citizen and that he must have some reason for such an unjust accusation, the Editor of The CAVALRY JOURNAL made inquiry. It seems that the editor in question had asked a friend—an enlisted man stationed at Fort Myer—how often during his eight months' service had he fired a rifle. The reply was, "Not at all." From this answer the editor wrongly deduced that the army is not giving consideration to rifle marksmanship. The explanation in this case is that the enlisted man is assigned to the *Medical Department,* and under the terms of the Geneva Convention, the Medical Department is not equipped with the rifle, and only under special circumstances as provided by the Rules of Land Warfare, are enlisted men of the Medical Department armed.

Our socalled non-combatant groups, nevertheless, render valuable service to our army and our country.

The Obligation

Excerpts from an advertisement published by an American automotive corporation, under the timely caption FORWARD MARCH!

Recent events have made it shockingly clear our country faces a peril that threatens to engulf all that we have and hold dear.

That peril is known. We need not define it. But we do need to define the obligation which it places upon the shoulders of every one of us.

That obligation is first of all to get done as fast as can be the vast defense task upon which the nation is engaged, and to stick at it regardless until we do get it done.

* * *

We all hope our country shall never itself need to wield the weapons we are building and will build in increasing volume.

But the best assurance against this is for us to go forward as Americans who stand inseparably together in order to get this defense job done.

For the defense of our country, an idle or even an inefficient factory is today no better than a bombed one.

Bantam and Scout Car

Now that we have the Bantam, what about substituting the Bantam for our scout car? Consider in this regard the installation of radio, antiair and antitank guns.

What do YOU think of it?

Antitank Guns

One of our readers recently recommended that all horse cavalry light machine gun platoons be replaced by *antitank* platoons. At first glance this idea might seem to have considerable merit. Such a plan however would tend to convert cavalry specifically into an antimechanized element, with resultant decrease in cross-country maneuverability; which is not the primary mission of cavalry.

At present, it is not intended that our horse cavalry regiment will operate as a separate unit—but as a part of the cavalry division. Our cavalry division similarly will be part of a cavalry corps. Brigade, division, and corps antimechanized units therefore will be attached to regiments; and army units being organized specifically to combat mechanization will work in close cooperation with cavalry. Such army units include the larger calibered, self-propelled weapons.

Cavalry today, from a corps point of view, is comparatively strong in antimechanized weapons for its own defense. The rôle of breaking up *large* enemy tank formations is the task of GHQ troops especially organized and armed for that specific operation.

Personnel, National Guard Cavalry

Educational qualifications of National Guard enlisted personnel are high throughout the Army. Statistics of the 107th Cavalry now stationed at Camp Forrest, Tennessee, are as follows:

107TH CAVALRY (H-MECZ)

Number of enlisted men who are college graduates and who have two or more years in college:

Troop	*2 Years*	*Graduates*
Hq. Troop	42	35
Service	72	11
Band	7	2
Med. Det.	15	2
1st Sq. Hq.	4	–
Troop A	24	8
Troop B	31	8
Troop C	18	5
2nd Sq. Hq.	3	2
Troop D	58	32
Troop E	40	14
Troop F	18	1
	332	120

Sleeping Sickness of Horses, 1940

An improved method of immunizing horses against encephalomyelitis, also known as sleeping sickness of horses, by intradermic vaccination is described in a report recently issued by Dr. John R. Mohler, Chief of the Department of Agriculture, Bureau of Animal Industry. Former methods gave rise to some undesirable reactions and in some cases, it was reported, caused deaths, but injection of the vaccine into the skin has yet to reveal unfavorable results.

The report estimates that about 1,000,000 animals received vaccination last year. Favorable results of the Bureau's studies on intradermic vaccination led to the wide adoption of this improved method during the latter part of 1940.

A copy of this report may be obtained from the Bureau of Animal Industry, Department of Agriculture, Washington, D. C.

Army Horses and Mules to be Inoculated Against Tetanus

For protection against tetanus the Army plans to immunize all horses and mules in the military service through the administration of tetanus toxoid.

In contrast to the transient immunity produced by tetanus anti-toxin, the protection resulting from toxoid injections ordinarily lasts several years.

During the past two years tetanus toxoid has been used extensively for the immunization of both soldiers and animals in the European armies.

11th Cavalry, Campo, California

Cantonment type housing facilities which will cost an estimated $1,050,000 have been authorized at Campo, California, for the entire regiment of the 11th Cavalry. The name of the camp has been designated as Camp Lockett. The construction work authorized includes:

28 barracks.
9 company storehouses.
1 regimental administration bldg.
1 officers mess.
1 post exchange.
1 warehouse.
1 fire station.
1 gas station.
1 cold storage building.
1 nurses quarters.
1 medical detachment mess.
2 animal warehouses.
9 hay sheds.
28 open stables.
9 mess halls.
9 day rooms.
3 officers quarters.
1 regimental recreation building.
1 guard house.
2 magazines.
1 flagpole.
1 utility shop.
1 hospital administration building.
1 medical detachment barracks.
2 hospital wards.
9 blacksmith sheds.
1 motor repair shop.
Heating System, Clearing and Grading, Roads, and Utilities.

Activation

The War Department has announced that the activation of more than 300 new Army units, large and small, will be made possible beginning about June 30, 1941, when the *Replacement Training Centers* of the Army "graduate" their first class of approximately 148,000 trainees called under the Selective Service Act.

CAVALRY UNITS TO BE ACTIVATED

Hq. & Hq. Troop, 3d Cav. Brig., 2nd Cav. Div.
Hq. & Hq. Troop, 4th Cav. Brig., 2d Cav. Div.
Weapons Troop, 3d Cav. Brig., 1st Cav. Div.
Weapons Troop, 4th Cav. Brig., 2d Cav. Div.
Hq. & Hq. Det., 2d Cav. Div.
Hq. Troop, 2d Cav. Div.
Antitank Troop, 2d Cav. Div.
Antitank Troop, 1st Cav. Div.

Weight Limit Removed for Cavalry

An Army Regulation, established in 1923, providing that "no applicant for original enlistment will be accepted for Cavalry Service whose weight is in excess of 170 pounds," has been changed, and no weight limit now is prescribed, except that provided by regulations for all enlistments. A standard weight for height table now governs all enlistments.

Army Strength (Estimated) May 15, 1941

The strength of the Army of the United States, May 15, 1941, was estimated at 1,320,500 officers and enlisted men. The breakdown follows:

OFFICERS

Regular Army	14,000
National Guard	20,500
Reserve Officers	46,000
Total	80,500

ENLISTED MEN

Regular Army, 3 year enlistments	462,000
Regular Army, Reserve and one year enlistments	18,000
National Guard in Federal Service	270,000
Selective Service Trainees	490,000
Total	1,240,000

TOTAL COMBINED STRENGTH

Regular Army	494,000
National Guard	290,500
Reserve Officers	46,000
Selective Service Trainees	490,000
Total	1,320,500

CAVALRY STRENGTH

OFFICERS

Regular Army (plus 2 Philippine Scout Officers)	905
National Guard (in Federal Service)	447
Reserve Officers (on active duty)	1,546
	2,898

ENLISTED MEN

Regular Army	25,920
National Guard	10,644
	36,564
TOTAL COMBINED CAVALRY STRENGTH ON ACTIVE DUTY	39,462

Hundred Percenters

Organizations with 100% membership in the U. S. Cavalry Association (June, 1941).

3d Cavalry, Fort Myer, Va., Colonel W. W. Gordon, Commanding.

4th Cavalry (H-Mecz), Fort Meade, S. Dak., Lt. Colonel John B. Coulter, Commanding.

56th Cavalry Brigade Headquarters, Fort McIntosh, Texas, Brigadier General Walter B. Pyron, Commanding.

102d Cavalry (H-Mecz), Fort Jackson, S. C., Colonel Donald W. McGowan, Commanding.

106th Cavalry (H-Mecz), Camp Livingston, La., Lt. Colonel Mark S. Plaisted, Commanding.

113th Cavalry (H-Mecz), Camp Bowie, Texas, Colonel Maxwell A. O'Brien, Commanding.

1st Cavalry Troop, Reconnaissance, (Sep.), Fort Davis, C. Z., Captain Clayton J. Mansfield, Commanding.

1st Reconnaissance Troop, Fort Devens, Mass., Captain James B. Quill, Commanding.

3d Reconnaissance Troop, Fort Lewis, Washington, Captain Harry W. Miller, Commanding.

4th Reconnaissance Troop, Fort Benning, Georgia, Captain R. D. Palmer, Commanding.

6th Reconnaissance Troop, Fort Riley, Kansas, Lieutenant R. E. Nelson, Commanding.

7th Reconnaissance Troop, Fort Ord, California, Captain Milo H. Matteson, Commanding.

Coincidence

Speaking of coincidences, see if you can top this one! Privates Sid Tepper and Eddie "Duke" Herzog received their draft questionnaires on the same day, were inducted on the same day and from Camp Dix, N. J., were assigned to the Cavalry Replacement Training Center at Ft. Riley. They ate in the same mess hall and bunked together. They were both composers and affiliated with the same company, Broadcast Music, Incorporated. . . . But, until their commanding officer at the Replacement Center (who knows everything about everybody) asked them to compose a Cavalry Replacement Training Center theme song they HAD NEVER MET!

Sid Tepper, composer of "Candle Burning Blue" and "Jim-Jam-Jumpin' Jive," collaborated with "Duke" Herzog, composer of "Love Is" and arranger for Jimmy Dorsey, Claude Thornhill, Henry Jerome and Jack Teagarden, and found their collaboration a "natural."

As quickly as they could write it down, they composed "Men of the Cavalry," and in less than a week the Replacement Center was singing and whistling their lilting marching song. Six thousand copies of the words have been destributed to Cavalry selectees.

These composer-soldiers are now utilizing all their spare time in developing a song writing combination that is being savored by the "rough and ready" outdoor life of the hard-riding, straight-shooting "Hoss Cavalry."

These are two young men who can thank the Army for a happy coincidence, and though they both still think often of the lights of Broadway, they're literally living the "Life of Riley" at Riley, and, what's more, they say they like it!

Okay! Troopers Tepper and Herzog. If you think that you can write a better *Cavalry song* than the one published in this issue, by Colonel Peters (see page 109), hop to it and *don't forget to send us a copy*. Also, your "Men of the Cavalry" song!

Editor's Mail

Editor, The CAVALRY JOURNAL:

Your kind invitation to "Spark Up" with constructive suggestions for improving cavalry supply during battle (page 27, January-February issue of The CAVALRY JOURNAL), is hereby accepted, first, because it is desired to present to your readers a clear idea of the different type rations now available for varying conditions of field service and, second, because the Quartermaster Corps welcomes free discussion of these important supply matters.

We are all interested in "Chow" and those of us who have seen service in the field are particularly anxious that this important phase of Army life be kept up-to-date. For several years the Quartermaster Corps has been conducting experiments to develop the best types of rations and it not only has developed some rather interesting field rations, but also a gasoline-burning field range which is far superior to any field cooking equipment ever used. It eliminates entirely the work required for setting up the old-style range and is ready for operation at any time anywhere. Mounted on trucks, this new range, on which meals can be prepared while the truck is in motion, can accompany units of mechanized cavalry wherever they may go and thus makes possible the use of the "A" and "B" field rations under conditions which formerly necessitated the use of the special or individual reserve ration.

Field Ration "A" in all essentials, is the normal garrison ration and includes perishables.

Field Ration "B" corresponds as nearly as practicable to "A" with the exception that nonperishable processed or canned products such as meats replace items of a perishable nature, such as fresh beef.

Two new field rations have been adopted as the result of a special study of canned, cooked meals conducted by the Quartermaster Corps in 1934-1936. These new rations are known as Field Rations "C" and "D."

The Field Ration "C" consists of three 12-ounce cans of ready-to-eat meals designated M-Units and three cans, each containing bread, coffee, sugar and chocolate, known as B-Units.

One meat meal or M-Unit is a roast beef hash; one is beef stew, and the third is a meat (part pork) and bean mixture.

The five crackers in the B-Unit contain a generous proportion of whole wheat, whole milk solids, shortening and sugar and are highly nutritious. The chocolate is a one-ounce confection stabilized to resist heat up to 120° F. without melting. The 3/10 ounce of soluble coffee will make eight ounces of fluid coffee. Three individually wrapped tablets of sugar complete the contents of the B-Unit can. One M-Unit and one B-Unit constitute a generous and well-balanced meal. The cans are all of the key-opening type, which makes for convenience in serving. All formulas for this ration were developed by the Quartermaster Corps Subsistence Research Laboratory in Chicago.

The Field Ration "D" consists of chocolate enriched by added cacao fat, sugar, milk powder, oat flour and vanilla flavoring. Thiamin Chloride (Vitamin B_1) is added in sufficient quantity to provide twenty-five In-

ternational Units per 100 calories—Vitamin B_1 is sometimes called the "pep" vitamin. This ration has an energy value of about 2,360 calories per pound. It is produced in 4-ounce pocket-size cakes each wrapped in a sturdy gas-proof wrapper, and withstands heat up to 120° F.

The Field Rations "C" and "D," which have been extensively tested and found to meet every requirement for which designed, are intended for use when circumstances make the Field Rations "A" and "B" unavailable. The Field Ration "C" may be modified by subtracting one M- and one B-Unit and adding one or two bars of the "D" ration.

With reference to your suggestion that the use of larger containers for food may be more desirable I might say that while it would be quite possible and commercially practical to purchase parts of the Field Ration in larger containers, it is doubted that normal usage would justify the purchase. The beef stew and bean mixture could be procured in No. 10 (96-ounce) cans and the roast beef hash could be purchased in 6-pound cans of the truncated pyramid type. The components of the B-Unit could be purchased and packed separately or collectively in standard commercial packages of any desired size. The advantage gained by such packaging would be:

a. Slight saving in cost.
b. Fewer packages to be opened.
c. It would make the Quartermaster's task a little easier.

The disadvantages would be:

a. Inability to issue the exact number of rations required—except by coincidence.
b. It would be of no value to an individual as a reserve ration.
c. It could not be carried by the individual Infantry or Cavalry soldier.
d. Difficulty in heating large cans of hot water; larger vessels required for water and more time for heat penetration.
e. Greater loss through damage.
f. It would make the troops' task a little more difficult.

All factors considered, I believe it is much better to adhere to the use of individual-sized packages, even though the ration be used in circumstances where the organization using the ration is intact.

It is believed that one B-Unit and one M-Unit might very well be used in lieu of prepared sandwiches for the noonday meal for men on maneuvers, and when so used it is considered as one-third of the ration for the day and the Field Ration "A" is reduced accordingly. Army regulations provide for the use of Field Ration "C" only when the use of Field Rations "A" and "B" is impracticable.

I hope you will find it possible to give prominence to these facts equal to that of the editorial "Cavalry Chow" in the January-February issue of your always interesting JOURNAL.

The Quartermaster Corps will be sincerely interested in any comments or questions by your readers because it is only by such free discussion that we can attain the objective sought i.e., the best ration for the Army.

Yours very truly,

Signed: E. B. GREGORY,
Major General
The Quartermaster General.

* * *

EDITOR'S NOTE: Appreciation of the samples of U. S. Army Field Ration, Types C and D, sent us by the Quartermaster General, is expressed to General Gregory. We are convinced of the high quality of these rations and, obviously, this informative letter will be of great value to the numerous cavalry officers who today are on special detail and are not actually with combat troops.

* * *

Congratulations, Colleagues!

Editorial commendation is extended to two service newspapers:

In the mimeographed, non-professional field, we have *The Crossed Sabers,* published weekly by the 2nd Squadron, 11th Cavalry, stationed at Campo (on the Border), California. It definitely reflects initiative, ingenuity, and high morale.

In the professional field, the *Army Times,* "National Weekly Newspaper for the United States Army," published in Washington, D. C., unquestionably is "tops" —and without doubt is destined to become, in this emergency, what *The Stars and Stripes* was to the army in World War I.

The CAVALRY JOURNAL salutes the editors of *The Crossed Sabers* and the *Army Times!*

* * *

Acknowledgment

Your editor appreciates the numerous letters and interesting manuscripts recently received from our readers.

An editor is never so happy as when he has more material than he needs, for then he can discriminate in favor of timely value of published material.

When an editor, particularly of a service journal, receives letters criticizing this and that, or asking for information—or occasionally admitting value received—editorial morale soars, for then he knows that the journal is *alive.*

Your ideas and experience probably are of greater value to other cavalrymen than you, modestly, are willing to believe. So please "continue to exercise." *Deadline date, next issue, July 10th.*

The Armored Force

Reconnaissance Battalion, Armored Division

By Major I. D. White, Cavalry★

Organization

THERE are three agencies available in the Armored Division which are specifically organized to execute reconnaissance. They are:

The attached air service.
The reconnaissance battalion.
Regimental reconnaissance companies of the armored regiments.

In addition to the above, the execution of reconnaissance is a continuing function of all combat units on the march and in combat.

The availability of specially organized reconnaissance agencies within the division permits the initiation of reconnaissance at the earliest practicable moment. The organization and means of communication within these elements facilitate maintaining contact once the enemy has been located.

The Reconnaissance Battalion is organized with a Battalion Headquarters and Headquarters Detachment containing the elements essential to command, control and administration; two Reconnaissance Companies (Armored); one Armored Company (Light) and one Rifle Company (Armored). It also has an organic Medical Detachment equipped with cross country ambulances.

The Reconnaissance Companies each consist of four 4-car reconnaissance platoons and a motorcycle platoon. The reconnaissance platoons are equipped with scout cars and have motorcycle scouts. The motorcycle platoon is equipped with solo motorcycles and tricycles or the ¼-ton 4 x 4 truck (Bantam). The motorcycle platoon dismounts 16 rifles and 15 sub-machine guns. The Armored Company (Light) comprises three 4-car light tank platoons and a company headquarters. The Rifle Company (Armored) is organized into three 34-man rifle platoons and a special weapons platoon consisting of one 60-mm. mortar section (3 mortars) and a .30 caliber machine gun section of two light guns. The Rifle Company is transported in armored half-track personnel carriers which mount .30 caliber light machine guns.

The Armored Company and the Rifle Company are included in the battalion organization to support and assist the Reconnaissance Companies by furnishing the combat strength necessary to reduce road blocks, penetrate hostile screens, and to seize and hold vital terrain features pending the arrival of advance elements of the division.

Moral attachments include Ordnance and Quartermaster maintenance elements and a specially organized Engineer platoon. The latter organization assists in terrain and route reconnaissance, in constructing or destroying road blocks and in effecting demolitions. It has also available a small number of assault boats to ferry personnel across unfordable streams and can construct, in a very short time, a raft to ferry scout cars and motorcycles.

Function

The function of the Reconnaissance Battalion is to provide the Division Commander with an independent reconnaissance unit capable of performing distant, close and battle reconnaissance. Under average conditions of weather and visibility the attached air service may be expected to provide distant and preliminary route reconnaissance and by obtaining early information of hostile dispositions, permit the focussing of the ground reconnaissance agencies where more detailed information is necessary. However, when the air service for any reason, is prevented from securing information which is obtainable only through distant reconnaissance, the reconnaissance battalion must be prepared to execute such missions.

Distant Reconnaissance

The distance to which ground reconnaissance elements are dispatched depends largely upon the efficacy of air observation. Conditions of weather, darkness or hostile air superiority may prevent or restrict air reconnaissance. Under such conditions the reconnaissance battalion will be required to extend its activities. At other times the battalion may be required to verify or confirm air service reports over extended distances. When performing distant reconnaissance the battalion commander must be closely supported by the regimental reconnaissance companies.

★Commanding 82d Reconnaissance Battalion (A).

Close Reconnaissance

In performing close reconnaissance, the battalion seeks to obtain all possible information concerning terrain, routes and hostile dispositions within a specified area, necessary for the Division Commander to formulate a plan of action and issue necessary preliminary orders for its execution.

Battle Reconnaissance

When the division is committed to combat, the reconnaissance battalion performs battle reconnaissance as follows:

a. It seeks to locate the hostile flanks and rear.

b. It maintains observation at a considerable distance to the flanks in order to give timely information of the movement of hostile reserves and reinforcements and report areas contaminated with persistent gas.

c. It performs harassing operations against hostile command and supply installations and in furtherance of this may execute hasty demolitions.

d. It prepares plans to initiate pursuit, generally by encircling maneuver.

e. It continues more detailed reconnaissance of terrain and hostile dispositions—frequently dismounted.

f. It seeks gaps or soft spots in the hostile lines.

Note: *e* and *f* are generally taken over by regimental reconnaissance companies as rapidly as possible.

Missions and Reconnaissance Instructions

The most important factor in successfully executing reconnaissance missions is a complete and thorough knowledge and understanding on the part of reconnaissance unit commanders of the mission of the division as a whole and the general plan of the Division Commander for its execution. This knowledge and understanding must be maintained throughout operations, especially as the situation and plans are developed or changed. Close liaison must be maintained with the Division Commander through the Intelligence and Operations Sections of the division staff. After contact has been gained and as the main body of the division closes on the battalion, the Reconnaissance Battalion Commander will find it desirable and often necessary, to report in person to the Division Commander or his representative, both to give and receive information.

Initial reconnaissance instructions issued to the battalion are generally simple and include the assignment of a zone or area to be reconnoitered and a brief statement of the information desired. Phase or control lines, the time the information is desired and other measures for control and coördination may be prescribed. The essential features of the reconnaissance instructions are:

a. That the battalion commander understand what information is desired and the general area where it is to be obtained and:

b. That he understand the mission of the division as a whole and the general plan of the commander for its execution.

Within the battalion, more elaborate and detailed instructions are necessary. Zones, routes or areas of responsibility must be clearly defined for each reconnaissance company. Measures for control and coördination must be clearly specified. Missions to subordinate reconnaissance elements generally take the form of specified questions.

After contact has been gained or as a result of information obtained from air reconnaissance additional and more detailed and specific missions may be assigned to both the Reconnaissance Battalion and then in turn to its subordinate units.

It is extremely important that the battalion commander be kept informed of information and intelligence received by G-2 from other sources. One of the functions of the battalion liaison officer maintained at division headquarters is to facilitate and expedite transmission of such items to battalion headquarters.

Standing Reconnaissance Missions

The assignment of missions and the issuing of reconnaissance instructions is greatly simplified and facilitated by means of *Standing Operating Procedure* which prescribes standing reconnaissance functions for all reconnaissance agencies. These reconnaissance functions apply to all reconnaissance elements regardless of size; are carried on automatically without additional orders and in conjunction and coincident to the execution of specified missions.

These automatic functions require that information covering the following items be obtained:

Item No. 1—Contaminated Areas.

Includes the location, size of area, and type of gas encountered.

Item No. 2—Hostile Forces Other than Mechanized or Motorized.

Includes strength, composition, movement, location, and disposition of hostile forces which are not mechanized or motorized.

Item No. 3—Hostile Aircraft.

Includes type, altitude, and direction of flight of hostile aircraft observed.

Item No. 4—Hostile Mechanized and Motorized Forces.

Includes strength, composition, movement, disposition, location and type of hostile mecz and mtz elements.

Item No. 5—Communication.

Includes water, light, power, railway facilities, telephone and telegraph stations, and radio stations.

Item No. 6—Supplies.

Includes gasoline, oil, food, and other types of supplies suitable for the use of the division.

ITEM NO. 7—LANDING FIELDS.

Includes landing fields suitable for aviation attached to the division with special attention to landing fields for courier type planes.

ITEM NO. 8—ROUTES AND BRIDGES.

Includes type, location, number of lanes, usableness in wet weather, and suitability for all vehicles of the division. Includes obstacles, road blocks and other defensive works.

ITEM NO. 9—ESTIMATE OF TERRAIN.

Includes the suitability of terrain for mechanized attack, assembly positions, cover, and concealment.

ITEM NO. 10—FRIENDLY TROOPS AND MISCELLANEOUS.

Includes friendly troops within the sphere of action of the reconnaissance battalion and other intelligence data not included in other items pertinent to the operation, such as weather, visibility, etc.

Reports on these items may be required to be rendered as soon as obtained; hourly; or at specified times or places.

An understanding by all concerned of these standing missions, gives the word "reconnoiter" definite substance and meaning.

COÖPERATION WITH THE AIR SERVICE

Air service missions are closely linked to the successful operation of ground reconnaissance agencies. In addition to any planes for division missions, it will be frequently desirable to assign one plane for close and direct coöperation with the reconnaissance battalion. The function of the plane is to conduct route reconnaissance; to direct the attention of subordinate elements on suspected areas; and to assist in control coordination and communication within the battalion, especially during periods when radio communication is not possible or desirable.

When a plane cannot be made available for direct attachment to the battalion, any planes performing air reconnaissance missions coöperate to the fullest extent. Observers are kept informed of the zone of operations of the battalion, particularly of the axis of march of the battalion command group. The battalion and each reconnaissance company maintains a radio set in the division air ground net and all concerned take necessary action indicated as a result of intercepted messages. It will frequently be desirable under certain conditions, for planes executing division missions to insure that vital information is transmitted direct to the reconnaissance battalion, either by radio, or more frequently by dropped message.

COÖPERATION WITH REGIMENTAL RECONNAISSANCE UNITS

Regimental reconnaissance companies, functioning under regimental or column commanders, perform more detailed reconnaissance than that of the Reconnaissance Battalion. Based on information received from the *division* reconnaissance elements, both air and ground, the attention of regimental units is closely directed to specific routes or areas. When the elements of the reconnaissance battalion have gained contact and are held up, regimental units close and gain contact with divisional units within their respective zones. They assist and coöperate in every way to secure the continued advance of the divisional reconnaissance elements. Regimental units also relieve reconnaissance battalion elements which have been left to guard bridges or hold vital terrain. The latter units then either push on and rejoin, or become attached to the regimental units, depending on time and space factors and enemy activity. Regimental units must conduct the detailed reconnaissance necessary to locate small bodies of hostile troops and secure accurate information of routes and terrain features not covered by the Reconnaissance Battalion.

SECURITY

Security for the division other than that furnished by timely information of the enemy; is not a function of divisional or regimental reconnaissance agencies, except as follows:

a. Vital stream crossings or other defiles must be guarded along the route of advance of division columns, pending the arrival of advance elements from the main body.

b. Hostile threats which may develop within or adjacent to the battalion zone and which may seriously interfere with the movement of the division, must be delayed, pending further instructions from the division commander. Column commanders cannot expect either division or regimental reconnaissance elements to perform the security functions expected and required of an advance guard.

OTHER MISSIONS

Obviously, the Reconnaissance Battalion is organized and equipped to perform missions other than reconnaissance when necessary. Such missions will often include the following:

Security.
Delaying and harassing action.
Seizing and holding key terrain.
Participation in combat with the division.
Pursuit.
As a division reserve.

It must be prepared at all times to execute any of the above missions upon completion of a principal reconnaissance mission.

While it would be exceptional to assign a dual mis-

sion to the battalion, the execution of one type of mission may require a temporary transition to another type. It may also be necessary under certain conditions for different elements within the battalion to be performing different types of missions. However, the collection and transmission of information always receives the utmost attention, regardless of the assigned mission.

Combat

Many reconnaissance elements have ruined their effectiveness through too great a willingness to engage in combat. Fleeting but minor targets often present a temptation almost too much to be resisted. The desire to engage in combat must be overcome and controlled by the leaders of small reconnaissance elements. Whenever possible, subordinate units should be advised as to the extent or the necessity for engaging in combat. However, the final decision rests with the leaders of the platoons, sections and individual vehicles. Leaders must be guided by the principle that the best reconnaissance is performed by stealth and that when the presence of their unit has been disclosed to the enemy by the noise incident to combat, the enemy will bend every effort toward their destruction and will institute a relentless search toward that end.

A reconnaissance element whose presence has become disclosed to the enemy can expect to be hunted down as its continued existance is an ever present menace to the enemy, not because of its combat power, but because of its ability to furnish information.

Missions may be assigned which will require combat for their accomplishment. Certain missions may require a combination of reconnaissance and security. An example of such a mission would be—"reconnoiter Highway 77 to BLANKTOWN and hold the NORTH RIVER crossing at that point pending the arrival of units from the main body."

At times, units which find themselves cut off from their own forces will frequently find it necessary to fight their way out. On the other hand, if stealth is employed under such conditions there is a possibility that the advance of the main body will restore their own freedom of movement. It should be remembered that a reconnaissance unit which has penetrated the hostile forces to such an extent that it has become cut off has placed itself in the most desirable position to secure valuable information.

The whole question of combat can be summed up as follows: Reconnaissance elements engage in combat when necessary to accomplish their mission; when given a definite combat or security mission; or to provide for their own protection.

Tactical Employment

The method of employment of the reconnaissance battalion and the method of execution of a reconnaissance mission is generally based on the amount of time available for its execution. When sufficient time is available, the principle of stealth is employed to the maximum advantage and combat is avoided. Where time is pressing and division columns are closing on the reconnaissance elements, combat must be resorted to more frequently. In a moving situation the battalion will operate from 25 to 150 miles in advance of the division. Frequently the battalion will move during the night to the area from which it will commence its operations. Sufficient time must be allowed to conduct reconnaissance before division columns close up. Satisfactory reconnaissance cannot be conducted at the rate of march of division columns.

A simple tactical situation, illustrated by a diagram (below) will serve to show the actual tactical functioning of the reconnaissance battalion.

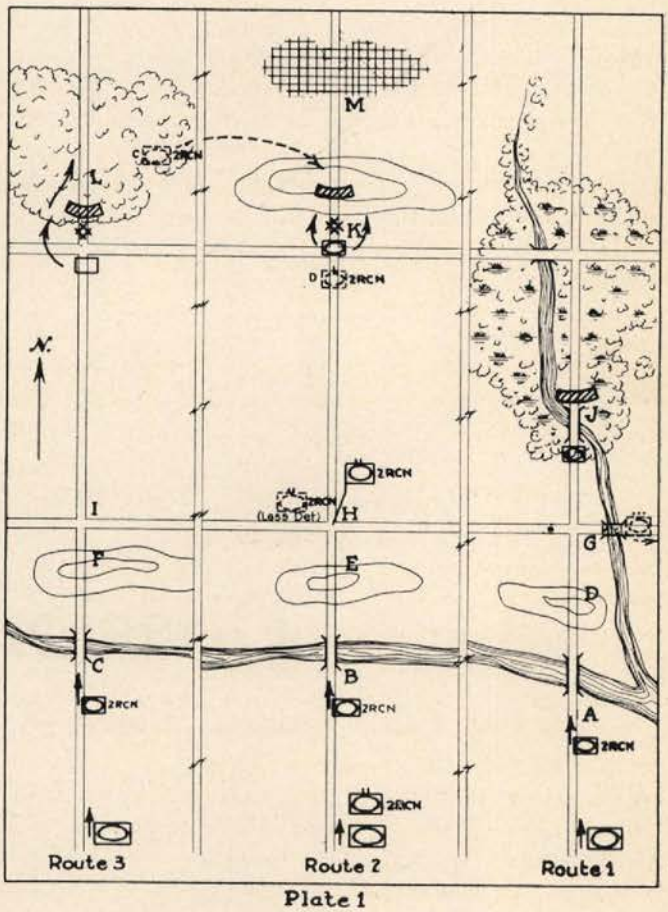


Plate 1

In this situation the Reconnaissance Battalion has been assigned the mission of reconnoitering the zone between Routes 1 and 3, both inclusive, to report on a hostile force reported in the vicinity of M and to pay particular attention to the high ground in the vicinity of K. Streams shown are unfordable. The division is to march in three columns via Routes 1, 2, and 3.

The zone was subdivided to the two Reconnaissance Companies and small elements from the rifle company were attached to each, to be left to guard the bridges at A B and C.

Battalion Headquarters with the Rifle Company (less detachments) and the Armored Company,

marched on Route 2, fifteen minutes in rear of the reconnaissance element on that route.

Pending information from the Reconnaissance Companies the Battalion CP was established at CRH. Meantime the rifle elements left to guard the bridges were relieved by advance elements from the division and rejoined the battalion at H.

The reconnaissance unit on Route 1 reported that it was held up at the bridge at J and thus far had been unable to side slip because of the type of terrain.

The reconnaissance unit on Route 2 reported strongly defended road blocks in the vicinity of K and attempts to reconnoiter the high ground in this vicinity by vehicular reconnaissance have been stopped by hostile fire. Dismounted patrols from the motorcycle platoon have been sent out.

The reconnaissance unit on Route 3 reported that it was initially held up by road blocks in the woods near L, but that part of this unit has been able to side slip to the west and is continuing reconnaissance to the north.

The battalion (less detachments) moved forward initially on Route 2. Based on information received and as the result of personal reconnaissance, the battalion commander decided to attack in order to determine the strength of the hostile forces opposing his advance, and to seize the high ground in the vicinity of K.

The attack was based on the following plan:

The Armored Company (Light) to attack the hostile right and rear from the vicinity of the woods east of L.

The Rifle Company (Armored) and reconnaissance elements now in contact to support the tank attack by attacking generally astride Route 2.

During the progress of this attack, the air service reported a hostile motorized force approaching G, from the east. Part of the Reconnaissance Company (including its motorcycle platoon) which has been operating near J was ordered to gain contact with this hostile force and delay its advance.

Assuming that the attack of the battalion has secured the high ground near K, the way has been cleared for reconnaissance elements to continue their advance toward M. Necessary steps are taken to hold the important terrain in the vicinity of K, pending the arrival of elements from the main body.

Conclusions

Experience has developed the following principles which are applicable to reconnaissance performed by all types of armored units:

a. The basic principles of Scouting and Patrolling are applicable to the execution of reconnaissance by all armored reconnaissance units.

b. Time being available, the best reconnaissance is performed by stealth. Where time is pressing, combat must be resorted to.

★ ★ ★

Division Review

By Private Joseph P. Denove, 17th Engineers

THERE were men—10,000 of them. There were machines—2,500 of them. There was wind and rain and a darkened sky. They all came to a huge bare field and were reviewed in their turn by Major General George S. Patton, Jr., and a handful of civilian spectators who witnessed the recent review of the entire Second Armored Division. It was a proud day for General Patton, for those men and machines were his own Division on parade. It was a proud day for the spectators, for to them the Division meant a speedy fighting unit that might one day defend them. But, to this lone selectee, it brought what was at once the simplest yet the most impressive thrill sustained in his 25 years of life.

Lost in an avalanche of men and machines, the chill rain pinging away at his steel trench helmet, he could feel the immensity, the gargantuan proportions of this thing of which he was now a part—Uncle Sam's Army.

Seven weeks removed from a home in the Bronx, N. Y., a job on a newspaper in the big city, his Army life had been no different from any of the other 5,000 selectees in the Second Armored Division. He marched on a dusty drill field beneath a hot Georgia sun. He was taugh how to shoot a rifle, a machine gun, and a pistol. He was taught military courtesy and learned to salute officers. He did many things but never saw more than a scattering handful of soldiers at one time.

To him, then, as he sat in a Headquarters Company truck of the 17th Engineers, to which he is assigned, came a thrill he had never before experienced.

A constant chill—the kind he used to get back in his grade school days when the class began singing the National Anthem—raced up and down his back as his eyes reached out to the farthest corners of the field. Over one hill came rumbling, churning tanks, bristling with mounted guns, and his eyes opened wide. And then

REVIEW OF SECOND ARMORED DIVISION

1—Major General George S. Patton, commanding the Second Armored Division, and Brigadier General Alvan C. Gillem, commanding the Second Armored Brigade, watch the review from General Patton's light tank. General Gillem is now commanding the Third Armored Division at Camp Beauregard, La. It will be permanently stationed later at Camp Polk, La. 2—Six-ton armored scout cars, their crews and drivers almost hidden, rumble down the field for the commanding general and his guests.

REVIEW OF SECOND ARMORED DIVISION

1—Light tanks poke their 37-mm. snouts to the fore as they wait for the parade to begin. 2—Across the face of the huge field the command cars (foreground) and scout cars (background) are drawn up in formation.

trucks, filled with trim, uniformed and helmeted men. Then guns—big guns, trailing behind the trucks. Then motorcycles—many, many times the number he had seen being ridden by New York's finest in a St. Patrick's Day parade—flooded down the center of the field. Everywhere his eyes turned, there were men and machines. Once as he turned his head to the rear, he saw other trucks, of weird shape and design.

"What outfit do they belong to?" he asked anxiously of a buddy.

"They're the 17th Engineers. . . ."

Surprise of surprises, the very organization to which he himself belonged. He had only been with the engineers for a day or so, and he hadn't come in contact with these strange machines—earth augers, concrete mixers, bull-dozers, gas shovels, etc. Immediately, then, his eyes turned to the head of his column where stood Major Howard L. Peckham, the battalion commander, and his chest swelled with pride. It might have been hero-worship, more likely not, as that was something that so-called hard boiled New York had long ago forgot. It was respect.

Finally, the machines settled into position. The noise of those rumbling motors died away abruptly. Only the sound of regimental flags, whipping in the breeze could be heard above the driving rain. Suddenly from another corner of the field, a tank flying two flags, one red, the other green, its turret sporting red, white and blue stripes, raced for the reviewing stand.

That selectee didn't have to ask. He knew it was the general—General Patton—come to review his division.

Later, even as the General's inspiring words fled from the loudspeaker, that rookie private was sure, dead-sure, that the division had gone on review for him, to try to tell him what it means to be a soldier in the United States Army.

THE NEW MEDIUM TANK

Fire-power plus—a 75-mm. gun, a 37-mm. gun, and a pair of machine guns are seen in one bristling picture.

Field Supply of a Cavalry Regiment (H&M)

By Major Mitchell A. Giddens, 4th Cavalry

DURING the maneuvers in which the 4th Cavalry has participated since its reorganization on February 1, 1940, this regiment has used a system of supply which has proved successful in feeding the regiment three meals a day and furnishing other available supplies when needed. At times minor modifications in the methods described were necessary to meet the requirements of the rapidly changing situations and tactical movements of the regiment. At no time were the essential elements of the plan changed.

Every supply plan is based upon certain principles. These principles are enumerated in Field Service Regulations and in Notes on FSR—Administration (published by the War Department on March 13, 1940). Three of these principles are repeated here to stress their importance as particularly applicable to the supply of the Cavalry regiment (H & M).

(1) Troops must not be encumbered with a greater quantity of supplies and impedimenta than is necessary to assure their mobility and readiness for action.

(2) The supply system must be based upon the fundamental principle that the combat troops should not have their attention diverted from their task of defeating the enemy by anxiety concerning their supplies. Therefore the impetus of the movement of supply is from the rear which so organizes its services that routine requirements are replaced automatically.

(3) The cardinal principles of the system of supply are: simplicity, flexibility, elasticity and mobility.

TROOPS

	Hq.	Serv.	A	B	C	Hq. 2nd Sq.	E	F	Atchd. G	Atchd. Med.	Total Regt.
Scout Cars							1	1			2
Ambulance										2	2
Trucks, ¼-ton (Bantam)	1	12							2	2	17
Trucks, ½-ton, C.-R.		3									3
Trucks, ½-ton, P.U.	1	2				1	1	1	1	4	11
Trucks, 2½-ton, Cargo Ammunition		6									6
Combat	2	1	1	1	1		1	1	2		10
Gasoline and Oil		6					1	1			8
Kitchen	2	2	1	1	1		1	1	1		10
Troop Motor Maint.	1	1					1	1	1		5
Regtl. Motor Maint.		3									3
Truck, Wrecker		1									1
Truck-Tractor, W/Semi										3	3
TOTAL VEHICLES	7	39	2	2	2	1	6	6	7	11	83

There are five classes of supply. Briefly they are:

Class I—Rations, forage, fuel and credit items such as cleaning and preserving supplies, soaps, toilet paper, etc.

Class II—Tables of Basic Allowance items of clothing and equipment.

Class III—Gasoline and lubricants.

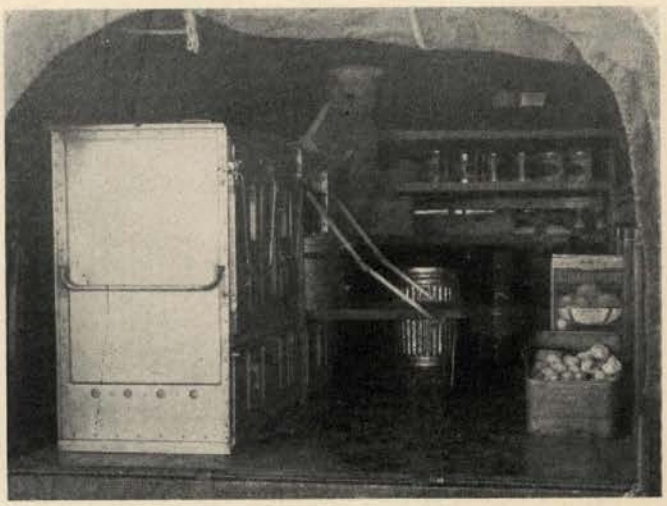
Class IV—Medical supplies, Signal supplies, Engineer supplies, Chemical Warfare supplies, Motor Maintenance repair supplies and special supply requirements.

Class V—Ammunition.

The 4th Cavalry supply plan is based on detailed attention to the supply requirements of the regiment in the field. Classes I and III supplies must be furnished daily; Class II supplies must be replaced periodically; Class IV supplies must be furnished invariably on call to meet emergency requirements; and Class V Ammunition must be supplied during combat as needed. It is necessary that the requirements of the regiment be known if the regimental plan is to function smoothly. To this end S-4 maintains a detailed logistic chart from which regimental supply requirements can be quickly estimated.

The 4th Cavalry Train is listed by vehicles and organization in the accompanying chart.

The daily routine followed in this regiment is illustrated in the following time schedule. The times given are approximate only as the higher headquarters under which the regiment is operating designates the time



Kitchen truck

for making reports and issuing supplies. Regardless of time this supply routine is normally accomplished every twenty-four hours.

7:00 AM—Daily telegram to higher headquarters giving strength of regiment in personnel and animals and the estimated gasoline requirements of the regiment.

2:00 PM—Preparation of evening meal.

4:30 PM—Troops report ammunition expenditure to regimental CP. Upon receiving this information S-4 sends replacement ammunition forward on the kitchen or combat truck.

Dark —Leave rear echelon with the kitchen, impedimenta, and gasoline and oil trains for the regimental CP, at which point trucks are dispatched to the troop CP's. When necessary the troops furnish guides.

7:00 PM—Regimental ammunition expenditure report to higher headquarters.

9:00 PM—Draw Class I supplies at designated supply point.

11:00 PM—Draw ammunition at designated supply point.

1:00 AM—Refill or exchange empty gasoline drums at the gasoline supply point.

Dawn —All elements of the regimental train have returned to the rear echelon.

On Call —Repair parts for motor maintenance not on hand in the regimental motor maintenance platoon are obtained from the appropriate service supply point by the regimental motor supply sergeant.

How does S-4 carry out this daily routine? Let us take each class of supply and follow it through from the method used to obtain supplies from the higher echelons of supply until they reach the troops.

Class I—The daily telegram informs higher headquarters of the strength of the regiment in officers, warrant officers, enlisted men and animals. This is the basis in furnishing the regiment its requirements of automatic Class I supplies (rations, forage, etc.). These supplies are normally received by the regiment three days later. The daily telegram is based upon figures furnished by the troops to the Adjutant, who obtains the morning reports from the mess sergeants upon their return from feeding the troops their breakfast. Thus by utilizing the mess sergeants to receive this information from the troop first sergeant during breakfast, accurate figures become available to the adjutant without loss of time.

Feeding the regiment when it is scattered on reconnaissance requires careful planning by S-4 and the mess sergeants.

At 2:00 PM there is still one ration on the kitchen trucks.

In order that cooking can be done in bivouac, or on the march, our kitchen trucks have been fitted with removable frames and shelves for the storage of rations and equipment so that the cooks will have space in which to move around and work conveniently. While it is not normal to cook when on the move it has been done and is easily accomplished when necessary to do so.

At any rate supper is prepared and ready to serve by 5:30 PM.

This regiment is equipped with marmite cans which contain three inserts. When supper is ready these cans are preheated and the prepared food is dished out from the cooking utensils into the inserts. Each marmite can contains items of the cooked meal so that upon arriving at the troop CP, hot food can be sent forward to the detachment without delay. With proper planning by S-4, troop commanders and the troop mess sergeants every troop can be fed quickly and easily regardless of the fact that part of the troop may be on duty away from the troop CP. The use of marmite cans permits a latitude in the feeding of the regiment not previously available to it.

The cooking utensils are then cleaned and made ready for cooking breakfast.

S-4 has to be kept informed on where all troops are located and especially where the Pioneer and Demolition Platoon and the Antitank Platoon have been attached. At this time he adjusts the supper rations between troops so that there will be sufficient food in the kitchen trucks required to feed attached personnel. The adjustment of rations at this time is essential and must fit into the regimental commander's plan of action, particularly if moves are to be made during the night. S-4 is the key individual in making this adjustment and to accomplish it he must keep himself fully informed as to where all elements of the regiment are located.

We are now ready to feed the regiment. At dusk the regimental commander orders the kitchens forward. S-4 immediately takes them to the Regimental CP and, after consultation with the Operations Officer, the kitchens are dispatched to their respective troops. Upon reaching the troop bivouac, supper is served. Detachments on outpost duty or reconnaissance screens are either relieved or food is sent forward in the marmite cans and served to them in relays while the detachment continues to perform its mission. Vehicles other than the kitchen trucks are used to carry food to outlying detachments. The kitchen truck remains at the troop bivouac until breakfast is served and lunches issued. The mess sergeant then gets the troop morning report from the first sergeant and returns to the rear echelon.

Other Class I supplies go forward in the same manner on the troop combat truck. When hay is issued an additional truck per horse troop is required.

In the meantime S-4 after dispatching the kitchen trucks to the troop bivouacs, has returned to the rear

echelon. The regimental supplies are at the supply point ready for issue. If supplies are not being delivered to the regimental bivouac by the trains of higher echelons the first question that arises is, "How many trucks are required for Class I supplies?" This is determined quickly as follows:

$$\text{Ration trucks} = \frac{\text{strength of regiment X 5}}{\text{truck payload in pounds}}$$

$$\text{Forage trucks} = \frac{\text{No. animals X 12 (X 2 if hay is issued)}}{\text{truck payload in pounds}}$$

Sometime after 8:00 PM S-4 departs from the rear echelon with sufficient vehicles to carry all expected supplies plus one additional vehicle, if available, for unexpected supplies and to take care of a breakdown if it should occur. Upon reaching the supply point the army troops thereat load the regimental supplies on the empty vehicles. On returning to the rear echelon, S-4 immediately sends hay to the horse troops and then unloads and sorts the other supplies into troop issues in accordance with that day's troop strength reports as given in the daily telegram. Issues are made direct to troop kitchens on their return to the rear echelon from feeding breakfast.

Class II—All supplies of clothing and organizational equipment are obtained by requisition through regular supply channels. These supplies when received, are normally issued to the regiment at the supply point from which the regiment receives its supplies. S-4 issues these supplies at the same time and in the same manner as for Class I supplies.

Class III—The daily consumption of gasoline by a reconnaissance regiment will vary within wide limits. This variance is due entirely upon the operations that the regiment is called upon to perform. The estimated gallons of gasoline that the regiment requires to replace its daily consumption is given to the higher headquarters in the daily telegram.

Gasoline and oil supply to the troops is accomplished by sending the gasoline and oil trucks forward with the rations. In the regimental train chart it will be noted that the regiment has eight gasoline and oil trucks. Each of these trucks carries 60 gasoline drums of 10-gallon capacity each, and in this regiment 100 gallons of oil. Other vehicles of the regiment carry a total of 460 drums of gasoline as an extra supply for the vehicle on which each of these drums is carried. There are 480 drums of gasoline in the gasoline train of the regiment. Therefore, there are sufficient drums available in the gas and oil sections to exchange full drums for the empty ones in the troops. The exchange is accomplished by having the gasoline and oil trucks of Troops "E" and "F" plus one gasoline truck from the RSO Section refill the 2d Squadron, while one truck refills Headquarters Troop and the balance go to Service Troop. The empty drums are then sent to the gasoline supply point for refilling or exchange. If additional gasoline is required by the reconnaissance troops it is supplied upon return of this train from the supply point.

Class IV—The main supplies of interest in this class are motor maintenance supplies. These supplies are obtained either on requisition or work order. Invariably the part required to repair the vehicle is classed as an emergency. This is true in the sense that any vehicle not in running order tends to immobilize the regiment. Therefore supply of repair parts for motor maintenance is accomplished upon call. The Regimental Maintenance Section works in close coöperation with the Regimental Supply Section to obtain these parts. A limited amount of essential spare parts is carried on each of the maintenance trucks. As these spare parts are consumed the Troop Maintenance Section notifies the Regimental Motor Maintenance Platoon, which replaces the item from its supply, if available. Daily, or more often if necessary, the motor supply corporal of the Maintenance Platoon furnishes the regimental motor supply sergeant with a list of spare parts used and of any other parts required. The parts are then obtained direct from the service maintenance company charged with the supplying of these items to the regiment.

Signal supplies are obtained on requisition. The Communications Officer keeps the Regimental Supply Section informed of his needs in order that communications may be kept in operation. These supplies are furnished as quickly as available. All communication supplies and parts are issued to the troops through the Communications Officer.

The other Class IV supplies are obtained on requisition through the regular channels and issues are made by S-4 direct to troops.

Class V—Ammunition supply is a major problem. However, with the allowance of six ammunition trucks for the cavalry regiment (H & Mech) in the new Tables of Basic Allowances the problem has become lesss acute. These six trucks can carry a day of fire for the guns of the regiment. Notes on FSR—administration state, "The ideal situation is to have at all times within easy access from machine gun positions an amount of ammunition equal to the expenditures to be made from that position plus the prescribed loads of the unit ammunition vehicles." If and when this regiment is really called upon to fight these vehicles can meet the ideal situation only if the supply impetus from the rear makes ammunition available within easy access to the regiment. Prescribed ammunition allowance of the cavalry regiment (H & Mech) exceeds 600,000 rounds. However, the cavalry regiment (H & Mech) is primarily a reconnaissance regiment and under normal operations replacements of ammunition will be accomplished each night by sending the required amount forward in the combat trucks and/or in the kitchen trucks. The troop ammunition expenditure reports are made to the Regimental CP at 4:00 PM before the rations are sent forward. If necessary

these expenditures are replaced at once, otherwise when the combat trucks and/or the kitchen trucks go forward to the troop bivouacs they take the necessary replacement ammunition to their troop.

S-4, upon receipt of the ammunition expenditure reports from the troops, consolidates the regimental report and forwards it to the higher headquarters in order that the regiment will receive additional credits of ammunition at the ammunition supply point. Each night, at the designated ammunition supply point, S-4 draws against the regimental credit sufficient ammunition to replace all expected expenditures within the next twenty-four hours.

It is attention to details and daily routine of operation plus a thorough knowledge of the supplies within the regiment that makes a system of supply operate smoothly. Particularly in the field, supply must function like a well oiled and synchronized machine. To accomplish any plan of supply in the field successfully one bit of information must be available to the S-4; that is, the location of the supply point where he is to draw supplies. If this is not available he must go to the proper headquarters and obtain this information. Frequently during the Louisiana Maneuvers this information was lacking to the regiment due to the rapidly changing situations. Sometimes the opposing forces were occupying the very spot where the supply point for the regiment had been designated. When these events occur higher headquarters must be notified in sufficient time to change the supply point before the supplies arrive. If this is done and the supply points are known the routine of supply described will operate successfully.

To reiterate the 4th Cavalry supply plan. It is as follows:

1. Preparation of supper in rear echelon.
2. Utilizing marmite cans which have three inserts to carry supper forward to the troops for feeding.
3. Cleaning all cooking utensils before going forward to feed the troop in order that breakfast may be prepared with the minimum of delay and noise and permitting additional water to be carried.
4. Kitchen trucks when going forward to feed the troops go first to the Regimental CP and check upon the exact location of their troop CP before proceeding to troop areas.
5. Troop kitchens remain at troop bivouac to feed breakfast and issue lunches before returning to the rear echelon.
6. When the kitchen truck returns to the rear echelon the troop morning report is sent to the Adjutant.
7. S-4 normally makes issues at the rear echelon for all classes of supply except for Class III (gasoline and oil) which are issued direct to troops wherever they may be located.

It must be borne in mind that if troops can be fed in the forward areas it should follow that other supplies can be furnished at the same time and in the same manner and to the same extent as rations.

New gasoline burning field range

Supply of a Horse Regiment

By S-4

EDITOR'S NOTE: *This is the third of a series of articles on this subject.*

IT was a good thing S-4 had been able to get to bed early and sleep well, where we left him at the close of our last installment. At about 3:00 AM a staff officer from division arrived at the regimental bivouac bringing orders and directions which served to change the regimental commander's plan of action for the next day.

The division mission had been changed by Army and this change required that the regiment change its direction of advance marching to a river line approximately twenty miles distant, where it was to hold an extended front along the river until the arrival of the division under cover of darkness late that night (Wednesday-Thursday). The division reconnaissance squadron would be operating beyond the river line after 6:00 AM the next morning and would keep the regimental commander advised of any developments in the enemy situation.

After a map study the regimental commander decided that because of the poor road net in the direction of advance the regiment would march as two detachments upon its departure from the present bivouac; thus considerable distance would be saved for one portion of the regiment. The decision was that one detachment would consist of a reinforced squadron, the other the regiment (less). S-3 immediately designated the 1st squadron as one detachment; to be reinforced with:

One platoon of heavy machine guns.
One platoon caliber .50 machine guns.
One section of the scout-car platoon.
One section of the motorcycle platoon.
One pack radio set.
Certain other personnel and transportation from headquarters troop as listed in Table of Organization 2-12.

Under these circumstances what should be the first consideration of S-4? Do his previous recommendations to the regimental commander for tomorrow's march, which have since been issued as orders, apply? In all respects, except possibly one, they do: the regiment now has a holding mission, and to accomplish its mission it may have to fight at any time. Is this combat so probable that S-4 should recommend all riflemen carry the extra bandoleer of ammunition upon departure in the morning? A consultation with S-3 will help; to learn all that is known of the enemy situation, and also what S-3 thinks about carrying extra ammunition on the horses all day. Being properly imbued with the belief that the horses should not carry any excess weight unnecessarily, these two officers decide between themselves that the extra ammunition should be carried in the trucks. Hence S-4 does not change his recommendation to the regimental commander, and no "change in orders" to the troops is necessary in this respect.

The next consideration is to make the arrangements necessary to enable the S-4 of the 1st squadron to handle his individual problem of supplying that squadron while it is separated from the regiment. While early combat tomorrow is not probable, still it is always possible, and should it develop, then the squadron S-4 must have the required supplies and means of their transportation under his control. Table of Organization 2-12 informs us by "Note" that certain transportation will accompany a detached reinforced squadron. This note prescribes six trucks of the regimental train; the two trucks allotted to each of the rifle troops of the squadron. Our S-4 is a practical supply officer. He knows that rations, grain, gasoline, oil and ammunition for the reinforcing elements attached to the squadron must be transported on the squadron train. Is there a more practical way than the one prescribed by the note to the table of organization?

Following the prescribed method will result in division of rations, grain, gasoline, oil and ammunition pertaining to the reinforcing elements on six different trucks. Also the cantle rolls of the mounted men should be carried on trucks: no sound reason exists for requiring the horses to carry this extra burden. The result will be that the greater portion of the supplies and cantle rolls of these elements will not be where wanted when wanted. Instead they will have to be collected, if possible, at the time needed. And there is the further problem of getting these supplies onto the troop trucks in the first place: a mean job at best. Of course S-4 can leave it all up to the squadron S-4 if he is that kind, but instead he takes seriously the maxim that "a good staff officer assists the staffs of lower echelons."

S-4 solves this very practical problem by attaching one additional truck (making seven in all) to the 1st squadron. Depending on his relations with the regimental commander he makes this decision himself, or submits it as a recommendation. Either way, a practical regimental commander will approve the idea. Where will the extra truck come from? Both the machine-gun and the special weapons troop have two combat "ammunition" trucks. S-4 takes one of these trucks from the machine-gun troop. That troop has a troop headquarters ammunition pack section consisting of twelve packs; its truck ammunition loads are all of one classification; it can better serve the troop (less one platoon) in

combat than could the special weapons troop under similar conditions, hence the truck should come from that troop.

Though it is the "middle of the night," immediate action is necessary if the regiment is to march at daylight. S-3 has been busy and the squadron commanders are at the regimental CP getting their orders. Likewise the troop commanders of headquarters, machine-gun and special weapons troops are there. S-4 informs these troop commanders that machine-gun troop will furnish the extra truck, and directs that troop commander to have the truck pick up rations, grain and ammunition in required quantities from the other two troops according to the attachments from those troops, and to spot the truck at a designated point for loading of cantle rolls in the morning, if they cannot be loaded at the same time supplies are picked up. Orders to the driver relative to where and when to join the other trucks of the 1st squadron will be issued by the truckmaster.

What has S-4 gained by his practical solution, and flaunting of the Tables of Organization? The reinforcing elements will most probably be marched and employed by the squadron commander as separate units; not attached to any one of the rifle troops. It is true their rations will have to be cooked by the rifle troops, but which one, or two: foresight cannot answer this question, now. The load for all these elements is concentrated on one truck and is not widely separated. Rifle troop trucks are not overloaded, nor does some rifle troop have to march with cantle rolls on the saddle in order to carry the extra load of supplies in their truck. Ammunition under this condition must be considered the prime, or principal, load, and the truck must be loaded so this will be readily accessible. From a practical point of view S-4 is one up on the brass hats and it's better than an even bet that the personnel and animals of the reinforcing elements will feed better; have all their own property when it's over; and be better served in combat than if the prescribed method had been followed.

Prior to the departure of the 1st squadron commander from regimental headquarters S-4 requests him to send his squadron S-4 to headquarters as soon as convenient. He employs the time until the arrival of that individual to advantage: digs the regimental supply sergeant out of bed, informs him of the attachments to be made to the 1st squadron, and directs him to go to the machine-gun troop and supervise the collection and loading of rations, grain, gasoline, oil and ammunition from the three troops furnishing detachments. This detail might have been left to one of the troops, but by using one of his own men—one who has experience—S-4 insures proper amounts of supplies and that the components of the ration "donated" by each troop will result in a full well-balanced ration. The regimental supply sergeant has enough authority as well as experience to do this job better than it would probably be done were it left to one of the troop non-coms. Next he rouses the regimental transportation officer, informs him of the changed plans, and gives him directions as to personnel and vehicles to accompany the 1st squadron.

Upon the arrival of the squadron S-4 he furnishes him with all the information in his possession: trucks which will be available to him; previous plans as to supply which still govern, i.e., planned method of delivery of supplies, location of railheads and truckheads, restrictions on operations of convoys, location of the Army ammunition depot, and credit of ammunition therein; in short, all information necessary to enable the squadron S-4 to function effectively should the squadron become detached from the regiment for a protracted period. He learns from the squadron S-4 the time and place the truck from the machine-gun troop will join the squadron train: later this information is given to the transportation officer. He "advises" the squadron S-4 that provided the regimental commander does not direct otherwise he intends to march the regimental train (less trucks detached) grouped under his control, by bounds in the rear of the regiment, ammunition trucks in the lead: a hint to the junior staff officer. He informs him that instructions as to method of delivery or obtaining supplies Wednesday night will be sent to him through command radio channels or messenger, and that in the event a resupply of ammunition becomes necessary during the day he will dispatch trucks direct to the Army ammunition depot.

By the time S-4 has accomplished the details outlined above it is time to eat that good "hot" breakfast provided by thoughtful troop commanders in the field for their men. Also at the same time he is issued the daily waste of a "cooked" lunch, and his two cans of the Type "C" ration. At breakfast he informs the transportation officer of the formation and point where he wishes the regimental train (less detached trucks) formed, fifty minutes after the departure of the regiment. He is careful to indicate that he wants all the ammunition trucks placed ahead of the kitchen trucks in forming the train column. If S-4 or the transportation officer knows at this time the order troops will march in the regimental column, the order in which the trucks should be formed is known. If they do not have this information it is the business of the transportation officer to find this out when the regiment marches. It may look like a small detail, and it is, but when trucks are needed they may be required in a hurry. Having them in the same order in which the troops are marching helps tremendously in getting them to the right troop without confusion and delay.

S-4 contacts S-1 (adjutant) and gives him information to be sent to division with the daily report of strength in men and animals which the adjutant will forward. There has been no expenditure of ammunition, and it is probable the gasoline and oil which will be consumed will be normal. The adjutant's report will include the statement: ammunition required, none; gasoline, ...

gallons; oil ..... gallons. At division the division Adjutant General will transmit, through G-4, to the Quartermaster, a copy of this information. Based on this information the Quartermaster will deliver supplies to the regiment.

After breakfast S-4 has a few minutes to contemplate his job for the day. He studies the route of march on the map; alternate routes around critical points such as bridges or defiles; also routes to the rear, particularly those to the Army ammunition depot from different points along the route of march where branching roads may offer a saving in distance. Knowing the rate of march the regiment will use, S-4 plans in advance the bounds for the train. He does not want the train to move up to less than a mile from the tail of the regiment at any time. From his map he first picks out desirable halting points for the train. He wishes to halt the train with open column distances between trucks at points where there is the most cover along the route; also if possible with the leading truck just short of crossroads or road forks leading to the rear. These offer a turnaround in the event of necessity. It goes without saying that there will not be any place on the route where all trucks can halt with open column distance and be under cover from overhead observation. But truck drivers are trained that upon halting they will move independently to the nearest overhead cover, and this detail is one which must not be overlooked. The trucks will spend a considerable time at each halt and it is essential they be and remain under cover. Based on the time the tail of the column will pass the most desirable halting points along the route, S-4 indicates to the transportation officer, on that officer's map, the points where the train will be halted and the time it will remain halted at each point before resuming the march to the next. As it stands, S-4, in the event he is called up or leaves the train for any reason, will know right where his train is all during the march, and will be able to put his finger on it at any time. He is using foresight and he governs his bounds so that he will never jam the tail of the regiment nor will his train be too far to the rear. S-4 varies his bounds between five and seven miles; thus he reduces the number of bounds; keeps his trucks under cover most of the time; and is never more than twenty minutes at normal marching rates in rear of the regiment. Having a radio in his command truck S-4 can move the train forward at increased speed at any time a message is received indicating this to be desirable.

Both columns of the regiment moved out on time followed by their trains one hour later. The march to the river line was without incident in either column. Prior to the last hourly halt before reaching the river the regimental commander sent a radio to S-4 directing that extra ammunition be issued to rifle troops during that halt. S-4 conducted the three ammunition trucks of the rifle troops forward personally, closing on the regiment just prior to its halting; trucks were reported to troops in the column and extra bandoleers were issued to all riflemen, who slung them over their shoulders. During this halt S-4 learned the plan of the regimental commander for disposition of the troops and the point where he wished the train held. Messages which had been received from the division reconnaissance squadron indicated that an enemy force would reach the river line in the late forenoon or early afternoon. Chances for ammunition expenditure by troops looked good. Shall S-4 send for replenishment of ammunition now; ask division to send forward a replenishment, or just wait and let the situation develop? As said before, S-4 is practical. If he waits and at any time in the future the troops need ammunition which he cannot give them, he will be waiting for assignment to some non-combatant job. Looking at the problem of the division quartermaster squadron with experienced eyes he knows the division is well to the rear; the division train probably still farther to the rear. To get ammunition up, trucks, will have to pass marching columns, and there is a good chance it would take longer than it would for him to send direct to the Army depot for it. The roads in rear of the regiment are clear of columns and his trucks can make good time; his truck drivers know the road now too. So S-4 decides that instead of getting a replenishment through the ordinary means of movement forward by the division train he would rather go get it with his own trucks in this instance. Accordingly he makes such a recommendation to the regimental commander, who responds, in effect, "Go to it."

In carrying out this order S-4 intends to bring forward all the ammunition he can; not just a replenishment of the rifle troop ammunition. He directs the three truck drivers to assemble their trucks under nearby cover, and the personnel riding on the trucks transfer the ammunition remaining on two of the trucks to one. The remainder of the loads on these two trucks can be dumped on the ground, partially loaded on the one truck, or transferred to their respective troop kitchen trucks on the road, or can wait for the kitchen trucks to come up. Another alternative is to send the loads of grain and equipment all the way back to the Army depot and back again, thus reducing the amount of ammunition which can be brought forward. That is the situation: When you need ammunition, you must manhandle, dump, or transport tons of supplies and equipment; which, in the writer's opinion could be avoided if we were provided with an ammunition train consisting of smaller trucks used for that purpose only. In this case S-4 transfers the supplies to the kitchen trucks of the two troops: at least all troops will still have their own.

The two trucks are dispatched to the Army ammunition depot with written requests for the amounts and kinds of ammunition desired: rifle, machine-gun (both calibers), and mortar. Truck drivers are given detailed instructions as to routes and speeds; provided with at least one map; directed that on the return trip they will march with not less than 500 yards between trucks; and

given a definite point to which to report—in this case S-4 designates a point on the road where a windmill and barn make an easy landmark which the drivers can see from where they now are. S-4 will see that either he or a guide will meet them at that point on their return.

The next job for S-4 is to get his train into the location designated by the regimental commander, and see that it is concealed. After that he must learn the dispositions of the troops and where the squadron and troop commanders are located. He must plan for the movement of kitchen trucks to mess locations for supper, and the receipt and issue of supplies tonight. There might be a fight which may make all plans go haywire. Okay! According to plan the troops will be disposed at dark with two rifle troops, one platoon of machine guns, and one platoon of caliber .50 guns along the river line, the remainder of the regiment (less the 1st squadron, reinforced) in reserve centrally located under cover. The regimental commander directs that the troops along the river will be messed after dark; those in reserve two hours before dark (5:00 PM); troops on the river to feed machine-gun and special weapons troop personnel in their respective sectors; ammunition trucks to be released to troops as soon as replenishment ammunition is received.

S-4 contacts the 2d squadron S-4 and informs him the time and place the two front-line troop kitchen trucks will be released to him to be conducted to troop mess locations. He advises him that he will handle the truck of the troop in reserve. He then returns to the trains and gives instructions to the mess sergeants to insure the preparation of meals at such time that when the trucks move forward the meal will be ready to serve. Machine-gun and special weapons troops are directed to turn over rations to the two front-line troops to feed their personnel along the river. When the two trucks previously sent after ammunition return, loads are retransferred and again troop trucks are loaded with their own supplies and ammunition. As soon as this is done S-4 gives the transportation officer instructions to conduct the ammunition trucks forward and turn them over to the squadron S-4 and machine-gun and special weapons troop commanders.

The next problem is the receipt and issue of supplies tonight. Selecting a point to the rear where he can divert supplies to the 1st squadron, S-4 sends a radio through command channels to division requesting that supplies be delivered to him at that point at 9:30 PM. He must assume his request will be complied with and proceed on that basis. The point S-4 selects is approximately ten miles to the rear, and he now sends a message to the 1st squadron directing that a convoy of five trucks report to that point at 9:30 PM to draw supplies. S-4 estimates that he can handle the supplies for his part of the regiment with nine trucks and he sends instructions to the troops that trucks will be returned to his control at 8:00 PM as follows:

Hq Tr	2 trucks
MG Tr	2 trucks
Sp W Tr	3 trucks
Reserve Tr	2 trucks

each truck to be accompanied by an enlisted detail of two men. By taking these trucks S-4 has left the trucks of the front-line (river line) troops with them; they will have a hard job feeding their men and animals and he gives them all the help he can. If the troops of the 1st squadron are similarly disposed the squadron S-4 can only leave one truck with each front-line troop. But that must be his problem. Because of the bulk of hay S-4 cannot move his supplies with fewer trucks, and even at that he may have to make a double trip with some of the trucks. The problem can be solved with fewer trucks when necessary, simply by doubling trips; the haul is not a long one. But so far as S-4 can visualize now this appears to be the soundest solution to him. Loads of all trucks will have to be dumped before they go to the rear, and the fewer number he can use over a long period of time the better: just that much quicker can they be reloaded with their normal loads and be ready to move if the situation requires.

S-4 can feel that he has laid his plans well so far as he can visualize the situation. Many things can and may happen to wreck these plans before night, but at least he has a start—he will be able to meet any necessary change with his agile cavalry mind.

★ ★ ★

Time and opportunity may help to retrieve other misfortunes, but where forage and provisions have not been carefully provided, the evil is without remedy.—VEGETIUS.

Scout Car - Horse Portée Action in the Prompt Reduction of Road Blocks

By Captain Bruce Palmer, Jr., 6th Cavalry

THE following small unit scout car–horse portée action has to do with (1) Situations in which one, and not more than two, reinforced portée platoons are attached to a scout car troop operating in an assigned zone; and (2) Situations in which a scout car troop and a horse portée troop are operating in the same zone together. In the latter case, however, the Regimental Commander has attached a string to the horse troop, in that a limited number of reinforced portée platoons can be committed to action at one time by the subordinate commander.

2. Organization of Reinforced Portée Platoon.

The desired organization for the reinforced portée platoon in this type of action should be a small, maneuverable portée unit on the road, which can detruck and go into combat in the minimum time. One organization shown below, which can be completely transported in a total of five (5) trailers, has been very successfully employed by the Sixth Cavalry.

Trailer No. 1. Forward bay–three riding horses completely saddled and bridled; platoon leader's horse, platoon sergeant's horse, and an orderly-messenger's horse.

Rear bay–two pack horses with pack saddles on their backs; these two animals pack the two LMG's of the LMG squad. Hangers with side loads in place are hung on the sides of the trailer until horses are detrucked, when hangers are placed on pack saddles in a few seconds.

Trailer No. 2. Six riding horses for the six men of the LMG squad; these horses are completely saddled and bridled. LMG squad consists of 1 Corporal (also acts as a gunner), 1 gunner, 2 assistant gunners, and 2 drivers (drive two gun-pack horses).

Trailer No. 3. Six riding horses for the rifle squad composed of 1 Corporal and 5 riflemen; all horses are completely saddled and bridled.

Trailers No. 4 and No. 5. Same as Trailer No. 3.

This results in an organization of 1 platoon leader, 1 platoon sergeant, 1 orderly-messenger, 3 six-man rifle squads, and 1 six-man LMG squad, or a total of one officer, and 26 men. A total of 29 animals (27 riding and 2 pack horses) are carried in a total of 5 trailers.

At least one, and preferably two, motorcycles with sidecars, or bantams, should be assigned to the portée platoon; two solos for messenger and traffic control purposes should also be assigned. If not available from Service Troop, these vehicles should be assigned from the motorcycle (bantam) troop.

3. Position of Horse Platoon Leaders.

In Situation (1) above in which one portée platoon is attached to the scout car troop, the horse platoon leader should ride with the scout car troop commander in his command car, while the platoon sergeant marches the portée platoon in rear of the scout car troop headquarters. The platoon sergeant rides in a m/c with sidecar, or bantam; the second m/c with sidecar, or bantam, is for the use of the platoon leader.

In Situation (2) above, in which a scout car troop and a horse portée troop are operating in the same zone together, a horse platoon leader accompanies the scout car platoon leader of each advance scout car reconnais-

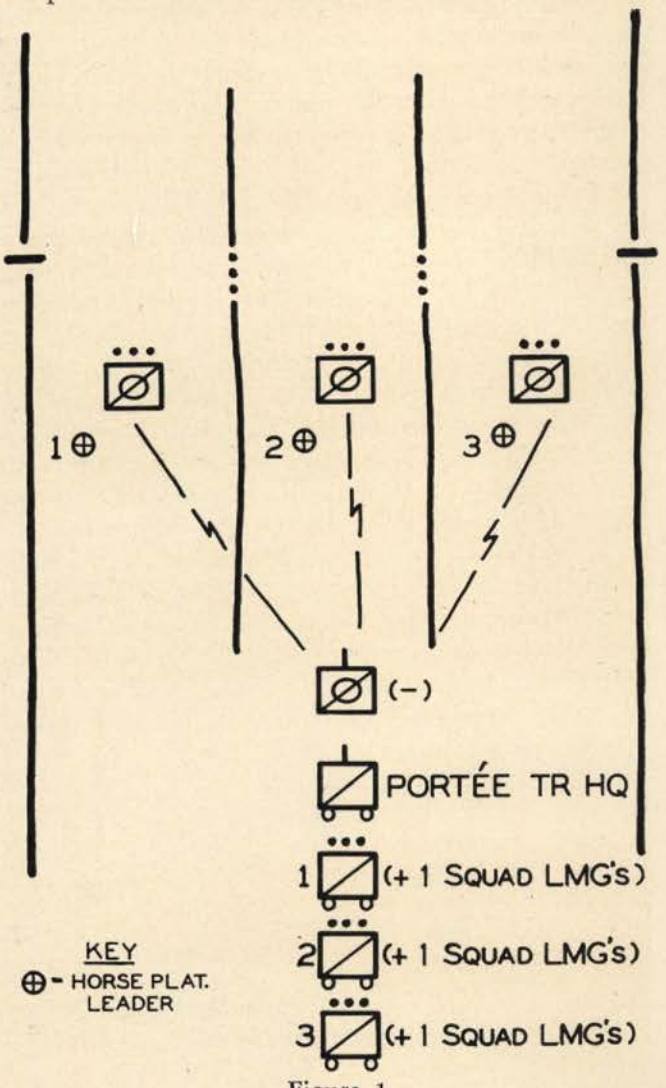
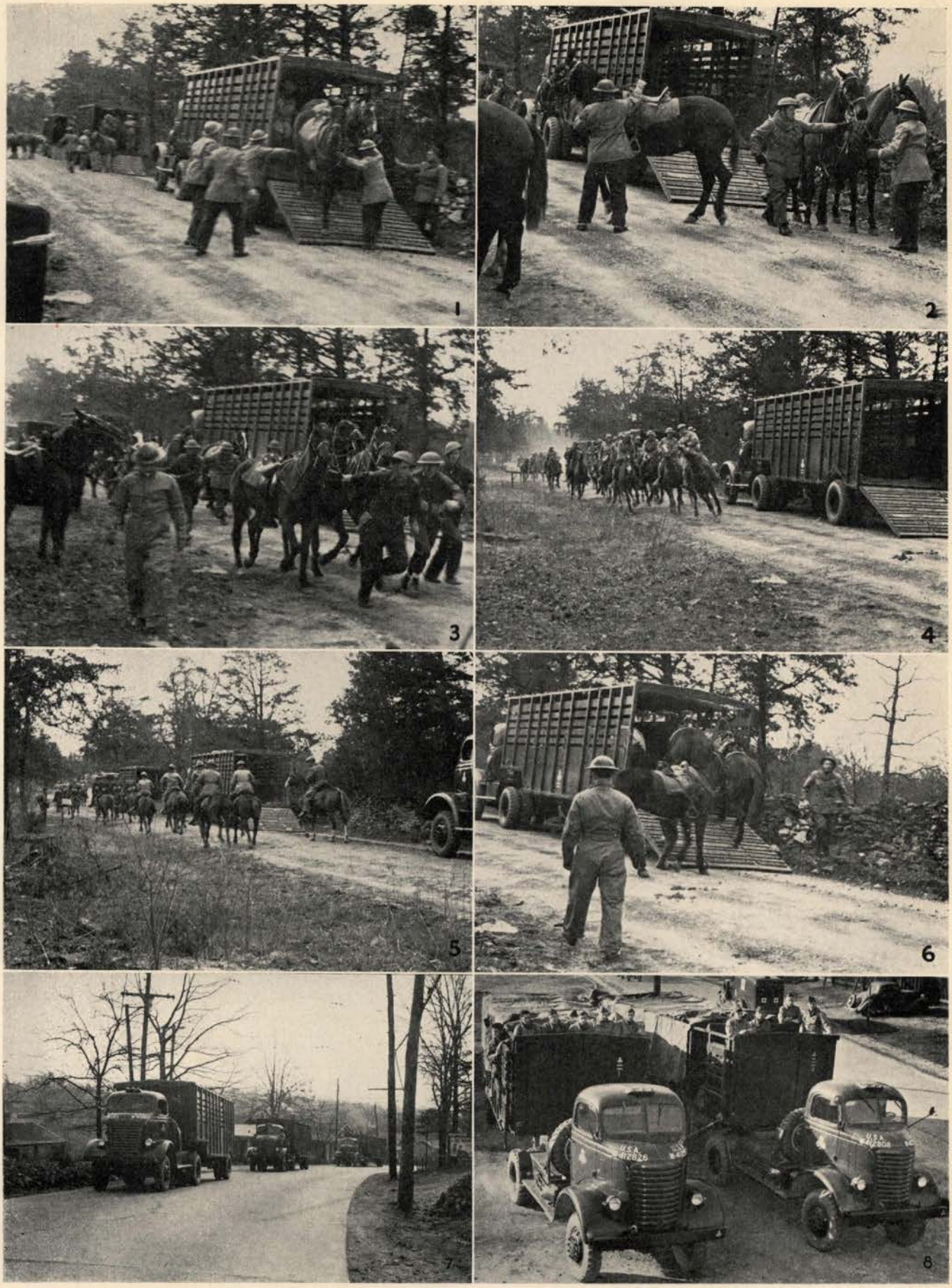


Figure 1

Note: Each horse platoon (reinforced) is used only in the scout car platoon zone in which its own platoon leader is operating. The Regimental C.O. specifies that not more than two horse platoons can be used at one time.



1—Horses (saddled and bridled) of a six-man rifle squad detrucking. Note handlebar of solo M/C in left foreground. 2—Same squad has finished detrucking. 3—Rifle squad assembling prior to moving out. 4—Rifle platoon (reinforced with LMG's) moving away from the trailers at a gallop. 5—Same platoon returning to trailers to load again. 6—Horses (saddled and bridled) of a rifle squad being loaded again. 7—Loaded trailers moving in convoy. 8—Two loaded portée squads. Note M/C with sidecar in rear.

sance patrol, usually two, or three, in number. The horse platoons of these forward platoon leaders march with the horse portée troop under the supervision of the respective platoon sergeants. These portée platoons are employed only with the forward scout car platoon with which their platoon leader is riding. (See Figure 1.)

4. Order of March.

a. Situation 1.

The order of march of the scout car troop's main body will be:

Advance Guard.
Scout Car Troop Headquarters (preceded by m/c section).
Portée Platoon.
Combat Trains.
Maintenance Section (scout car troop).
Rear Guard.

b. Situation 2.

In this case, the horse portée troop can march with the scout car troop's main body in the same relative position as occupied by the portée platoon above. The horse troop commander can accompany the scout car troop commander in his command car.

5. Security and March Outposts.

a. Reserve scout car platoon, or platoons, furnish march security, both advance and read guard. For necessary flank guards, scout car troop headquarters can use any available scout cars, bantams, or cycles.

b. At a halt, advance and rear guards automatically establish march outposts. The portée unit, troop or platoon, sends dismounted riflemen to either side of the column for flank security. Bantams from either scout car or horse troop can furnish additional flank security.

c. Distances between vehicles is usually 100 yards or more, in order to present poor targets to combat aviation.

6. Reconnaissance.

a. Situation 1.

The scout car platoon leaders of advance scout car patrols reconnoiter en route road, bridge, and underpass conditions as they affect trailers particularly, turnarounds for horse vans, good detrucking areas, and good overhead cover for trailers. When resistance is met, the scout car platoon leader, of course, reconnoiters for routes around the resistance within his zone, so that his platoon can continue its mission of reconnaissance. When the terrain is unfavorable, however, for example: the scout cars are held up at a stream crossing and there are no other bridges over the water obstacle, then the scout car platoon leader reconnoiters for routes usable by horses. When the decision is made to employ the portée platoon in a scout car platoon zone, the horse platoon leader immediately goes forward at high speed in his sidecar, or bantam, for his own personal reconnaissance. He should confer with the scout car platoon leader, determine what has already been reconnoitered, and plan his attack in coördination with the action of the scout cars.

b. Situation 2.

Reconnaissance, as it particularly affects the employment of the portée platoon, is conducted in the same manner as above, except that in this case, the horse platoon leader, being right with the advance scout car platoon leader, has the benefit of what reconnaissance has been completed prior to meeting resistance, and can complete his personal reconnaissance with the minimum loss of time.

7. Bringing Trailers Forward.

a. After the decision has been made to employ the portée platoon, a solo messenger is immediately dispatched to meet the convoy and guide the trailers to a previously reconnoitered detrucking area over a previously reconnoitered route.

b. The scout car troop commander should send the portée platoon being used forward under the protection of all, or part, of the reserve scout car platoon, or if the scout car reserve has been committed to action elsewhere, should convoy the trailers forward with troop headquarters scout cars. In any case, the portée platoon itself is led by the platoon sergeant who has accompanied it all along.

8. Unloading Operations.

a. The horses are unloaded under the supervision of the platoon sergeant. The detrucking is protected by scout cars, bantams, and cycles.

b. The platoon leader (horse) can either join his platoon at the detrucking point, or send a guide back by bantam or motorcycle, to the platoon sergeant who can bring the platoon up mounted.

c. The reinforced platoon described above can unload, mount, and move off at a gallop in 1 minute and 40 seconds. It can load in 1 minute flat. This is with the help of van drivers in lowering and raising into position the heavy tail gates of the trailers.

9. Disposition of Trailers.

If good overhead cover is available and the situation permits, the trailer can be left in the vicinity of the detrucking area; otherwise, they must be sent to the rear to rejoin the scout car troop headquarters, or the rest of the horse portée troop, as the case may be.

10. Communications.

The portée platoon is not provided with a radio, and so when detrucked, it depends on visual signals and messengers. In order to coördinate the attack of the horse platoon and the scout cars, the scout car leader must be on the alert to detect the noise of firing which marks the beginning of the horse platoon's attack. The scout car crews must then be ready to cease firing when the attack goes through.

11. Action of the Scout Cars.

Scout cars support the attack of the horse platoon

with the fire of their machine guns, either on the vehicles, or on the ground. During the last phase of the attack, the scout cars must be prepared to close in and assist the horse platoon in mopping up the last enemy resistance.

12. Supply of Ammunition to the Horse Platoon.

To resupply the horse platoon in action, scout cars and bantams can carry ammunition as far as possible toward the flank around which the horse platoon is operating. Men or horses carry the ammunition the rest of the way.

13. Illustration.

a. This simple tactical situation, illustrated by a schematic diagram (Figure 2), will serve to show the tactical functioning of a reconnaissance detachment composed of a scout car troop with a reinforced portée platoon attached (Situation 1 above), operating as a part of a Corps Cavalry Regiment moving on a mission of offensive reconnaissance. Attachments of antitank and P & D elements may, or may not, be made to this detachment according to the specific needs of the situation.

b. In this situation, the reconnaissance detachment has been assigned the following mission: To reconnoiter to the north between Route 1 and Route 3, both inclusive, with particular attention to the bridges at A, B, and C, and the high ground in the vicinity of G. The stream shown is unfordable.

The scout car troop commander assigned a scout car platoon, or section, to reconnoiter each route, holding

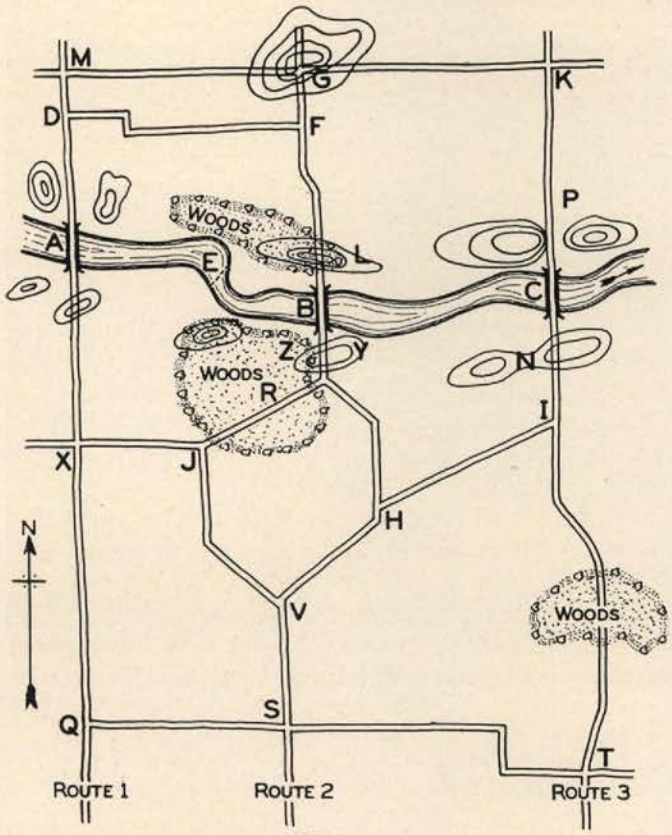


Figure 2

the remainder of his troop and the portée platoon in reserve. The portée platoon leader accompanied the scout car troop commander in his command car. The portée platoon sergeant rode in a sidecar, or bantam, with the trailers; another sidecar, or bantam, was available for the horse platoon leader. Reserve scout cars furnished march security for the scout car troop headquarters, portée platoon, and trains which marched as a unit along Route 2 by bounds, ten minutes behind the advance scout car patrols.

At Cross Roads S, the scout car troop commander learned from air reports that bridge A had been blown up and made unusable by the enemy, that bridges B and C are intact, and that small enemy motorized units are moving towards these two bridges. The scout car patrols are ordered to accelerate their pace towards the crossings, while the troop commander moves to Road Junction V, prepared to employ the portée platoon to secure the crossing, either at B or C.

The scout car platoon on Route 1 reports that it has reached bridge A and that the enemy has destroyed the center supports only, leaving the abutments of this concrete bridge undamaged. The platoon also reports a small enemy infantry detachment holding the far bank; and that it will keep this enemy under observation.

The platoon on Route 3 reports that it has arrived to find bridge C blown out and dropped into the river below. This was an old steel truss bridge and did not take much preparation or effort to demolish. The abutments, however, are still OK. This platoon reports that it is keeping the enemy, an armored car platoon, under observation on the far bank.

The platoon on Route 2 reports that it has arrived at bridge B, but that the enemy has blocked the bridge and is trying to blow it up. The platoon also reports that it has received antitank fire, but that it is bringing all possible fire to bear against the enemy to prevent the demolition of the bridge. Further, the platoon reports a good detrucking area and overhead cover for trailers near R; and that the best route forward is via Road Junction V and Road Junction J.

The troop commander decided to use the portée platoon to seize bridge B. The horse platoon leader in his sidecar, or bantam, immediately went forward at high speed to the scout cars to get the reconnaissance data already obtained by the scout car platoon leader. The troop commander then radioed back to the platoon at B that he was sending the reserve scout car platoon forward to support the fire attack on the bridge, and that he was convoying the trailers forward to the vicinity of R with the scout cars from troop headquarters. The scout car platoon leader immediately dispatched a solo motorcycle to meet the convoy and guide it to point R.

The horse platoon leader upon arriving at the scout car position, conferred with the scout car platoon leader as to the immediate situation and then began his personal reconnaissance of the area in search of a suitable crossing for his platoon. Meanwhile, the scout cars

were firing on the bridge from turret defilade in the vicinity of Y; dismounted machine guns in the woods near Z were also bringing fire on the bridge.

The horse platoon leader returned from his reconnaissance to R to find the platoon sergeant unloading the horses. The platoon leader conferred briefly with the scout car troop commander, stating that he wished to cross both rifle and LMG elements of his command in the vicinity of E and attack the enemy right flank and rear. The troop commander gave his OK and the horse platoon mounted-up and protected by a small covering force galloped off through the woods.

The troop commander then left his CP in the woods near R with the vans and went forward by motorcycle to Y. He instructed his executive to contact him through one of the forward platoon radios or by motorcycle messenger. Near Y, the troop commander informed the two scout car platoon leaders of the horse platoon's plan of attack and instructed them to cease firing when they heard the fire of the horse platoon, and prepare to rush the bridge when the attack went through.

Assuming that the attack was successful, the troop commander crossed the entire reconnaissance detachment over bridge B, loaded the portée platoon up again, and continued his mission of reconnaissance of the zone assigned and the high ground at G. Meanwhile the Regimental Commander had sent a detachment from the motorcycle (bantam) troop to hold bridge B, and for future use at bridges A and C as he then desired.

THE RADIO-SHOP TRUCK—6th Cavalry

—Photo courtesy Major J. H. Phillips, 6th Cavalry.

This truck has been so outfitted that there is a place provided for the repair of signal equipment, bins for the transportation of the allowances of signal supplies and space left for the charging of the batteries of radio equipped vehicles. The accompanying picture shows the details of the truck

The Selectee Slant!

By Privates Fred Riebe and Paul Guten, 11th Cavalry

OUR transition from civilian to a cavalryman of the Eleventh Cavalry Regiment is slowly drawing to a close. The end of a training period, which we entered as mere selectees and will be turned out as soldiers, well drilled in fundamentals of Cavalry drill and combat, is approaching. From then on down the stretch it will be up to us to make the grade.

From the moment we reported at the induction center in Milwaukee until we finally arrived at Camp Seeley, California, everything was more or less a nightmare. While at Camp Grant we remember only the endless lines and unending waits. The classifying of new men, the issuance of clothing, and the waiting around all day in the barracks surely wore on our nerves. However, now that we look back, it was the only efficient method of handling such a large body of men in such a short period.

When we did board the train for Camp Seeley, it is doubtful if any of us knew what lay ahead. Outside of knowing we were headed for the 11th Cavalry, our imaginative minds were creating fantastic pictures of life at camp. Most of us pictured our future home for the ensuing year as a replica of the famous Palm Springs summer resort, with everything from soup to pretty girls in bathing suits. Others, who had seen quite a few western pictures, came a bit closer on their imaginative forms of Camp Seeley. However, as to a definite idea, nobody was really positive. For most of us, our only previous connection with the Cavalry was in the rôle of a spectator at a Fourth of July parade.

The young man who had been bragging about belonging to the Cavalry unit of the Wisconsin National Guard was really the envied boy in our troop because of his previous experience. Our thoughts soon changed however, after the first time we saw him in the saddle. Some of the boys who had never been on a horse before did better than he.

After three days and two nights of the most nerve-wracking, monotonous train ride we had ever experienced, we finally arrived at our destination.

Our introduction to the 11th Cavalry and Camp Seeley was really a heartening and auspicious occasion. Five hundred and two young men stepped out of the train to be met by the martial strains of the Regimental Band and citizens of El Centro. From there we were transported to camp by truck. At the mess hall, we were treated to the most welcome coffee and doughnuts. And with the address of welcome by the commanding officer, Colonel Harold M. Rayner, we were ready to start basic training.

Pastern! Withers! Fetlock! Stifle! A million parts! So we thought the first day of our nomenclature of the horse. But in a surprisingly short time, we were speaking of a horse's physical make-up on equal terms with the Regulars, and with a full understanding of a Cavalryman's terminology of horses.

Along with the equitation instruction we soon became proficient in the use of the rifle, pistol and machine gun; knowing the nomenclature and being able to fire each with a marked amount of accuracy. Our main difficulty was not with the weapons or foot drill, or even the horses, but with the required formalities between enlisted men and officers. Extra duty soon clarified the situation for some of us!

Before we go further, we'll give a vote of thanks to the non-commissioned officers for their helpful information and assistance. Their friendliness smoothed out many of the bumps on the road to becoming a soldier. Before we were drafted we had heard of the aloofness of the officers—and we were greatly surprised to find it just another false rumor concerning the Army. It is true they demand a certain amount of respect but it is rightly theirs. Without these formalities many of us would take undue advantage of their leniency.

Since our induction into the armed forces we really have seen things happen from the ridiculous to the sublime. Men who, in civil life, were people of influence, and others who weren't as successful, trying to use their respective tactics of conquering the mysteries of the horse. The baker whose method of mixing flour and water didn't work so well on K.P.; the drapery salesman who has been draping from the cantle of the saddle for the last two months; the steward to a wealthy farm implement mogul trying to use the same manners on table waiting; all are now being molded into Army life. Today the very same men are beginning to function as a unit; each knowing his respective duties. The last seems to be the opinion of us recruits.

We certainly have had our adventures and thrills in our short period of two months in the Army, but we honestly and sincerely believe that the biggest thrill is in the transformation of ourselves into soldiers. Our old way of life and past environments have been forgotten for this one purpose.

Individualism of thought, opinions, and personalities have been dispensed with to form the smooth coordinated machine necessary to protect our homes and loved ones. One who has the type of home most of us come from prizes it as his most worthwhile possession. Parental love; sweethearts, livelihoods, have all been forsaken, although not forgotten.

Cavalry Medical Problems

By Lieutenant William G. Schmitz, Medical Corps

BELOW SEA LEVEL!

In the current expansion of the Army it is no novelty for troops to change station and find themselves in new, and, often, far less pleasing climates. For the 11th Cavalry, however, the recent shift from colorful Monterey peninsula, where climatic conditions were ideal, to the desert floor of a prehistoric ocean—and nearly a hundred feet below sea level—brought with it medical problems not usually found in such movements of troops.

Complications, in the form of mid-west selectees and remounts, have added to these problems.

The Surgeon

THE medical problems that confronted the 11th Cavalry upon its arrival at Seeley, California, last November were not unique; however, their solution may prove of value to another regiment if it were ordered to this vicinity.

Seeley, California, is located about 125 miles due east of San Diego, and about six miles north of the California-Mexican border. It is in below-sea-level country, the only source of water being from irrigation ditches. The original source is the Colorado River, and it is brought to this area by means of open canals and smaller, open ditches. As a result the water is grossly contaminated, especially with B. coli. Typhoid has occurred sporadically but there have been no epidemics in recent years because of the activity and supervision of the Imperial County Health Department. However, two problems immediately arose:

1. Camp water supply for men and horses.
2. Water supply while away from camp.

(1.) The camp water supply was solved by the constructing quartermaster, who installed the following system:

An eight-inch cement intake pipe was placed in the side of an irrigation ditch, and the water passed by gravity into a settling tank. This consisted of a thirty by fifteen foot cement lined tank, ten feet deep, covered with a board roof and screened on the sides. A series of baffle plates, similar to those used in a grease trap, were installed to purify the water by sedimentation. The water was allowed to settle in this tank for an average of sixteen hours, and was then siphoned from the tank and pumped under pressure through a filter composed of three feet of sand and gravel. The water was then chlorinated by adding a stock solution of H.T.H. (70%), by means of a pump. Experimentally, it was determined that if a concentration of two parts per million of chlorine resulted from the mixture, that the water was safe. This amount would leave a residual, in the distribution system, of 1/10 of 1 part per million, of chlorine. This concentration is not noticeable either by smell or taste.

(2.) Water supply on a maneuver: After several experiments by the Regimental Veterinarian, it was determined that on a march, in hot weather, the average need per horse per day may reach twenty gallons. The need per man per day for cooking, washing and drinking has been estimated as five gallons. It is easily seen, that a large amount of water would be needed daily for a squadron operating alone or reinforced. As long as we are near the irrigation ditches, there would be no trouble, as the Lyster bags could be used for the chlorination of water. As animal gastro-intestinal disease rarely occurs due to contaminated water, it would not be necessary to chlorinate their supply.

However, on a maneuver or operation south of this area, the irrigation system is soon left behind, and the country has no available water. Seven hundred and fifty gallon water trucks may have to be requisitioned in sufficient quantity, so that by making an average of three trips each to an available source, the daily water supply could be maintained.

The water in this area is of the type commonly called "alkali water." It is a hard water, difficult to make a lather with ordinary soap; but, its principal characteristic is that it causes dysentery. Our experience, both with the regular soldiers and selectees, has been that about thirty per cent of the men will be affected. Of this group, all, except one per cent, will recover in a short while and never be bothered again. The small remaining number never develop a tolerance and will have attacks every time they drink the water. The onset of the diarrhea is roughly three to ten days after the men have started using the water.

We have definite proof that the diarrheas are not due to local unsanitary conditions, to fly contamination, etc., as dependents living eight to ten miles away experienced the same conditions. A striking example of this was an enlisted man's wife, who drank bottled water for three months. She stopped using it due to the expense and a week after using local water, came down with an attack of diarrhea.

Weather:

On the desert, the winter months are deceptive. During the day, it will be warm and sunny, similar to the late spring weather in the middlewest. However, it is not unusual for a forty to fifty degrees drop in temperature to occur before seven p.m. This change necessitates close surveillance of the troops to prevent upper respiratory infections. Woolen clothes should be worn during the winter months, and the men should

be cautioned to wear jackets or mackinaws after retreat.

The average summer temperature ranges between one hundred and ten to one hundred and twenty degrees in the shade. Plans have been made to insulate our pyramidal tents. The model constructed consists of a burlap fly, strung on baling wire, which parallels all sides of the tent and is hung about eight inches away from the tent proper. This provides an air space between the burlap and the canvas, which we hope will act as an insulator, to reduce the inside temperature of the tent.

Salt Ration: Experience during the past few years has shown the value of supplementing the salt (Sodium Chloride) intake during hot weather, especially when associated with strenuous work. Heat exhaustion was prevalent in this vicinity among the utility workers until they took additional salt. After consultation with the local and state health authorities it was decided that during hot weather an additional six grams of salt would be needed. A problem arose as to how we would issue the salt. The tablets (ten grain) were out of the question, as we have no funds available for such an item, and the troops did not want to purchase them out of their mess funds.

The following scheme has been found to be practical. It has been tried on a few soldiers; but has not been instituted in the regiment at this time. A Lyster bag is set up outside of each mess hall and a noncommissioned officer distributes bulk salt. He pours one-half teaspoonful (two grams) of salt in the soldier's tablespoon. The soldier puts the salt in his mouth and washes it down with water from the bag. Occasionally a man will become nausiated; but this is so rare that it does not affect the method. The following graduated scale will be used: With a temperature of ninety degrees, one-half teaspoonful after breakfast and supper; over ninety-five degrees, one-half teaspoonful after each meal. It has been noticed among the small number of men taking salt, that afternoon fatigue, general malaise and muscular cramps have disappeared. We believe that the general morale of the command will be elevated and fatigue lessened when the salt ration is issued to the troops. The excessive heat should not prove to be a problem to this regiment.

It should be borne in mind that the use of a salt ration is not only indicated during hot weather; but, also during any exercise or maneuver that causes excessive perspiring among the troops.

The ideas mentioned in this article are not claimed to be original; but, are presented with the idea of helping over the rough spots, any troops that may be sent into this particular area.

The Veterinarian

Whenever young horses are moved into a new environment, a certain amount of disease conditions must be expected. The amount and severity of the various infections will vary with their condition prior to shipment, the length of shipment, and with their care and reception after arrival at their new station.

Due to emergency conditions existing in the remount service at the present time, the length of the processing period at remount depots has been reduced from a normal period of 120 days to only 60 days. The former period was ordinarily adequate to allow for recuperation from "childhood" diseases such as strangles and respiratory conditions incident to shipment of green animals from farms and ranches to animal concentration points.

Many of the remounts received at the remount depot will ordinarily suffer from Rhinitis, Influenza, and a considerable percentage with Pneumonia, but would be shipped very shortly after recovery, due to crowded conditions existing at the remount depots. In normal times, such animals are given the advantage of a long recuperative period to come back to their normal strength and health. These cases will invariably arrive in good flesh and apparent excellent health. After detraining, they appear to be in excellent spirits and this attitude gives rise to the temptation to begin their training period immediately in order to be able to turn them to troop duty in the least possible time. This procedure should be avoided for all remounts. Such animals, if brought into their work too rapidly, may be expected to be adversely affected, particularly with reference to their heart and lungs. Those that haven't been sick are liable to become infected after arrival at the new camp. It is a well known fact that animals shipped long distances have become debilitated by fatigue and exposure, even though the "28-Hour Law" concerning periodic feed and rest en route has been complied with.

Numerous cases of Rhinitis and some Pneumonia are not infrequently diagnosed by the Veterinary Officer even before the animals have been unloaded. The well known "Shipping Fever" is an all-inclusive term referring to Influenza, Strangles (Distemper) Rhinitis, Pneumonia and the complications which accompany them. The exciting causes of these diseases are organisms of various types, but the predisposing causes are long railroad journeys, excitement, irregular feeding and watering and exposure, all of which lower the natural resistance. The animals which do not show any symptoms of disease may, nevertheless, be contacts and may be going through the incubation period of some contagious disease. For this reason Army Regulations provide for an absolute quarantine of a minimum period of 21 days so as to protect the other animals of the command from any communicable disease. This 21-day period is not an arbitrary figure because the appearance of a new case of contagious disease automatically extends the length of the quarantine. These facts bring out another important point: In the construction of new camps for horse outfits, provision must be made by the Constructing Quartermaster and the Commanding Officer to foresee the need for expansion. If a large number of remounts are needed to bring the command to the

required strength, provision must be made for an adequate quarantine area. Furthermore, if several shipments of remounts must be sent at rather close intervals of time, additional quarantine corrals should be constructed. Otherwise the training program of the original units will be disrupted if the formation of new troops is delayed because of lack of stable areas.

Upon detraining of remounts and installation in their new corrals, it should again be remembered that these animals are very tired, even if they do not appear to be. Accordingly, their first day's exercise should be confined to munching large amounts of hay, but no grain. The writer believes that about 20 pounds of hay per animal for the first 24-hour period at judicious intervals will help to quiet these young horses and accustom them to their new surroundings. It will be best to keep them on a heavy hay and a very light grain diet for the first few days because they are too tired to assimilate concentrates without danger of severe digestive upsets.

It cannot be over-emphasized that the proper care of remounts their first few days at the new station will greatly influence their training and lessen the incidence of severe respiratory disease. Training programs to the contrary notwithstanding, it is my belief that these animals should not be ridden at all during the first week, but should be lightly exercised by leading and later by use of the longe. It should be remembered that a young green horse cannot be expected to stand the rigors of training and campaigning as well as an older troop horse and that careful conditioning and training during the early weeks after their arrival will pay dividends later.

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Feeding and Care of Horses

*By Colonel E. N. Hardy, 2.M.C.**

Excerpts from a letter:

In making trips to observe mounted units, I am particularly interested in the care and conditioning of animals, and I shall give you some of my observations in this respect: It is of course fundamental that horses must be in condition for Cavalry to function as such. Each individual animal must be conditioned, not the units in general. My observation has been that there is much to be desired in the way of expert feeding. Advantage is not taken of regulations to make changes or substitutions in the regular feeding. For example, hardly any of our mounted units feed corn during the cold months. It would be beneficial to have a part of the grain ration composed of corn during the cold months —up to about 45 per cent—depending upon how cold it gets. Corn is cheaper than oats and the difference could be applied to supplying more hay, of which I believe horses don't get enough. More care should be given to spreading the hay feeding out during the day rather than feeding most of it at one time. Every effort should be made to have at least one-third of the hay ration composed of alfalfa or clover. Good Johnson Grass hay should be fed at times so as to provide for a change. The kind of hay, in general, depends upon the locality—and good Johnson Grass hay is better than poor Timothy hay. I noticed in the maneuvers in Louisiana last spring that the horses were not eating their hay with any relish; much of it was being trampled under foot or left untouched. Some hay had been accepted which was below specifications. The commander of a unit has got to be more strict with inspectors of forage insisting that contractors live up to specifications.

Grazing

The subject of grazing in garrison or in the field is one which I think is neglected. Every possible effort should be made to give each animal at least 15 minutes grazing a day—this can usually be accomplished no matter what happens if the unit commanders are determined to accomplish it. There are many times when horses can be grazed at halts without any interference with the mission. These things seem to be fundamental, but it also seems to be true that they are not given the attention they should have.

Footing

In this day and time when we have to place our horses where they cannot be observed from the air, we can no longer place a continuous picket line on flat, open land. We have to tie horses individually in places where they will be covered from air observation. I noted in the maneuvers last year that in innumerable cases horses were tied on the sides of steep hills where they would have to exercise a definite effort to keep their balance. Of course, this strain to keep on their feet on the side of a hill interfered with their getting the rest and relaxation they were entitled to and which were necessary to enable them to carry on the next day. In nearly all such cases I noticed that by moving an animal, only a few feet, a more comfortable place could be found. You can imagine what a serious thing this might be if 400 out of 1,000 horses were tied during a night's bivouac in a place where they could not rest.

*Chief Remount Section, Quartermaster General's Office.

Making It Work

*By Lieutenant C. O. Brown, 11th Cavalry**

IN a period of rapid expansion, when demand far exceeds supply in almost every unit and branch, field forces have found themselves improvising ways, means, methods. In this the 11th Cavalry is no exception: in fact, it has employed "bailing wire and a piece of string" methods repeatedly during the past several months in an effort to meet training needs with inadequate supplies and shortages of equipment.

Two improvisations worthy of note are the hangers for the 81-mm. mortar pack, and the temporary installation of radios in the M3A1 Scout cars.

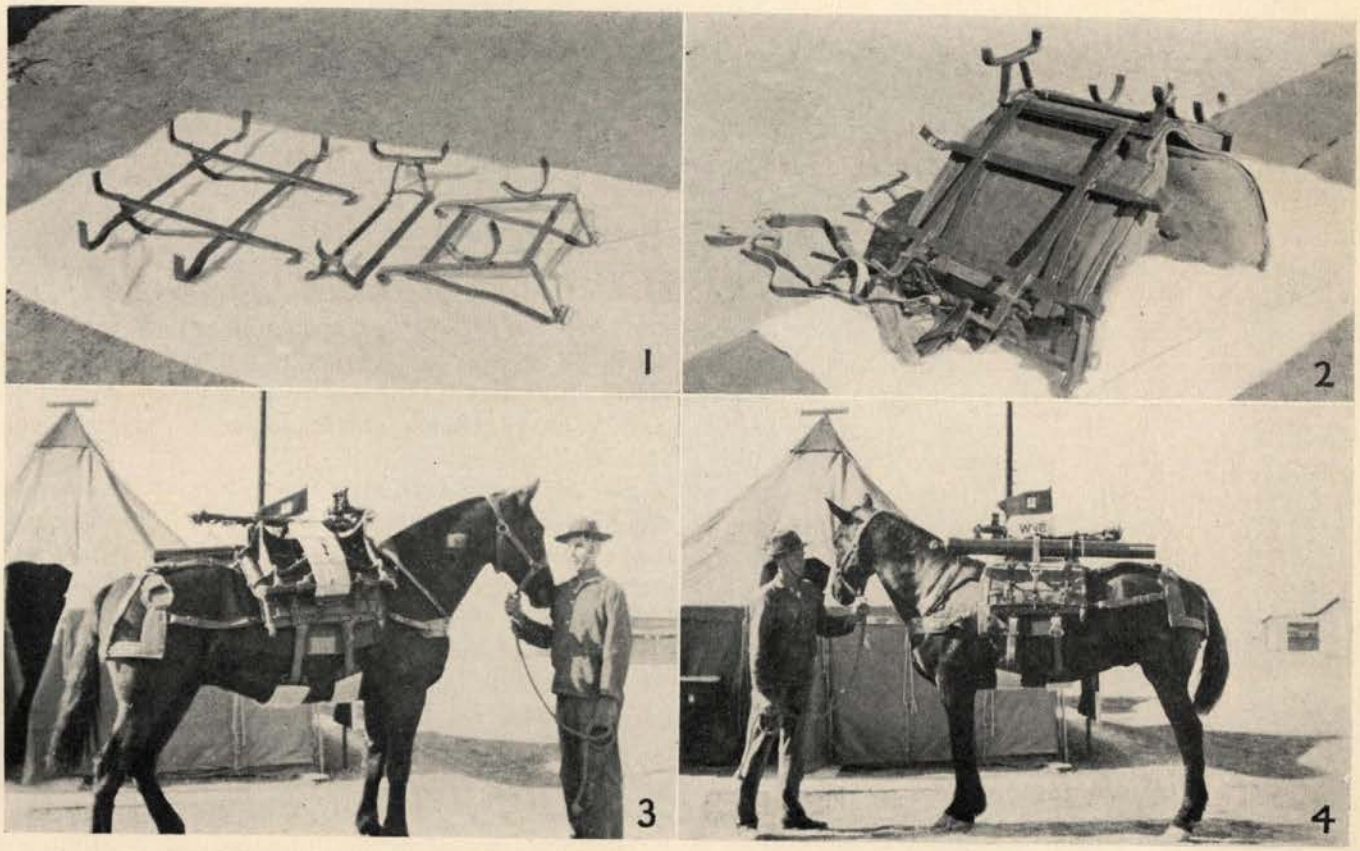
Improvised 81-mm. Mortar Hangers

The 11th Cavalry, stationed down in the rugged desert and mountain region along the Southern California border, has found that the day of improvisation is truly at hand; hence the below illustrated hangers for the 81-mm. mortar pack. Let it be understood that these hangers were not designed by experts, after long hours of study and experimentation. We didn't have the time or facilities for that; but when the 11th received the mortars and nothing to go with them, we had to do something about it and do it right away. The Regimental Commander, Colonel Harold M. Rayner, could not, and would not, wait for receipt of a set of the adopted hangers. The situation would not permit it.

Consequently, Lt. C. L. Yon, the writer, and the mortar platoon non-coms, put their heads together, and after a little tinkering and balancing, developed a model of what they needed to meet the emergency and proceed with training.

About that time we hit a snag in the project. We had a good idea but no funds—troop funds could not be used; but, on inquiry, we found that the Central Valley Union High School in El Centro had a well-equipped metal shop and was conducting a class in metalwork. The problem was presented to the school authorities and they gladly agreed to coöperate in every

*Assisted by Lieutenant Glenn C. Ames, 11th Cavalry.



1—Hanger dismantled. 2—Hanger secured to the pack showing notched bipod cradle. 3—Off-side of pack showing mohair cincha over base-plate. 4—Near-side of pack showing single quick-release buckle.

way. The metal class agreed to construct the hangers for us if we would furnish them with the materials and a model of what we wanted. Corporal Palmer made a tin model of the hangers from an old five-gallon oil can, but the only suitable metal we could find was some quarter inch by one inch strap iron. This was heavier than we wanted but we found that by using it sparingly, it would serve very well. The model and materials were taken to the high school shop and the class of youngsters went to work with a good deal of enthusiasm and some skill, and produced two sets of the hangers in time for the demonstration on Army Day, April 7.

The hangers are so constructed that the center piece, carrying the bipod, is held firmly to the pack-saddle by the two side pieces carrying the mortar and the base plate. The fore-piece of the bipod cradle is notched to receive the bipod just forward of the compass joint and in rear of the ring, thus preventing the top load from slipping forward and backward and insuring identical weight distribution each time the gun is packed. Lacking any extra quick release buckles, a couple were salvaged from old packs. One buckle is used on each pack. A mohair cincha secures the gun to the pack, and a quick-release buckle is fastened to the near side, the cincha passing over the base plate center brace on the offside and over the bipod an the top load, which the leather latigo secures the mortar. Pieces of scrap leather are used to line the inside of the cradle to prevent rattling and reduce slippage. The total cost of non-issue materials per pack is approximately one dollar.

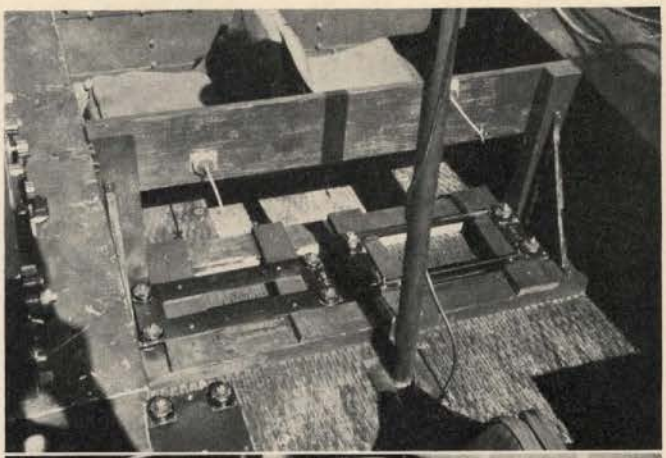
During Army Day demonstrations the packs were displayed showing how the crews went into and out of action from the mounted pack, being the center of interest for about eight thousand people who visited the camp on that day. The crews were a target of a thousand questions—the prize one being asked by a little old lady in more-or-less lavender and lace: "Doesn't it frighten the horse when you shoot that big thing from his back?"

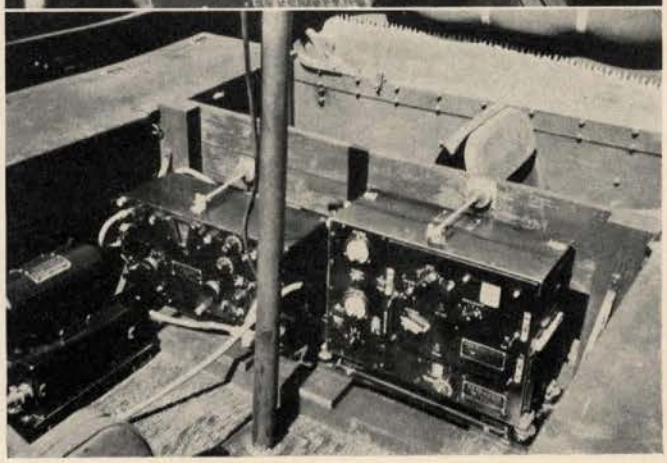
About a week after Army Day, when we were training with the pack and rejoicing that our idea was really working out, the March-April issue of The Cavalry Journal reached us, and on Page 18 we found that the Cavalry Board was experimenting with a pack nearly identical to our own. We feel even better about the pack now since the Board has sanctioned through its pack, our general idea. In the meantime, pending the receipt of a set of adopted packs, we are progressing with training; can meet an emergency, and can adapt ourselves to the routine of the new pack with a minimum of effort and without serious delay.

Installation of Radios

By Lieutenant Glenn C. Ames, 11th Cavalry

In the last week of March, this year, the Regiment received a shipment of seven new M3A1 Scout Cars to





replace the M-1's we had been using since 1935. The new cars were not, however, radio-equipped. Due to the necessary pressing need for radio-equipped reconnaissance units at this border station, the problem of improvised installation of the 245-H radios, which had been in the M-1 cars, immediately arose. Component parts and instructions for modification and installation of these radios into the M3A1 cars were duly requisitioned before work on the improvisation began.

Two considerations guided the construction: (1) Providing the radios with maximum safety from jar when the vehicles operate over rough terrain, and (2) Placing the radio in the vehicle in the most convenient position for operations without impeding access to the armament.

The 245-H radios were installed in the M3A1 scout cars by constructing a wooden framework and bolting thereto the mounts for the boxes BC-223 (transmitter) and BC-312 (receiver). In order to make room for the installation of this construction the two bucket seats immediately in rear of the mast were unbolted from the floor and removed, and the two pieces of 2 x 4 extending the width of the floor space thus vacated were bolted to the floor, using the holes that formerly contained the seat bolts. Cross members of 1 x 4 were screwed to the 2 x 4's and the mounts FT-162 and FT-173 were bolted to the cross members. As it was necessary to brace the boxes against forward and backward motion, a vertical framework was erected along the

rear 2 x 4 and braced at each end with an iron brace made from old horseshoes. To this rear frame were fastened the brackets used in the radio installation in the M-1 cars, thereby practically eliminating the fore and aft motion of the boxes. It was found that by placing the dynamotor unit PE-55 on the floor of the car immediately in front of the receiver and against the right side ammunition cabinet, it could be connected to the terminal box with no modification of the cord. In this manner, with the receiver on the right side (facing forward) and the transmitter on the left side, the whole set could be assembled with no modification of the cordage. It was decided that the boxes containing the spare tubes could be screwed to the back of the vertical framework at the rear of the set. The whole framework was then given two coats of OD paint.

It should be understood that this installation was not intended to be an improvement over the prescribed method, but instead was only a temporary measure taken with a view to making the radios available for use until a permanent installation could be made. This improvisation has worked out very well.

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STABLES, New Type

By Major Albert Whipple Morse, Jr., Cavalry

STABLES used by the Second Cavalry Division at Camp Funston, Fort Riley, Kansas, present an interesting study from the standpoint of *utility*.

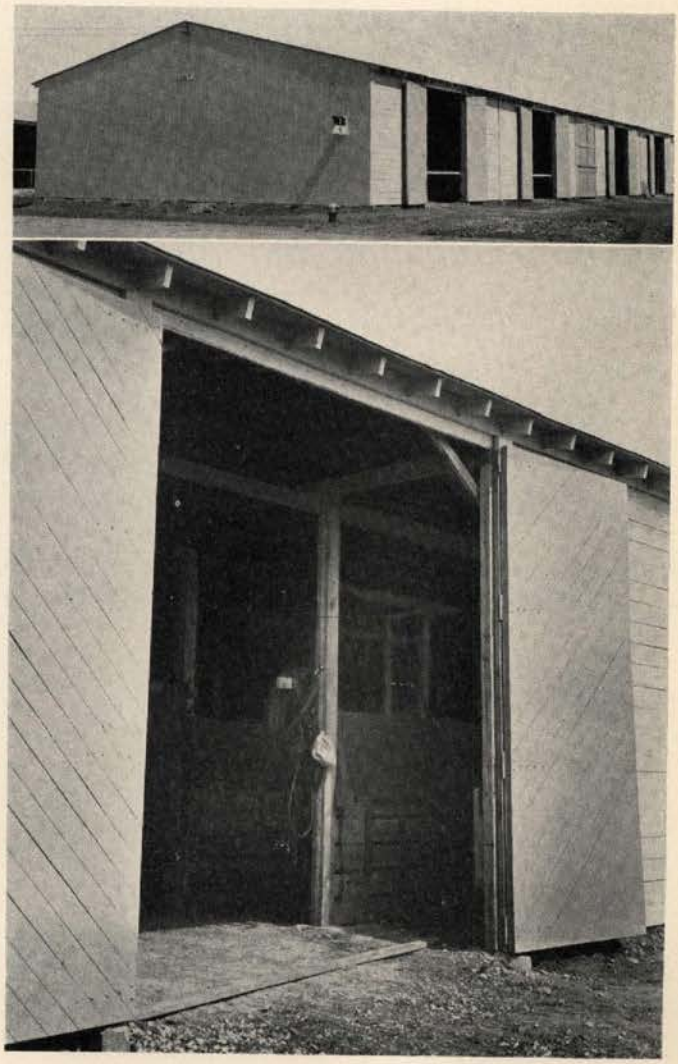
These stables can be converted quickly into motor sheds, and in that respect they are of particular value. By taking out the partitions, the buildings would be immediately available for motorized equipment.

There is no great depth to penetrate in cleaning these stables. Since the stalls are arranged along each side of the building cleaning consists of taking out what is on each side.

The possibility of a fire, against which every precaution is exercised, of course, brings out the consideration of removing the horses, and with these stables in use by the Second Cavalry Division, eight doors, ideally distributed, can be used, instead of the fewer number in the standard type of stable. Unlike the end doors used in most stables, which can be easily blocked by a fire at the ends of the building, the eight doors of this new stable can not all be shut off by a fire.

Undesirable features include the lack of ample ventilation in all kinds of weather, insufficient light, the absence of saddle rooms, and the increase in expense of construction because of the large number of heavily-built doors.

There has been no cold weather since these new stables were first occupied in March of this year, and by leaving the doors open the necessary ventilation and light has been obtained.



THE "PACK OUT!"

By Captains Loren B. Hillsinger and James E. Glattly, 14th Cavalry

ONE of the most obvious lessons learned from the present war is that the scope of Cavalry has been broadened to include an ability to maintain sustained combat, dismounted, with the horse temporarily absent —too far from the trooper to render the equipment on him available for immediate use, and yet close enough to bring the animal up in order to realize fully that precious mobility which spells success in modern warfare. This lesson is not entirely new, but it is new in the importance to which action of this type has advanced in consideration. This advance is not made to the exclusion of delaying actions, pursuit, harassment, reconnaissance, and other typical Cavalry rôles but in addition to those rôles.

To rise tactically to this demand is not a great task. But the fact remains clear that the present method of packing is not best suited for this new rôle. It was devised primarily for the former typical types of action before this new phase became so paramount. In other words we must look at this new problem and, as far as it is concerned, consider ourselves as mounted infantry in order to acquire the best angle of approach, bearing in mind constantly that it is in addition to our other old problems.

With this in mind, it first had to be determined what equipment was wanted; whether it was wanted on the horse or on the person, or on the truck; WHEN IT WAS WANTED IN THOSE PLACES; and a decision of how it was going to be placed and arranged in those places so as to:

(1) be *compact* on the truck
(2) be *accessible* to the man
(3) be *sparing* on the energy and body of the horse and man.

This involved study and experimentation.

First we had to "think-out" the situation outlined above. The result of this was to decide that the art of packing consisted of four essentials:

(1) to carry only the *indispensable*.
(2) to *distribute* its weight properly and equally so as to fatigue man and horse the least.
(3) to give the trooper the greatest possible facility in the use of his arms.
(4) to give the trooper those *items of equipment* essential not only to his contentment, but to his comfort and health as well.

In computing the list of indispensable equipment it must be remembered that a war time situation is visualized wherein worn-out clothing is replaced without lengthy requisitions and time-consuming procedure; wherein the old soldier will wash his clothes and the young soldier had better learn to do likewise in a hurry. To paraphrase Kipling, "he who travels fastest, travels *lightest*." We wanted to travel fast even at the risk of losing our reputation of a spit and polish outfit. That reputation would be willingly traded upon taking the field for one of speed. As Joe Bache, All American tackle of the Four Horseman Team, used to say in coaching his line after his graduation, "You've got to be fast—you've got to be fast, babies."

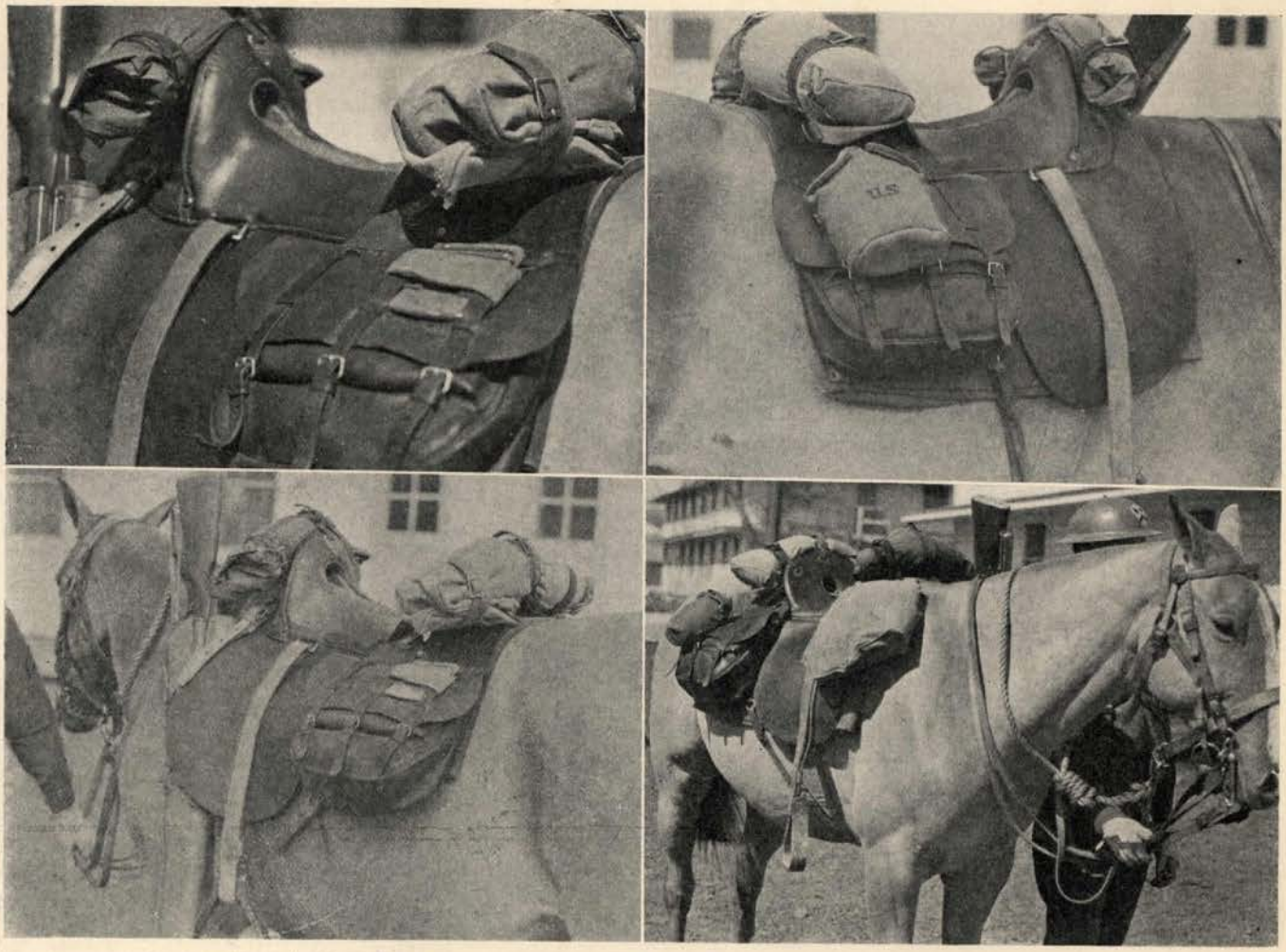
Equipment

First, consider the trooper's arms and associated equipment. He must have:

Rifle with boot
Pistol with clips
Cartridge belt with suspenders with pocket magazine
Hand grenades (still a moot question) (in dismounted canteen cover, as a suggested method of carrying).

Second, consider his personal needs. He demands:

2 shirts
2 breeches
6 pair socks
3 undershirts
3 drawers
1 raincoat
1 short coat (mackinaw)
1 windbreaker
1 undershirt, wool
2 pair boots (hobnailed with heavy soles(?))
1 belt, waist web
1 sewing kit
1 notebook (pocket size)
1 pencil
1 mess kit (complete, less knife and fork)
1 canteen and cup with cover (dismounted, converted for mounted use by sewing 2 web straps on rear)
tobacco
toilet paper
1 barrack bag
4 handkerchiefs
1 razor with blades or strap
shaving soap (cream mashes)
toilet soap
shaving brush
field ration "C"
1 face towel
1 bath towel
1 wrist watch
gas mask
comb
bolo with scabbard
toothbrush
1 helmet, steel
toothpowder (cream or paste mashes)
1 extra pair boot laces
foot powder
2 bed blankets
shelter half with pole, rope and pins
pocket knife (one blade of awl type, utility type)
first aid kit
identification tags
matches.



Above: Near and off sides, march pack. Below: Near and off sides, combat pack

Third, what horse equipment is essential? We decided upon the following:

saddle
bridle, snaffle bit only, curb available for exceptional horses from organization equipment
mohair cinch
saddle bags (pair)
2 canvas duck lining bags for saddle bags (1 only with lift-a-dot or buckle flap and fitted with web attachment and snap hooks to attach into rings of cartridge belt suspenders
feed bag
grain bag
surcingle
saddle blanket
curry comb
grooming brush
grooming cloth
saddle soap
sponge
16 horseshoe nails
halter with shank
6 coat straps
2 saddle bag straps
set of fitted horseshoes

Now what of the officers and the non-commissioned officers? Many long years ago General DeBrache of the French Cavalry laid down the rule that an officer should carry no more than a trooper. We went farther in that we eliminated some of the troopers' equipment and the substitutions we made did not meet the amount subtracted, much less surpass it. The actual saving in weight on both horse and truck amounts to some 25 pounds. We decided: (1) rifles would not be carried by officers, first sergeants, supply sergeants, mess sergeants, stable sergeants, buglers, machine gunners and assistant gunners, (2) the bolo would not be carried by officers or the first sergeants, however officers and non-commissioned officers of the first four grades would carry:

field glasses
compasses
(corporals of machine gun platoon also carry field glasses)
flashlight
whistles

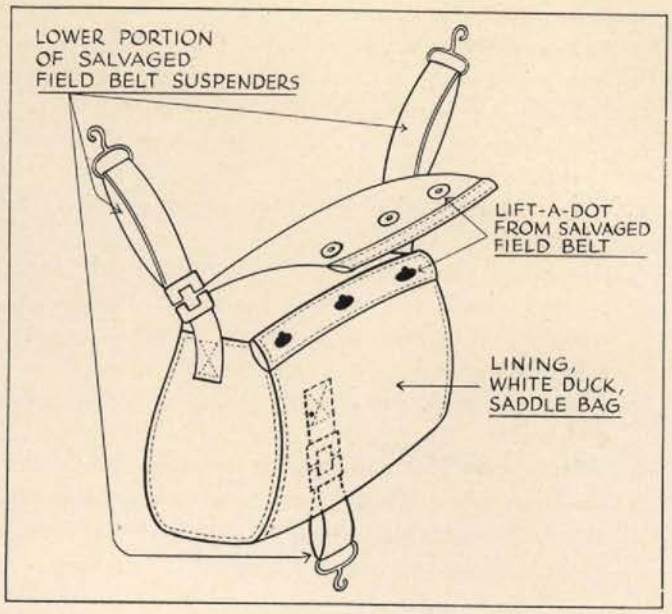
Packing

In our estimate of where to carry these items we followed a tip from the Regimental Commander, Lieutenant Colonel Pierce, and devised a kit bag from materials on hand. A sketch of this bag is included and it will be observed that it demands nothing except those things actually on hand. The time consumed to construct it is approximately ½ a man-hour. Actually the troop saddler can turn one out in 15 minutes, which will do the trick, but not have fancy edges and neatly trimmed seams. This bag was to contain those essentials

a man would need when leaving his horse for sustained dismounted action, including a day's ration of type "C." In order to do this we put the toilet articles in a face towel and put this in the mess kit. The knife and fork were left at home since the man has a pocket knife and a spoon represents the best utensil with which to eat the "C" type ration. Bath towels aren't being used when sustained combat is around the corner and, besides, needing the room, we didn't think a man would be interested in taking all of these mentioned items into a firefight. True, he might make the enemy a bit envious and lower his morale, but on the other hand he might make him so envious that he'd fight like the devil just to take them away from our men. Some enemies are just that rude and uncouth! However, swinging along the road when combat was not imminent, gave us another slant so we visualized a march pack for that purpose convertible into a combat pack, which would represent certain additions depending on the situation confronting us. Here is the way we lined up the march pack:

I. ON HORSE
- a. On pommel
  - 1 outer garment (can be either raincoat, mackinaw or windbreaker, but not more than one).
  - rifle with boot—attached near pommel ring
- b. Under saddle
  - saddle blanket
- c. On cantle
  - grain bag
  - feed bag
- d. Near saddle bag
  - grooming brush—in saddle bag pocket
  - horseshoe nails—rolled in surcingle
- e. Off saddle bag (see attached report on "ditty bag")
  - Mess kit—spoon only, no knife or fork
  - toilet articles—wrapped in face towel in mess kit
  - 1 pair socks
  - sewing kit
  - tobacco
- f. Attached to off saddle bag straps

Removing and attaching ditty bag to the field belt suspenders



Ditty Bag

This bag is designed to fit into the off side saddle bag. It contains the personal effects necessary for the trooper in order to function dismounted over a prolonged period. It also can be taken into barracks or a tent on an overnight halt. It is removable without disturbing the saddle bags on the saddle. It is slung over the shoulder when marching dismounted by hooking the attached straps on the bag into the swivel of the field belt suspenders. ESTIMATED TIME FOR CONVERSION OF LINING BAG WITH SALVAGED MATERIALS: *½ man-hour.*

canteen with cup and dismounted cover—2nd and 3rd saddle bag straps through loops of attached web straps

g. Attached to near saddle bag straps
curry comb

II. ON PERSON:

knife in pocket—on cord, end of which is tied or sewed to lining of pocket.
pistol and holster with pocket magazine on belt
first-aid kit on belt
bolo on belt opposite pistol
cartridge belt with suspenders
handkerchiefs (around neck—about pistol—in hat)
notebook and pencil in pocket
matches in pocket
toilet paper in hip pocket
wrist watch

III. ON TRUCK IN BARRACK BAG:

a. All remainder of equipment, including extra fitted barium-treated horseshoes.
b. Barrack bags would be waterproofed with a standard waterproofing solution and grouped into squad bags, constructed of canvas capable of holding the 8 squad barrack bags. They would be plainly lettered: (i.e.: Tr "F"
Plat 1
Squad 2)
c. Such squad sacks would be grouped and strapped by respective platoons.

The combat pack additions are issued when the commander "smells a rat" and decides he had better slip on his brass knuckles. Whereupon he consults the following list of optional additions, shuts his eyes, selects any or all items, and sends a message to the Brigade that "morale is excellent, men and animals in fine fettle." As they well should be, having been spared the maximum bother and expenditure of energy consistent with security. The additional list is as follows:

Field ration in off saddle bag
Extra ammunition in bandoleer about horse's neck
Steel helmet, worn on person
Gas mask (if situation and action warrants) on off pommel (see photo), otherwise on truck.
Hand grenades (in dismounted canteen cover—on cartridge belt) (may be carried without cover in shirt when dismounted—in near side saddle bag when mounted)

Final Remarks

We are now ready to go. Colloquially speaking, we may smell a bit when we get back, but every Cavalryman expects to smell a little bit. (Actually, as Mark Twain said, the verb is "stink"!) He can always make a remark about "pipe smoke, tweeds and horse sweat" and still steal the doughboy's girl. He may come back clothed in rags, but if he takes advantage of the potential mobility we have given him he'll be covered sufficiently with the "glory" that chaps like DeBrache, Forrest, and Stuart constantly sought and, strangely enough, got with just about half the equipment.

Oh, yes. There comes a time in every officer's career when he feels he is expected to make a few pertinent remarks. Sometimes because he feels he must fill in a lull, other times because he feels the troops have an idea he doesn't mean business with a capital "B." Some officers get it out of their system by haranguing The Cavalry Journal; others by delaying officers' call, or by boring the men to death with their yap. Anyhow, here are a few suggested items and topics—they have been adopted as standard procedure in the 14th Horse.

1. As a general rule an officer should carry no more than a trooper.

2. The often seen practice of having orderlies carry personal supplies of officers should be rigidly and positively forbidden.

3. All articles of necessity to the trooper have been listed. Inspection by an officer will be made prior to departure from any permanent, or semi-permanent, camp to see that no additonal items are carried. Frequent unexpected inspections should be made by officers at other times after packing out to make sure nothing has been acquired. Repeated offenders should be punished suitably to insure that such useless articles do not exhaust the strength of the horse. Squad leaders will be held responsible for persistent offenders.

4. Tongues of buckles on the pommel roll should point to the rear, except the center buckle which should point to the front.

5. Nothing on the pommel should rise above the pommel of the saddle.

6. After packing out and before mounting a trooper should always walk around the horse to inspect the load.

7. The modified Garand rifle boot was found to ride best when attached as follows: Carry the rifle as near the vertical as possible. Accomplish this by using a short front strap and lowering the rear strap approximately 6 inches toward the end of the boot. The end of this strap is then attached to the "D" ring of the cinch rather than to the near side cantle ring. This is preferable for 8 reasons:

a. Rifle rides with *less motion.*

b. Rifle less apt to *injure animal.*

c. Rifle impossible to *loosen or slide* from boot at fast gaits or down steep inclines. No possibility of loss.

d. Weight is suspended from a high point of saddle and results in little or no *leverage* components due to lack of moment arm.

e. Rifle may be *withdrawn when mounted* with no effort.

f. Position of rifle prohibits trooper riding with "feet on dashboard," thus riding the cantle. Results in trooper being *forced into proper forward regulation seat.*

g. There is no obstruction to left leg in application of leg aids.

h. By properly instructing men to raise rifle with both hands on stock it will slide from the boot easily. *Result is that much valuable time is saved.*

★ ★ ★

GARDED

Mounting Trooper's Individual Equipment On Solo Motorcycle

*By Lieutenant Walter J. Davies, Cavalry**

WE, in the Sixth Reconnaissance Troop, believe we have reached a solution for the carrying of the trooper's field equipment on the solo motorcycle.

In our organization we have 12 Indian Model 640, solo motorcycles, which are used primarily by scouts and messengers in our reconnaissance work. Many times the motorcyclist is separated from his platoon for long periods of time making it impossible for him to carry his field equipment in a scout car. Without his field equipment he is stranded, if he should have a breakdown.

In our reconnaissance exercises and overnight problems, we find that it is essential that each trooper have his field equipment with him at all times.

Saddle bags, as issued, for the McClellan saddle have to be altered somewhat before they are of any use on a motorcycle. If they are mounted as issued they hang too close to the ground and interfere with the operations of the machine. If they are cut in two and bolted or riveted to the fender they offer disadvantages, namely: the leather tends to pull out at the rivets; there are no means to attach the trooper's roll and it requires emptying the contents of the bag if he has to leave his machine.

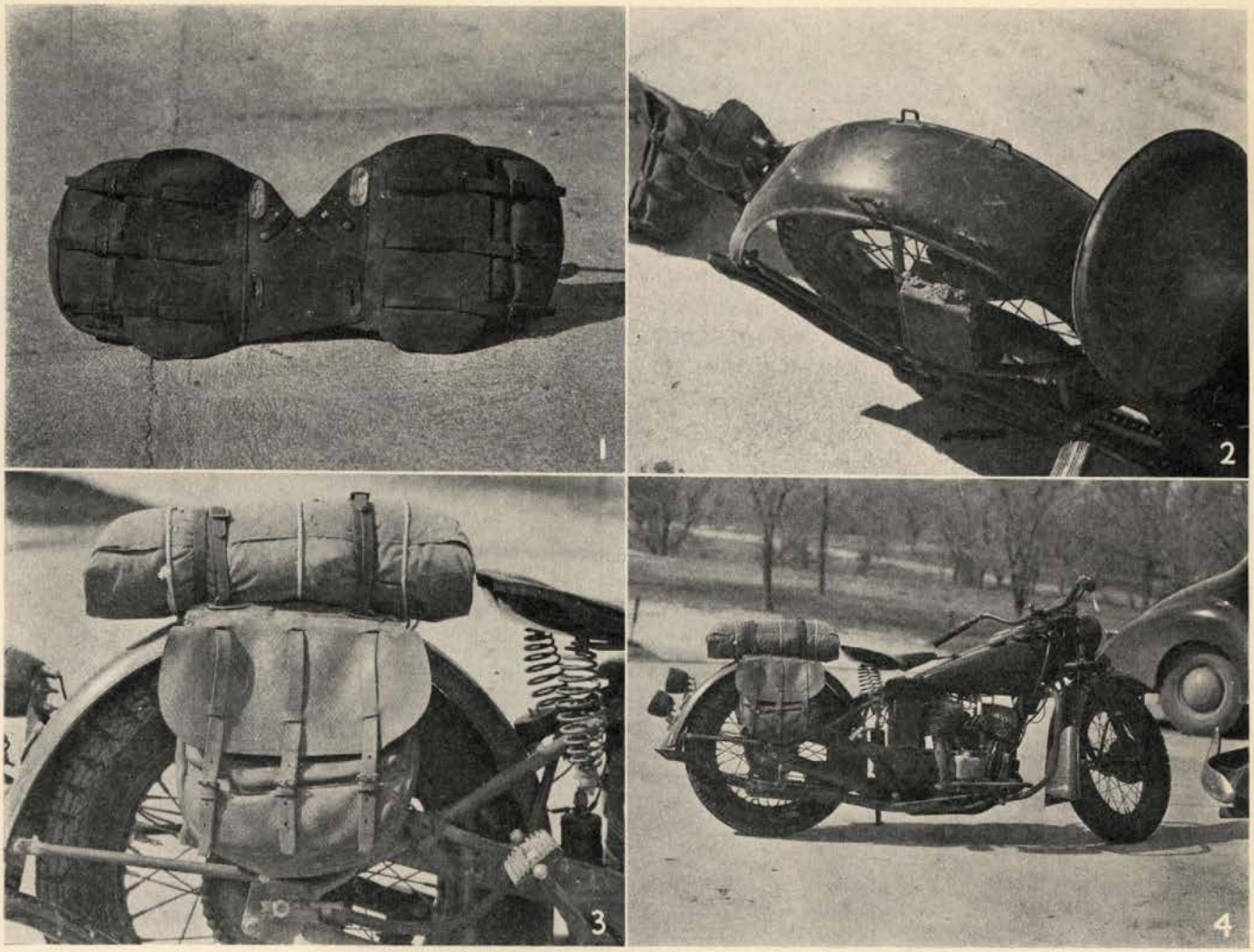
We alter the issue saddle bag and mount it, as shown in the photographs.

The saddle bags come stitched together in the center. By ripping out this seam and over-lapping the two pieces until the saddle bags proper are 9¾ inches apart when resewn, we can attach them to the rear fender of the motorcycle much in the same manner as they are attached to the McClellan saddle. Two slots are cut in the leather slightly above the top of each saddle bag and metallic plates are riveted over these as reinforcements.

Four D's are riveted on the rear fender in a position so as to align with the proper slots in the saddle bags.

Two 36-inch coat straps wrapped around the roll and through the D's secure both the roll and the bags to the machine. One short strap going through the ring at the bottom of the bag and around the frame of the machine keeps it from flopping.

*Motor officer, Sixth Reconnaissance Troop, Camp Funston, Kansas.



1—Saddle bag as altered. 2—Rear fender showing position of the D's. 3—Close up of the rear fender showing method of strapping the roll and bags to the machine. 4—Motorcycle with complete field equipment.

With this arrangement the trooper can carry his shelter half, raincoat, one wool blanket, one tent pole and five tent pins in his roll; his mess kit, flashlight, canteen, tools and dry rations in his saddle bags.

Advantages

The advantages of this method as compared to other methods of carrying the motorcyclist's equipment are:

1. The method of altering and installing the bags is simple and can be done by any 2d Echelon mechanic.
2. The trooper's entire field equipment is mounted securely on the rear fender, out of the way.
3. The weight in the saddle bags tends to balance them on the fender.
4. The bags hang high enough and ride smoothly —they neither bounce nor flap.
5. By loosening four buckles, the trooper can remove his entire field equipment from the machine.

This method has proved to be the most satisfactory arrangement of several we have tried and is recommended by the Cavalry Board.

★ ★ ★

"The Cavalry Board invites any individual, whether or not a cavalryman, to submit for consideration constructive suggestions or ideas relating to new equipment, improvement of standard equipment, or to any problem or project under study by the Board. The Board will also welcome suggestions as to new problems that may properly be considered. Communications should be addressed to the President, Cavalry Board, Fort Riley, Kansas."

NONCOM QUIZ*

EXPLANATION

With a view to stimulating the interest of enlisted men in our Journal we have inaugurated a new department — "Noncom Quiz." It is requested that unit commanders bring this feature especially to the attention of their men and inform us of any additional data desired.

THIS Quiz is to enable all "up and coming" noncommissioned officers to test their knowledge of the fundamentals in combat operations of small Cavalry units. The subject matter of each Quiz, appearing in this and subsequent issues of The CAVALRY JOURNAL, will deal with a separate phase of combat, such as Reconnaissance, Security, Attack, Defense, etc. Some will pertain to the Cavalry Regiment, Horse; others to the Cavalry Regiment, Horse and Mechanized.

The subject matter of this Quiz is SECURITY in the Cavalry Regiment, Horse.

After taking the test, check replies against the correct answers printed on the last page of the Quiz.

SECURITY QUIZ, NUMBER 1

1. *Question.*

Indicate what you consider to be the appropriate size rifle unit which would be used as an advance guard for each of the following; also indicate what you consider to be the normal attachments, if any, of Caliber .30 LMG's to the rifle unit which is being used as the advance guard:

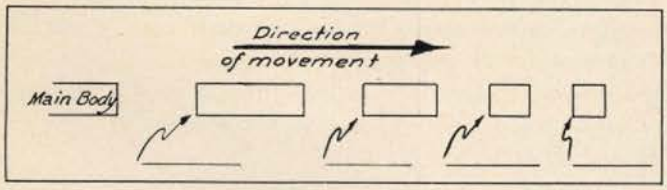
Answer.

	Size of Adv. Gd.	*Attachments Cal. .30 LMG's*
Squad		
Platoon		
Troop		
Squadron		

2. *Question.*

In the blank spaces below insert the names of each element of the security force indicated:

Answer.



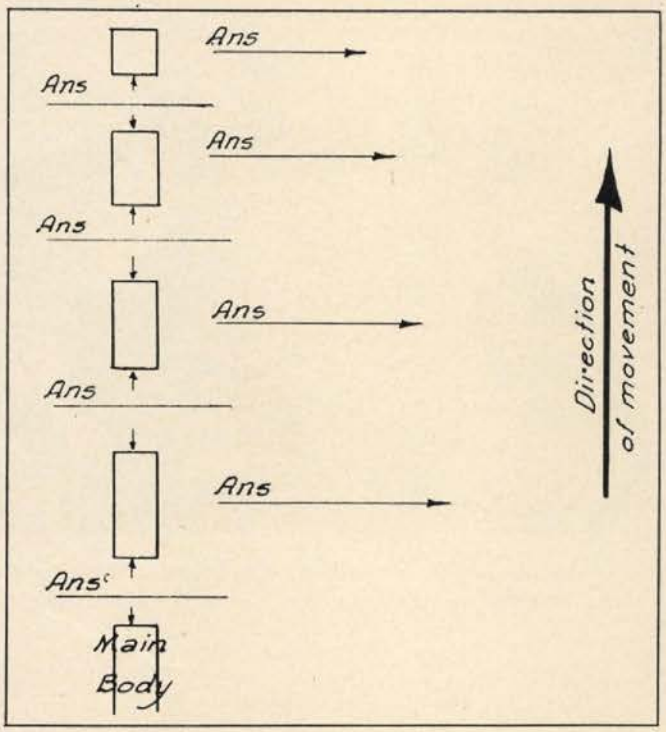
3. *Question.*

Assuming average conditions in the sketches below:

a. Fill in distance between elements.

b. Fill in distance to each flank for which each element is responsible for reconnaissance.

Answer.



4. *Question.*

You are the commander of a covering detachment of one squad for a troop which is moving from A to B on the sketch following.

a. Show on sketch the location of your covering detachment as it halts upon reaching successive bound lines. (Draw successive locations of the covering detachment on the sketch.)

b. Indicate on the sketch the width of front covered by your covering detachment when it is halted on the lines of its successive bounds. (Draw line to scale to indicate width and approximate location.)

c. Indicate the location of the troop commander when the covering detachment starts to move from its first bound line toward its second bound line. Use figure "1" to show location of troop commander.

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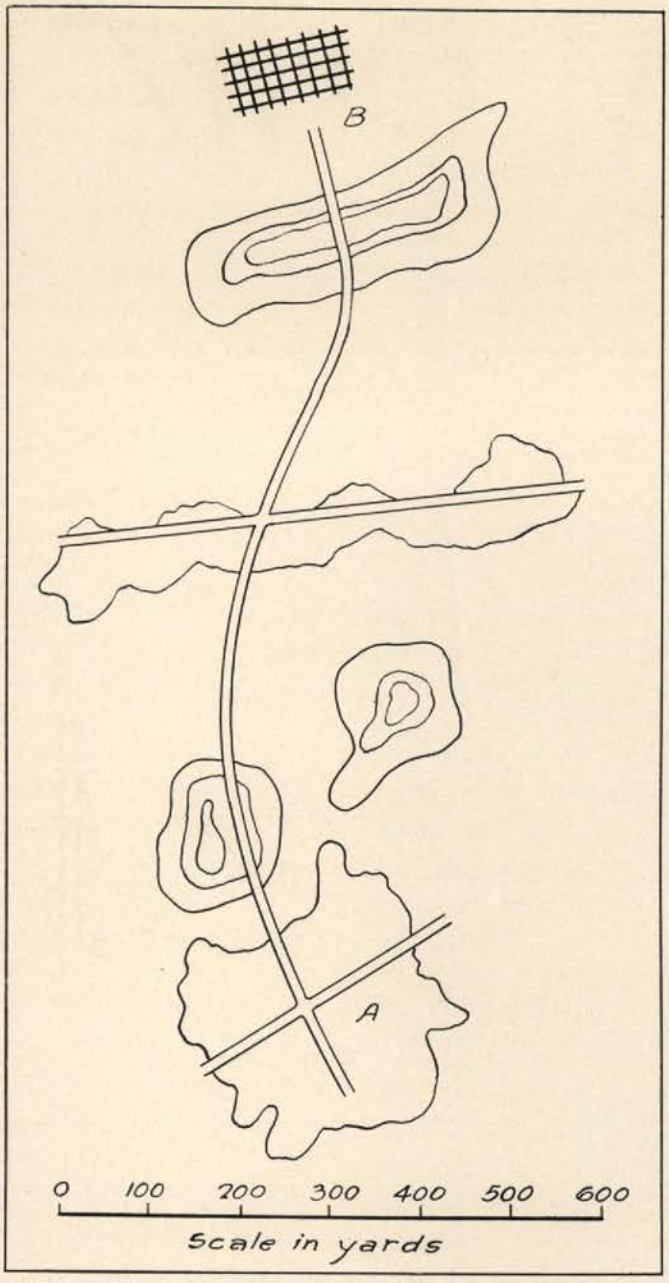
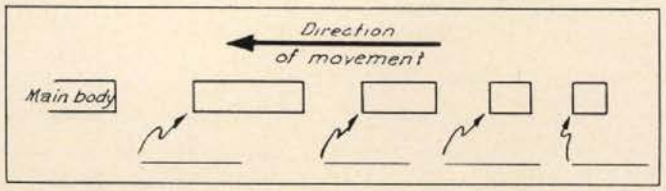
*Prepared under the direction of the Department of Tactics, The Cavalry School.



5. *Question.*

In the blank spaces below insert the names of each element of the security force indicated:

Answer.



6. *Question.*

As Platoon Sergeant you and your Platoon Leader accompanied the Troop Commander on a reconnaissance of a sector of responsibility for your troop in the outpost for the night of a regiment in bivouac. Indicate your knowledge of the correct security principles involved by choosing the correct words or statements, enclosed in brackets, which are applicable in the following sentences. *Cross* out *all incorrect* words or statements.

Answer.

a. The outpost line of resistance is a line encircling the bivouac areas beyond which the enemy must be held (until the main body can prepare for action) (until the supports can be organized into defensive areas).

b. The line of observation is a line forward of the outpost line of resistance along which are stationed (outposts) (outguards) charged with (observing and reporting any hostile advance) (advance patrolling).

c. Supports are the principal (holding) (reserve) elements of the outpost (and are employed to counterattack any hostile force which has penetrated the outpost position) (garrisoning the defensive areas on the outpost line of resistance).

d. Supports are numbered from (left to right) (right to left).

e. Outguards are numbered from (right to left) (left to right), (along the entire line of observation) (in each support).

f. Detached posts (are the sentinels posted by each outguard) (are observation and combat groups detailed at important points too remote to be included in the normal outpost organization).

g. A (combat outpost) (march outpost) (outpost for the night) is established for the security of a command which has halted temporarily.

h. Visiting patrols consisting of several (mounted) (dismounted) men are used (in daylight) (during the hours of darkness) for (liaison) (reconnaissance) between the elements of the outpost.

i. Outguards normally (occupy the same) (are changed to different) (positions at night as during the day) (positions at night from those occupied during the day).

7. *Question.*

Of the following, *underline* correct measures which may be employed by ground forces to secure protection against attack by hostile aircraft:

Answer.

Activity	Warning	Assembling
Chemicals	Pursuit	Concealment
Fire	Delay	Dispersion

8. *Question*

Of the following, *underline* correct measures which may be employed by a command to secure protection against attack by hostile mechanization:

Answer.

Antitank weapons	Mounted attacks
Demolitions	Antitank mines
Road blocks	Shallow entrenchments

Natural terrain barriers (Mountains, woods, swamp, etc.)

9. *Question.*

Of the following, *underline* the type of security detachment used by Cavalry at the halt, when it is intended to resume the march in the immediate future.

Answer.

Combat patrol	Combat outpost
Outpost for the night	March outpost

10. *Question.*

You are in command of one rifle squad acting as the point of a rifle troop which is the advance guard for a cavalry regiment marching in hostile territory.

a. As your point reaches A on the sketch below, it sees a small hostile patrol at B.

Which of the following courses of action do you adopt (underline *one*)?

Answer.

(1) Halt and await instructions from the advance party commander.

(2) Dismount to fight on foot.

(3) Attack mounted immediately.

(4) Immediately signal or report the presence of the hostile patrol to the advance party commander, continuing the march with the point.

b. What orders do you give to initiate the course of action you adopt in sub-paragraph *a*, above?

Answer.

_____

_____

c. Assume that as your point reaches A on the sketch below, it sees a small hostile patrol *at C instead of at B.*

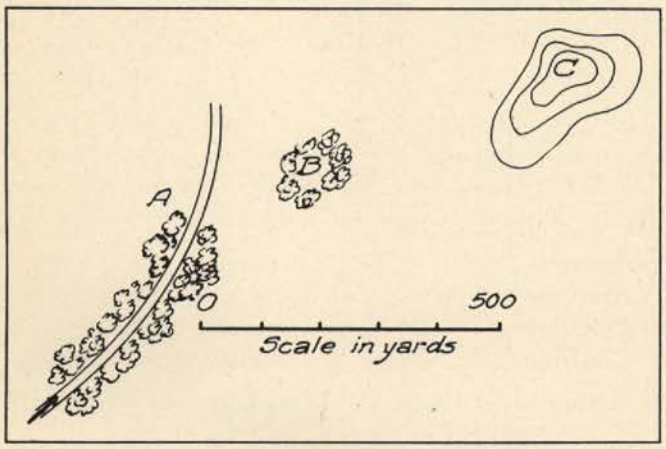
Which of the following courses of action do you adopt (underline *one*)?

(1) Halt and await instructions from the advance party commander.

(2) Dismount to fight on foot.

(3) Attack mounted immediately.

(4) Immediately signal or report the presence of the hostile patrol to the advance party commander, continuing the march with the point.



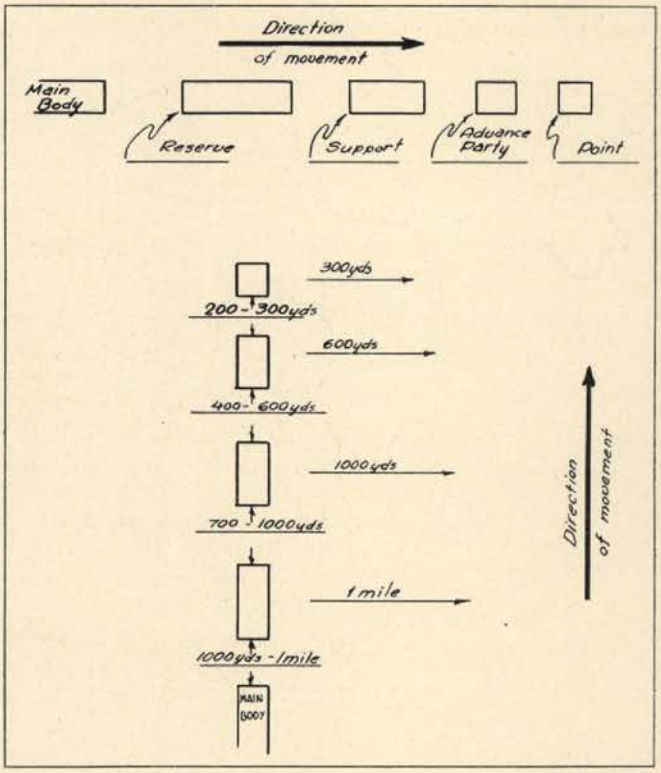
"NONCOM QUIZ"

Solutions to Questions

1.

Size of Advance Guard	*Attachments Cal. .30 LMG's*
Squad	2 men	None
Platoon	½ squad	None
Troop	Squad	None
Squadron	Platoon	One squad

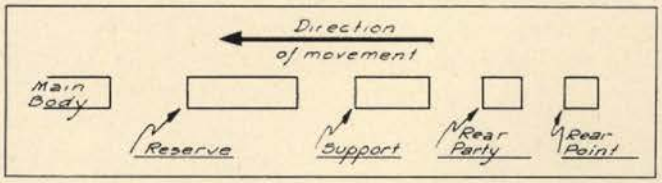
2.



3.

4. (Sketch on next page)

5.



6.

a. The outpost line of resistance is a line encircling the bivouac areas beyond which the enemy must be held (until the main body can prepare for action).

b. The line of observation is a line forward of the outpost line of resistance along which are stationed (outguards) charged with (observing and reporting any hostile advance).

c. Supports are the principal (holding) elements of the outpost (garrisoning the defensive areas on the outpost line of resistance).

d. Supports are numbered from (right to left).

e. Outguards are numbered from (right to left) (in each support).

f. Detached posts (are observation and combat groups detailed at important points too remote to be included in the normal outpost organization).

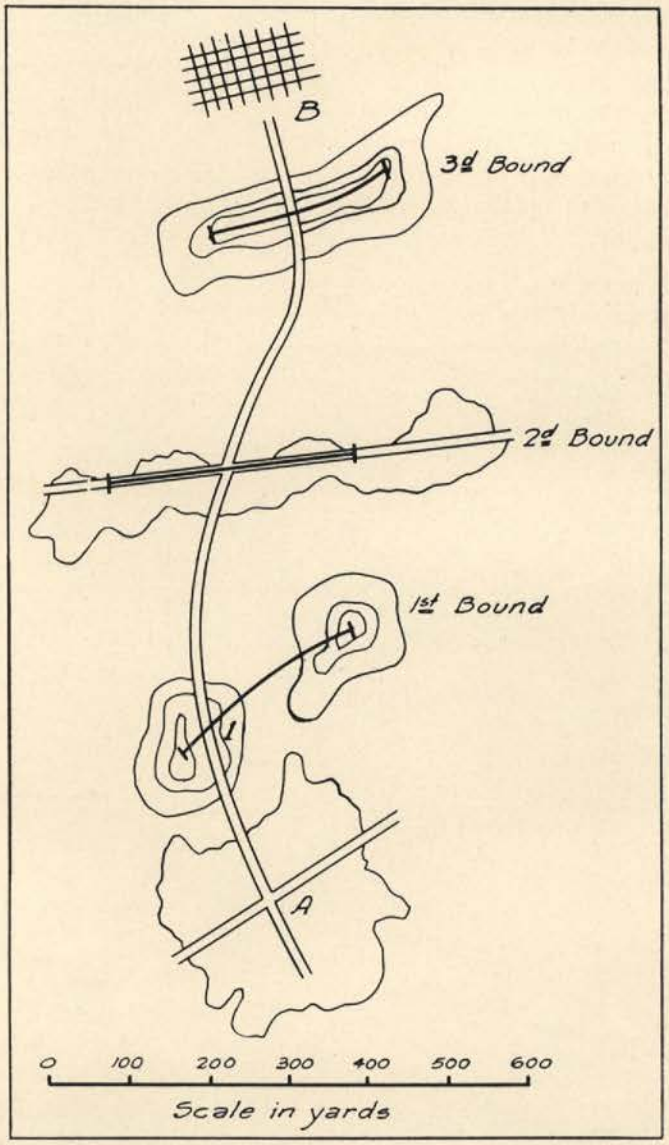
g. A (march outpost) is established for the security of a command which has halted temporarily.

h. Visiting patrols consisting of several (dismounted) men are used (during the hours of darkness) for (liaison) between the elements of the outpost.

i. Outguards normally (are changed to different positions at night from those occupied during the day).

7. *Warning* *Concealment*
   Fire *Dispersion*
8. *Antitank weapons* *Demolitions*
   Road blocks *Antitank mines*
   Natural terrain barriers
9. *March outpost*
10.
   a. Attack mounted immediately.
   b. As foragers—Pistol attack—Follow me.
   c. Immediately signal or report the presence of the hostile patrol to the advance party commander, continuing the march with the point.

4.



GERMAN HORSE CAVALRY

Artillery for the Fast Units*

By Brigadier General Giovanni Angelo Pivano

An excerpt from first page:

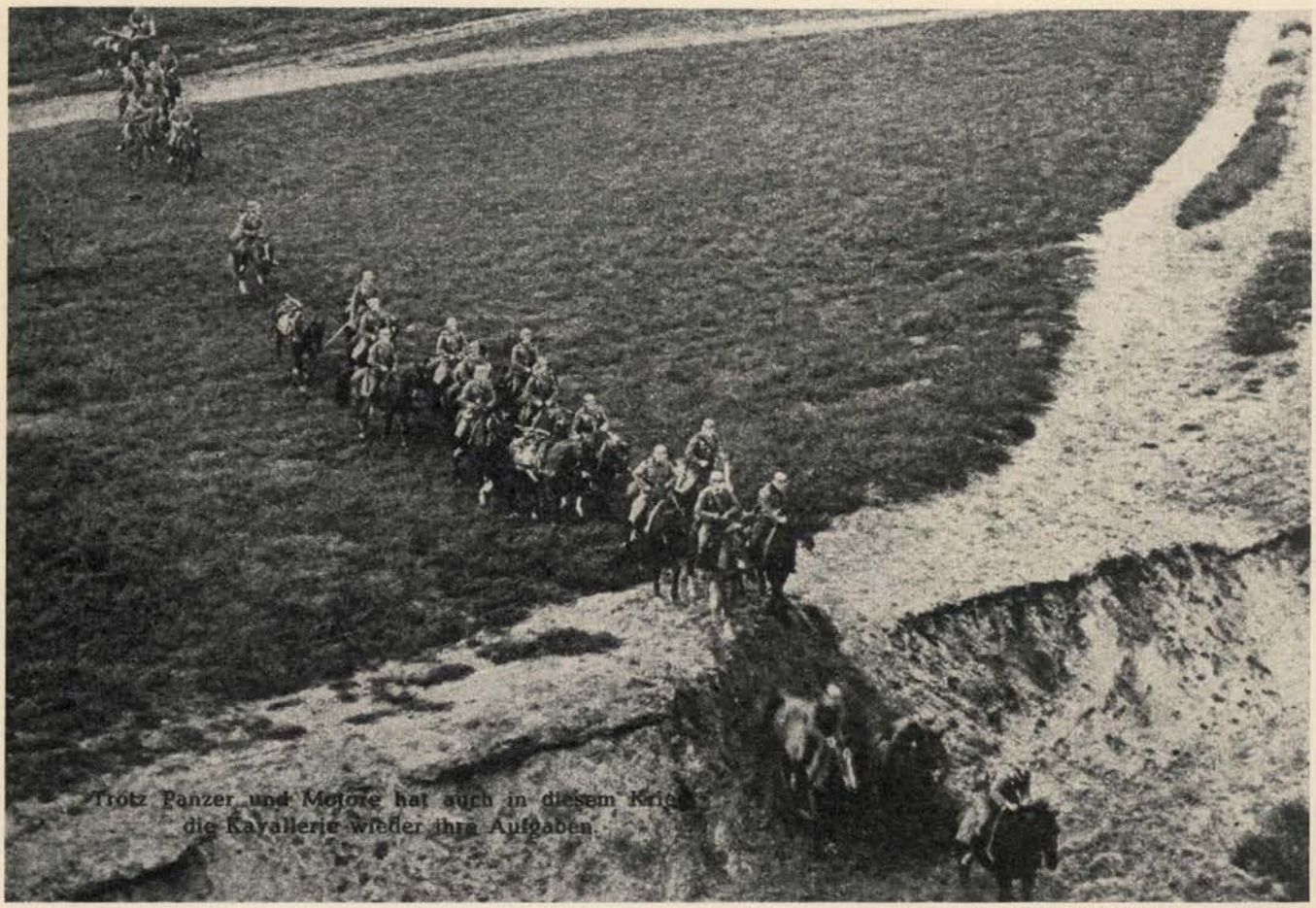
RELATIVELY little attention has been devoted, in recent publications, to major units of a type corresponding to our *divisione celere* (a special type of highly mobile division) as recently used in various theaters of operations.

The *Reiter Brigade* (Cavalry Brigade) later *Reiter-Division* (Cavalry Division) of the Germans was originally used, at the Polish front, to extend the radius of action of the Third Army, which was gradually advancing from East Prussia to a position east of Warsaw, in a series of cleaning-up movements.

On the Western Front, use was made of German cavalry divisions, at first, near the extreme northern end of the front, at the point where it reached the eastern extremity of the Zuider Zee, to clean up the weak reconnaissance forces stationed there by the enemy. Later they were employed for purposes of pursuit. Having first crossed the Seine River west of Paris, the cavalry reached and conquered Saumur, the seat of the French Cavalry School. In doing so it gave the German Army possession of two important river crossings (at Port Boulet across the Loire, and at Chinon across the Vienne). From there the cavalry troops pushed on to Parthenay, at the rate of 70 km. (44 miles) daily. This advance was carried out in a definitely southern direction, without stopping to rest, but not without fighting. At several points enemy resistance was met and broken down in quick, lively encounters. French armored contingents appearing every now and then were beaten back by the horse-drawn batteries and the motorized antitank groups included with the division.

Polish cavalry brigades were employed at both wings and in front of the individual army; and they drew back with their army, engaging in rear-guard encounters.

*Translated from *Rivista Di Artiglieria E Genio.*



From *Der Kriegsfilmbericht des Heeres*, Germany.

"In spite of the importance of armored forces and mechanization, the cavalry has again its definite missions or place on the modern battlefields." An interesting feature of this photograph is the appearance in the German cavalry troop of *machine gun pack horses*—long a characteristic of United States cavalry.

Mark I Tank Experiences in France*

By Section Sergeant-Major W. R. Armit

OUR Battalion was lucky enough to be stationed in France long enough to get to know the country and the people of the north of France.

For nearly nine months we spent some happy times in the vicinity of Arras, Lille and Lens and, of course, we did our share of trench digging in back areas.

The local people used to scoff at our efforts and assured us that their traditional enemies would not set foot in their country.

We did quite a lot of training with our Mark I tank, but all the time we needed a heavier weapon than the Vickers machine gun with which they were armed.

After many suggestions we at last had a point five gun fitted to the Troop leaders' tanks and, though this reduced the fire power of the Troops, it made the Troop leaders a bit more confident as to the outcome of any future engagements with enemy tanks.

The two-man tank was really a supreme test for the crew commanders, for in the restricted space one had to fire the gun, direct the tank, work the radio, and if one was a Troop leader one had to look to the tactical handling of the Troop.

However, in the eight months we spent in France we all worked hard, and we found that by practice we could do all the jobs and the tank had lots of room inside it.

Just before Hitler walked into Belgium we had shifted to a training area and were looking forward to lots of hard training and some pleasant hours in the nearby town of Vernon; the surrounding country was lovely and a change from the flat expanses we had been used to in the north.

The Battalion went up and we found ourselves on our way to Belgium. The road party had quite a hectic time on the move, but reached our appointed place without any mishaps.

The tanks came by rail and the unloading took place at a station called Athe, which, was only a few miles southwest of Brussels. We had our first taste of the power of the enemy air force, for in the middle of our unloading party, with the C Squadron still on the trucks, we had a visit from fifteen bombers.

They were flying at a height of about five hundred feet, and though all the small arms in the vicinity were brought to bear on them they carried out a raid on the railway bridge near the station.

Two of the flight came back to the station and just as we prepared to take cover they were both hit and crashed on the outskirts of the town.

We got off the train and moved our tanks up to a wood on the historic ground where the battle of Waterloo was fought. The route we followed was dive-bombed, but of the fifty-odd bombs dropped none exploded, still it was quite tricky work picking our way with tanks past the bombs, and each tank crew breathed more freely after they had left them behind.

That night saw the Battalion harbored in a wood so close to Jerry that no sleep was possible owing to the whistle of our own shells and the lighter variety of Jerry's.

We were troubled a lot by the passage of so many refugees through the wood, and guarding the tanks was quite a difficult job.

We settled down in the dark to get as much rest as possible but a hurried order to move spoiled this intention and with very little trouble we were on the move once more.

B Squadron were unlucky in the harbor as a plane was shot down and set fire to their petrol dump. We reached a fresh harbor just as dawn broke, and it says a lot for the intelligence work when we learned that our previous harbor had been heavily shelled as we got clear.

Our expectations of action were very high, but we were disappointed, for the order came that we had to move back. The Battalion Commander gave out his orders and it was a grave party. We were told that there was a strong possibility of our being surrounded, and we received instructions that we must be prepared to fight our way out and sell our lives as dearly as possible.

The road party moved off, followed by the tanks, but as we reached the station we learned that the Jerry air force had been there before us. There was nothing else to do but go on to the next station, but each time we found the stations a mass of flames. We came up against this difficulty all the way back to France, and so our tanks which were only meant to do short journeys by road had to march from Brussels to Arras interspaced with times when we had to retrace our steps to act in support rôles.

The air seemed to be filled with Jerry planes, and several times during the march they gave us special attention; our chief difficulty though was the refugees,

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*From *The Tank*, London, England.

and it was only possible to move at night or when the roads were being machine-gunned.

We duly arrived back at the Lord Gort defense line between Tourney and Orchies, and had to take up positions in front of the block houses as mobile pill boxes. This work needed quite a high standard of coöperation between Troops owing to the wide area over which our tanks were dispersed.

We stuck to this work for two days while the Jerries were making progress towards Arras in their breakthrough. We then received orders to move once more in the direction of Arras, and it took us about twenty-four hours to reach Petite Vimy, arriving there at about 2300 hours (11:00 PM).

We refuelled and were led to a harbor by night just on the reverse slopes of Vimy Ridge. We spent most of the night covering over our track marks from the road to the harbor and also attending to the points necessary for an action.

The dawn brought a Jerry reconnaissance plane over, but our camouflage was good and we had no trouble from the air. This was fortunate, as the whole Battalion was parked in a small strip of wood with a distance of five yards between tanks.

The Squadron received orders about ten o'clock that they were to be the right flank of the Battalion in an attack to the southeast of Arras. My Troop was the extreme right flank of the Battalion, and I was detailed to keep in touch with another Battalion of tanks on our right.

Orders were given of the sketchy type, as we only had three maps in the Squadron, so we all had a look at the Squadron Commander's map and picked out various objects to help us on to the final objective.

We were timed to go into action at 1400 hours, so we started to move up at 1115 hours. We took the main road from Lens to Arras until we came to a right fork, which led up to the Vimy memorial and crossed the ridge in the direction of Mount St. Elloy through Neville St. Vast.

We then turned left and this brought us round to the south of Arras. We did not expect any heavy opposition, as there was not supposed to be any heavy guns up.

We had expected our infantry to start with us, but we did not see any and so kept going. I had not any time to put my Tank Commanders in the picture, so the obvious plan was to lead with my tank, and I gave orders that they would maintain a distance of approximately 75 yards on each side of me with my tank as the Troop center line.

Our advance was over very flat country with very little cover and the first indication of the enemy was given by fire from what appeared to be light field guns firing on fixed lines.

Several of these shells burst near my Troop, but I made up my mind that they had no observation on the tanks; this was proved by the fact that the bursts lifted up behind us.

I led my Troop up a slight ridge and we came in sight of a road along which were moving several German lorries filled with troops. The utter surprise on the faces of these troops soon turned to alarm when we got our machine guns going, and it was definitely first blood to us.

We crossed this road and then had to converge on a crossing of a railway. I led my Troop across and was fanning out when I received a signal from Major Fernie, who was in his tank on the same side of the railway.

I took my tank up close to him and he gave me fresh orders for a special task. He told me there was a battery of field guns in action about two thousand yards to the Battalion flank and they had hit the Commanding Officer's tank.

He ordered me to take my Troop over to them and destroy them or, at least, neutralize their fire. I signalled my two other tanks and told them the job on hand and off we went.

On the move to the gun position we struck a sunken road and my driver managed a crossing, but my other two tanks got stuck. I got in touch with the Squadron Commander and told him about the job I had to do, and asked for support to my tank.

The Squadron had become scattered by this time and were under Troop control, so he promised to support me himself. I advanced over the crest of a small ridge and ran smack into six antitank guns. They were not camouflaged and their only cover was the fold in the ground. My point five machine gun was brought into action and I got two of them before they realized I was on them—the range was approximately two hundred yards.

The other guns started on me now and one hit the gun housing. This caused the recoil slot pin of my gun to snap and shook the gun back in the turret, jamming me between the shoulder piece and the back of the turret and incidentally causing a cross-feed on my gun.

I forced the gun back and pressed the triggers of my two smoke mortars, but they did not fire. I found out afterwards they had been shot straight off. During this time, which was only the space of a minute, they hit my tank about ten times, but none of the hits did any real damage.

They were by now picking their shots to hit and one shot carried away a spoke of my track adjusting wheel. I quickly made up my mind that the best way out was to back over the crest until I could get my gun cleared, so I gave my driver the order and we slowly zig-zagged back a distance of about a hundred yards.

I had four generators in my tank spare, so the best plan was to light one and chuck it out the top with the hope that it would give us some measure of cover. I put this plan in action and, after lighting the generator, I found my turret flap had jammed.

It was quite a shock to have a smoke generator burning in the tank with the flap jammed, but after a few seconds' struggle I managed to get the flap open and chucked two out in front. It seemed hours before we regained the cover of the ridge, but all this must have happened in the space of eight to ten minutes.

I got my gun going again and, thirsting for revenge, I returned to the attack. They must have thought I was finished, for I caught the guns limbered up moving to another position, and revenge was sweet.

I had some anxious moments with the track adjusting wheel before I persuaded it to behave with the assistance of my "special" tool, i.e., the sledge hammer!

During this time I had lost touch with the rest of the Battalion, and had a discussion with my driver as to our immediate plans. The field guns supplied the answer, so I decided to collect my Troop before having a go at them.

It took me about ten minutes to join up with the remains of the Squadron, and I received orders to proceed with my task against the field guns, who were by this time getting quite near with their shells.

I collected two Mark I tanks and a Matilda with a two-pounder gun on it, and we had a conference in the cover of a railway bridge. The bulk of the Battalion tanks had gone on ahead, so I decided to cover the flank to prevent the Germans from coming straight down the road and getting in between our tanks and our infantry. I was in doubt as to the situation, as my radio set was out of action and the first couple of shots had carried away the aerial mast.

As we were in the middle of making up a plan an attack developed down the road with infantry and tanks, and though they were coming straight down the road their guns were pointing and firing to a flank away from us.

My gun had been pointing in the other direction, but I don't think I have ever moved my turret faster in all my life, and I got on to the first tank while it was still firing in the other direction. A belt of point fives stopped him and flames started to come out of this tank, the gun stopped firing, and the remains of the crew scuttled out.

The second tank was hit by the two-pounder from our Matilda, and it met the same fate as the first one. No more tanks returned down the road, and during the action, as the first couple of shots had carried away the infantry support.

This incident pointed out to me how dangerous the flank was, and I moved up to inform the Commanding Officer, whose tank was stationary about seven hundred yards away. I found when I got up to the C.O's tank that it was out of action, the side had been blown in, and saw that the C.O. and his gunner were both dead.

I confirmed this, but could not find the driver, so I returned to my composite Troop, and we had quite an exciting time waylaying the Jerry mechanized troops, who seemed to be unaware that the road was covered.

I kept up fire on the gun positions and eventually they ceased firing. Evening had arrived and at about six o'clock we came under the rally flag flown from the Adjutant's light tank.

We rallied in a hollow and after an hour we could only muster eight tanks and about six crews who had had their tanks knocked out. We put out our guard tanks and, as I had six bottles of rum, scrounged earlier in the day, I became quite popular!

A reconnaissance plane came over and so we had to move, as the Jerry shells got close. We moved up in support of infantry, the first I had seen all day, and managed to scrounge some petrol off them.

We spent the time waiting in dividing up the ammo (ammunition) which remained on the tanks and attending to repairs on the tanks. Then we received orders that we had to stand-by to counterattack a wood about eight hundred yards away.

During this period we tried to get information as to the position, but it was all very vague. The officer in charge was now Major Fernie and he left us to do reconnaissance—incidentally, that was the last we saw of him, for he was captured, escaped, swam the River Somme, and joined us in England.

It was getting dark and we heard the rumble of a heavy tank, which we took to be one of ours looking for us. Captain Cracroft approached it and put his map case over the driver's vision slit, it stopped, the door opened and out slipped a Jerry officer!

The surprise was mutual, and Captain Cracroft lost no time in joining his tank. They fired the heavy gun at him as he doubled back and it hit my tank, but he was able to regain the safety of his tank.

All hell broke loose then—several bright Very lights lit up the road, and they rushed another tank down supported by infantry fire, but the surprise was on our side and the fire power of our eight tanks soon had its effect.

The distance between us and the attacking party was only about one hundred and fifty yards, and all we could do in the dark was to choose the center of the bursts of tracers and fire down the lines they made.

We had two tanks armed with point fives and their bigger flash made them come in for a lot of attention. My tank was hit four times by their heavy guns, but it did not have too much effect.

About ten minutes of this battle, a German lorry caught fire and this blaze enabled us to see better, but, of course, it also showed us up, and as I was nearest it I ordered my driver to reverse slowly out of the light of this fire.

This encounter lasted about fifteen minutes and it stopped as suddenly as it started. Their infantry withdrew, leaving us in full possession and their tanks were put out of action.

None of our tanks had above a belt of ammo left, so Captain Cracroft ordered us to follow him back to our headquarters. This was a very tricky business, as we

The Officers' Guide

This new and up-to-date edition of an old standby answers virtually all questions an officer could possibly ask. The extensive revisions just made in this book cover all the recent changes in Army Regulations, the Selective Service Act, and the laws dealing with extended active duty for the National Guard and Officers' Reserve Corps. There are numerous illustrations and, of course, a complete index.

No other publication contains as much information useful to officers of all grades. Every young officer called to active duty should own a copy of this book. If you are anticipating a call to duty, get set for it and buy a copy of *The Officers' Guide*. A glance at the table of contents below shows the wide range of the subject matter covered by this ready reference work.

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had no maps and were not sure of our exact position, the situation wasn't clear, and judging by the numerous Very flashes we seemed to be surrounded.

We struck the road and this was a nerve-racking business, as each road block meant either friend or foe, and we could not be sure until close to them. We had to take to cross-country work once more, and it was only brilliant leading by Captain Cracroft that we finally managed to report to our headquarters on Vimy Ridge.

I shall never forget how when we were moving down a valley on to a road a column of French tanks passed. In the light we could not be sure of their nationality, and we held our breath, expecting every minute to receive a burst of fire, but they passed and left us to wend our way home.

During this march we were always in danger of being mistaken for German tanks trying a surprise attack, and it so happened that our headquarters did mistake us and let off a Bren gun. Luckily the mistake was rectified before any damage was done.

So ended a perfect day, but there was to be no sleep for us, for after taking cover in a wood on the slopes of Vimy Ridge we were ordered to another harbor, and as my driver was dog tired I had to sit on the front of the tank and slap his face to keep him awake.

Next day came a roll call and an inspection of the tanks. In all, my tank had been hit thirty-six times, but true to its name it had stood up to it. [The tank was named Dauntless and it lived up to the tradition, Dauntless by name and Dauntless by nature.] The Squadron Commander decided that it had to be condemned as unfit, so it went on the list as a pool tank for supplying spares.

It continued to move with the tank column and when the two Battalions were combined it joined them, and the crew commander brought it back nearly to Dunkirk. The moving over cobbled streets had its effect and the vibration split the turret down a line made by eight antitank shell hits!

* * *

The lessons I learned were mostly the ones my pre-war Commanding Officer had drummed into me so often—always try to get as much advance information as possible and pass it on to your junior commanders.

Always be planning what one's action is going to be if so-and-so happens, in this way nothing is really a surprise—never work without support of at least one other tank.

Make it a habit to be proficient in all the arts of your trade, for in these days of good tank design, efficiency of the crew means a battle won—refuse to be dismayed, even if you know you are up against the much vaunted larger divisions.

Lastly, if one must die, then inflict as much damage to the enemy as possible before they write finis to you, and while there is life there is hope of getting out of a seemingly impossible situation.

National Guard Cavalry Regimental Histories*

101st Cavalry (New York). Organized as Troop B, December 16, 1895. [Federal military service. (Spanish War) May 20, 1898; redesignated Troop C, U. S. Vols.; served in Puerto Rico; mustered out November 25, 1898.] Resumed State status as Troop C; divided into Troops 5 and 6 and designated Squadron C, December 28, 1904; assigned to 1st Cavalry, December 27, 1911; former Squadron C detached from 1st Cavalry expanded into 5 troops and redesignated 2d Cavalry, May 11, 1912; additional units transferred from 1st Cavalry, November 5, 1913; 1st Cavalry disbanded and 2d Cavalry redesignated 1st Cavalry, December 10, 1913. [F—(Mexican border) June 18, 1916; stationed at McAllen, Texas; mustered out, March 13-24, 1917.] [F—(World War July 17, 1915; transferred to 102d Ammunition Train, 102d TM Battery, 104th and 106th MG Battalions, 27th Division, October 17, 1917; served with 27th and 33d Divisions in France and Belgium; mustered out, 102d TM Battery, February 4, 1919; other units April 2-3, 1919.] Reorganized as 1st Cavalry, New York Guard, in 1917; redesignated units 1st Cavalry, National Guard, 1919-1920-1921; redesignated 101st Cavalry, June 1, 1921.

Streamers authorized:

SPANISH WAR
- Puerto Rico

WORLD WAR
- Flanders
- Lorraine
- Somme Offensive
- Ypres-Lys
- Meuse-Argonne

102d Cavalry (New Jersey). Organized as 1st Squadron Cavalry, May 29, 1913, from existing and new units as follows: Troop A organized as "Essex Troop, June 3, 1890; redesignated Cavalry Company A, New Jersey National Guard, May 17, 1893; redesignated Troop 1, June 5, 1894; redesignated Troop A, May 29, 1913; Troop B, organized as Troop 2, April 24, 1895; redesignated Troop B, May 29, 1913; Troop C, organized by transfers from Troop A, May 29, 1913. Troop D, organized, August 27, 1914. [F—(Mexican border) June 21, 1916; stationed at Douglas, Arizona; mustered out, October 21, 1916.] [F—(World War) July 25, 1917; redesignated Hq. Troop, 104th Hq. and MP, Battery F, 112th Field Artillery, 29th (Blue and Gray) Division; served with 29th Division in France; mustered out, May 30-31, 1919.] Reorganized as 1st Squadron Cavalry, September 29, 1920; redesignated 1st Cavalry, March 1, 1921; redesignated 102d Cavalry, August 17, 1921.

Streamers authorized:

WORLD WAR
- Alsace
- Meuse-Argonne

104th Cavalry (Pennsylvania). Organized by consolidation of units of 8th Infantry and 1st Cavalry, June 1, 1921; reorganized without change in designation, April 1, 1929. 8th Infantry organized, June 30, 1874, from Indian units organized, 1834 and subsequently. [F—(Spanish War) May 11-12, 1898; redesignated 8th Pennsylvania Volunteer Infantry; stationed at Camp Alger, Virginia, Camp Meade, Pennsylvania, and Augusta, Georgia, where mustered out, May 7, 1899.] Reorganized as 8th Infantry, April 21-June 13, 1899. [F—(Mexican border) July 9, 1916; stationed at El Paso, Texas; mustered out February 27-March 4, 1917.] [F—(World War) July 15, 1917; redesignated with 16th Infantry, 112th Infantry, 28th (Keystone) Division, October 11, 1917; served in France with 28th Division, mustered out, May 6, 1919.] Reorganized as 8th Infantry, October 16, 1919. 1st Cavalry organized from existing and new units July 6, 1914 (see histories of units).

Streamers authorized:

SPANISH WAR
- Puerto Rico

WORLD WAR
- Champagne
- Champagne-Marne
- Aisne-Marne
- Oise-Aisne
- Lorraine
- Meuse-Argonne

106th Cavalry (Illinois-Michigan). Illinois component organized as units Cavalry Squadron, 1891-97. [F—(Spanish War) May 20-21, 1989; recruited to 12 troop regiment; redesignated 1st Illinois Volunteer Cavalry; stationed at Chickamauga, Georgia; mustered out, October 11, 1898.] Squadron resumed State status; redesignated 1st Cavalry, June 22, 1899. [F—(Mexican border) June 27, 1916; stationed at Brownsville, Texas; mustered out November 17, 1916.] Troops B, D, G assigned to 3d Field Artillery, June 24, 1917. [F—(World War) July 25, 1917; redesignated 124th Field Artillery, 33d Division, September 21, 1917; served in France and Army of Occupation in Luxembourg; mustered out, June 8, 1919.] Reorganization as 1st Cavalry begun in 1912; redesignated 2d Squadron, 106th Cavalry, December 13, 1921.

Michigan component organized as Troops A and B, 1st Cavalry, June 1, 1905 and January 29, 1908. [F—

*Official National Guard Register.

(Mexican border) July 8, 1916; stationed at El Paso, Texas; mustered out, March 23, 1917.] 1st Squadron, 1st Cavalry, organized, June 26, 1917. [F—(World War) July 15, 1917; redesignated 2d Battalion, 119th Field Artillery, 32d Division, September 17; served with 32d Division in France; mustered out, May 16, 1919.] Reorganized as 1st Separate Squadron, 1920-21; redesignated 1st Squadron, 106th Cavalry, July 1, 1921; 3d Squadron, organized April 10, 1929.

Streamers authorized:

WORLD WAR
- Aisne-Marne
- Oise-Aisne
- St. Mihiel
- Meuse-Argonne
- Alsace
- Lorraine
- Champagne

107th Cavalry (Ohio). Organized as 1st Squadron Cavalry, July 25, 1910, from Troops A and B organized in 1877 and 1902 respectively; Troops C and D organized in 1911. [F—(Mexican border) July 6, 1916; stationed at El Paso, Texas; mustered out, February 28, 1917.] Expanded to regiment and designated 1st Cavalry, April 16, 1917; redesignated units 2d and 3d Field Artillery, May 22d and July 7, 1917. [F—(World War) July 15, 1917; 2d and 3d Field Artillery redesignated 135th and 136th Field Artillery, 37th (Buckeye) Division, September 15, 1917, respectively; served in France; mustered out, April 10, 1919.] Reorganized as 1st Cavalry, 1919-20; redesignated 107th Cavalry, July 1, 1921.

Streamers authorized:

WORLD WAR
- Lorraine

112th Cavalry (Texas). Organized as 1st Cavalry in 1920 from existing Cavalry units of 3d, 5th, and 6th Cavalry, organized in 1918 for World War but not in Federal service; redesignated 112th Cavalry, July 20, 1921.

113th Cavalry (Iowa). Organized July 4, 1915, as 1st Squadron. [F—(Mexican border) July 19, 1916; stationed at Donna and Llano Grande, Texas; mustered out, February 28, 1917.] [F—(World War) July 15, 1917; Troop A redesignated Headquarters Troop, Troop B to 125th and 126th MG Battalions, Troop C to 133d Infantry, Troop D to 109th Ammunition Train —34th Division; served with 34th Division in France, not in combat; band to 301st Cavalry, served in U. S.; all mustered out, 1919.] Reorganized as 1st Cavalry, 1920-21; redesignated 113th Cavalry, November 1, 1921.

115th Cavalry (Wyoming). Organized as 1st Regiment in 1888; redesignated 1st Infantry in 1890. [F—(Spanish War and Philippine Insurrection) May 7-10, 1898; served in P. I., July 31, 1898-July 30, 1899; mustered out at San Francisco, California, September 30, 1899.] Reorganized as 2d Infantry; redesignated 3d Infantry in 1903; regimental organization abandoned and units divided into 1st and 2d Separate Battalions and Separate Company, April 29, 1915; Separate Company assigned to 2d Battalion, April 4, 1916, in place of company mustered out. [F—(Mexican border) 1st and 2d Separate Battalions, July 4, 1916; stationed at Deming, New Mexico; mustered out, March 9, 1917.] 1st and 2d Battalions consolidated and 3d Infantry reorganized, July 25, 1917. [F—(World War) 2d Separate Battalion, March 25, 1917; 3d Infantry less 2d Battalion, July 25, 1917; units transferred to 148th Field Artillery, 116th Ammunition Train, 146th MG Battalion, 41st Division, all of which served in France; only the 148th Field Artillery being in combat; mustered out in 1919.] Reorganized as 1st Cavalry in 1920; redesignated 115th Cavalry, May 1, 1922.

Streamers authorized:

SPANISH WAR
- Manila

PHILIPPINE INSURRECTION
- Manila
- Malolos
- Luzon

WORLD WAR
- Champagne-Marne
- Aisne-Marne
- St. Mihiel
- Meuse-Argonne
- Champagne

124th Cavalry (Texas). Organized, March 15, 1929, from existing Texas National Guard units.

The Cavalry Journal will carry full coverage of the 1941 Cavalry Maneuvers. It is requested that qualified staff officers be designated by unit commanders to prepare this material and that maps and photographs *suitable for publication* be included with contributions.

Unit Training Activities

Fourth Cavalry—Fort Meade, South Dakota

LIEUTENANT COLONEL JOHN B. COULTER, *Commanding*

The Fourth Cavalry, now at full strength, has been intensively engaged in all phases of training, working up to regimental combat training scheduled to commence about May 10th.

New arrivals at the post include Lieutenant Colonel Benners B. Vail, assigned as Post Executive Officer, Major Wesley W. Yale, assigned to command the horse squadron (Portée), and Major Raymond D. Palmer, assigned to command of the mechanized squadron.

An Advanced Tactics course for all officers of the regiment began last October and was concluded April 18th. These classes were conducted by Lieutenant Colonel John B. Coulter, regimental commander, and were held each Friday evening.

Command Post Exercises are being held twice weekly for the purpose of training in communications and staff procedure. In connection with these exercises, instruction in the use of cover, camouflage, antiaircraft and antimechanized measures is being given concurrently. Looking forward to maneuvers, a weekly school in umpiring has been conducted since April 18th by Lieutenant Colonel C. F. O'Keefe, regimental executive. This school has been attended by certain designated officers, but it is now planned that all officers of the regiment will attend the school.

The regimental intelligence school was conducted during the month of April for intelligence personel of Headquarters and Headquarters Troop, 1st and 2d squadrons, and the troop scouts. Instruction was divided about evenly between classroom and outdoor work.

At the present time the 1st Squadron is devoting itself to completion of range firing in all weapons, and to tactical drills in which control features of the squadron, troop and platoon are stressed. Valuable use of a loudspeaker sound truck is being made by the 1st Squadron in their drills. By this means instruction and control are greatly facilitated.

Anxiously awaiting the arrival of their "bantam" cars, the 2d Squadron is engaged in range firing of all weapons, including the moving vehicle course, and in all phases of combat training.

With the arrival of 14 selectees for the 4th Cavalry Medical Detachment, that unit is now at full strength. It is divided into squadron sections, each section receiving its cavalry training with the squadron to which assigned.

The training activities of the regiment were inspected on April 25th, by Lieutenant Colonel C. H. Gerhardt, GSC, representing GHQ. The Corps Area Annual Inspection of the Post was conducted by Lieutenant Colonel Sexton Berg, Inspector General's Department, during the period April 23-25, inclusive.

Now that spring has returned to Fort Meade, outdoor recreational activities are in full swing. A regimental softball league, with entries from all units, is functioning with great enthusiasm, and several supervised trips to points of interest in the Black Hills have proven very popular with the men. The regimental newspaper, *The Fourth Cavalry Scout,* has just published its sixth issue, and has optimistic plans for the future. It is planned to continue publication of the paper in the field during maneuvers.

April 7th was observed as Army Day at Fort Meade. A regimental review was held in the afternoon, before an estimated attendance of 1,500 Black Hills residents. A great deal of publicity was given the event by all local newspapers and radio stations, and much favorable notice accrued to the 4th Cavalry as a result.

* * *

Fifth Cavalry—Fort Bliss, Texas

COLONEL H. J. M. SMITH, *Commanding*

Since its arrival at Fort Bliss in February, the Fifth Cavalry in addition to training activities has been busy making the camp more comfortable for its personnel. A limited landscaping project is being accomplished through the planting of trees, hedges and shrubs with a view of not only beautifying the camp area but of eventually utilizing the hedges as wind breaks in the tent areas.

The training in the Regiment has been progressing rapidly, and by May 10th, the phase of instruction which includes squad, platoon and troop training will have been completed. In conjunction with this training program, the following schools have been conducted:

Officers' Equitation Class
Noncommissioned Officers' Equitation Class
Intelligence School
Buglers' School
Umpires' School.

The Regiment during the month of April turned to duty with their respective troops, two hundred and eighty-seven (287) Selective Service men and recruits from Detachments No. 1 and No. 2 who have completed their six (6) week period of recruit instruction. Records in the Personnel Section show approximately 50 per cent of these selectees to be either skilled or semi-skilled.

Two hundred and forty (240) remounts from the Fort Reno Remount Depot, the second group assigned to the Regiment since its arrival at Fort Bliss were received on Monday, April 14th. The horses were assigned to troops and were placed in working quarantine. Under the supervision of Lieutenant Colonel Glenn S. Finley, the remount detail is doing excellent work in training the new horses and will turn the major portion of them to duty in the near future. A large portion of the horses received were already trained for troop duty upon arrival. The remainder will be turned to duty as soon as their training warrants it.

Light machine-gun mount

New Light Machine Gun Mount

Under the supervision of Major Hugh F. T. Hoffman and Lieutenant Donald W. Kaspervik, an addition to the tripod for the Light Machine Gun has been developed and is undergoing tests. The new mount is in the form of an extension which may be added to the standard M2 Tripod and makes the gun more suitable for defense against low-flying aircraft. The extension is extremely valuable in terrain such as is found around Fort Bliss, where small sand dunes and desert vegetation make a horizontal field of fire very limited to guns utilizing the M2 tripod as issued.

The new extension raises the elevation of the gun above the tripod about twenty inches.

Exhibit No. 1 shows the extension in pack. No. 2 illustrates its removal from the pack. No. 3 shows it being carried into position with the tripod. No. 4 shows the gun being placed in the extension. No. 5 illustrates its use in a horizontal position and position of gunner and assistant, and No. 6 demonstrates its use as anti-aircraft defense against low-flying planes.

* * *

On April 7th, the Regiment participated in the observance of Army Day. The entire Fort Bliss area was open to inspection by visitors during the day, and during the afternoon the Regiment took its place in the Division Review. Immediately following the review, a demonstration of Portée Cavalry tactics by a composite platoon composed of squads from Troops "E," "F" and "G," commanded by Second Lieutenant Alvin T. Netterblad, with an attached platoon of scout cars, motorcycles and Bantams commanded by Second Lieutenant William A. Bownds, Jr., which acted as a protective screen during the motor movement and the unloading. Following this demonstration, the Mortar Platoon of Special Weapons Troop, commanded by Second Lieutenant Edwin O'Connor, Jr., gave a demonstration showing hasty action and firing of the 81-mm. Mortar.

The First Cavalry Brigade Training Sweepstakes for all officers of the Brigade below the grade of Captain was held at the Armstrong Polo Field and Hunt Course on Tuesday, April 15th. The course consisted of a 300-yard dash, a saddling race, cross-country ride of about 3 miles, dismounted pistol and rifle shooting, saddling of a new mount, jumping phase of 8 jumps, unsaddle —ride bareback over one jump, dismount and lead over the finish line.

Out of a large field of contestants, a tie for first place between Second Lieutenant Jackson E. Shirley, 5th Cavalry, and Second Lieutenant James R. Spurrier, 12th Cavalry, resulted. The time for both contestants over the course was 25 minutes. These officers received duplicate awards of two silver goblets. Presentation of trophies was made by Major General John K. Herr, U.S.A., Chief of Cavalry. The trophies were donated

by the Division Commander, Major General Innis P. Swift, U.S.A., and by the Brigade Commander, Brigadier General John Millikin, U.S.A.

During the week of April 21-25, the Regiment participated in a beneficial four-day field exercise of the First Cavalry Brigade, in the vicinity of the Fort Bliss Target Range.

The Division Alert signal was sounded Monday, April 28th. The tactical situation called for a movement of the 5th Cavalry as part of the Division, to a point 15 miles east of Fort Bliss, where the Regiment bivouacked and an outpost from the regiment, under Brigade control, was established for the night. The Regiment returned to Fort Bliss the following day.

A school for all officers of the Regiment, covering the subject "Training in Umpire Methods" has been established with Major Woodbury M. Burgess as instructor. The school will be of two weeks' duration and will familiarize all officers with umpire methods in preparation for contemplated maneuvers in the near future.

A Regimental Horseshow was held on April 5th in the camp area. Outstanding horses and riders of the show were selected to represent the Regiment in the Division Horseshow.

During the month of April, the Regiment was host to Mr. Ernie Pyle, popular syndicated columnist, who spent the night as guest of Troop B.

* * *

Proud Fighting Men

By Ernie Pyle★

Fort Bliss, Texas.—The Fifth Cavalry, with which I am bunking in for a while, is 86 years old.

It was organized at Louisville, Kentucky, in 1855, and its first commander was Robert E. Lee. It served throughout the Civil War, helped capture Alexandria, Virginia, from the Confederates, and fought at Bull Run, Antietam, Gettysburg, Appomattox.

It has fought Indians all over the mountains and prairies of the West. It has served in Puerto Rico, the Philippines and Hawaii. It chased Villa in Mexico.

Twenty-seven of its enlisted men have received the Congressional Medal of Honor, America's highest award. It is an old and war-scarred regiment, and exceedingly proud.

* * *

Cavalry today is much different from what it was last century; even much different from what it was 20 years ago. There are those who pass cavalry over lightly as a thing of the past, but you'd better not say that seriously to a cavalryman.

The day is gone when it was the policy of cavalry to attack while mounted. Today cavalry carries terrific fire power, and its main theory is to get that fire power to the point of battle over country which mechanized equipment cannot negotiate.

This sandy, cut-up desert land of the border area is where cavalry shines.

A cavalry regiment today is not just horses and men and rifles. It is also trucks and trailers and machine guns and howitzers and antitank units and scouts.

* * *

If the Fifth Regiment were suddenly to receive orders into battle 150 miles down into Mexico, it wouldn't saddle up and charge out on a forced ride across the desert. Everything, including the horses, would go into trucks and trailers.

It would dash forward to battle on its rubber-tired wheels, and go to the point where wheels could no longer negotiate the sand and the humps. Then the horses would be unloaded and packed quickly, and would continue on toward the enemy.

And then, when contact was made with the enemy, the cavalrymen would dismount, set up their guns and start shooting. And they can do all this faster than it takes to tell it.

They can stop from a full gallop, unpack and assemble a howitzer or a machine gun, aim and have it firing in nine seconds! I've seen them do it. Horses, men and machines all flow in one swift, harmonic movement. It is thrilling to watch.

* * *

On my last day at Fort Bliss, the whole First Cavalry Division passed in review before Major General Swift and Major General John K. Herr, Chief of Cavalry, who was visiting from Washington.

It was a Saturday morning. When we arrived, we could see the men lined up in vast formation far across the bare, flat desert. The generals and their staffs and all the flag-bearers were on this side of the vast parade ground.

Then the band started to play and the two generals, both hale and agile men past 60, dashed forward on their horses, followed by three horsemen carrying standards on poles.

They reached the assembled regiments on the far side, and rode the entire length in front of them, and then the entire length behind them. They went at a gallop, riding plenty hard, and it was impressive to see them ride so fast.

They rode back and took their places out front, still mounted, to receive the review. The band blew an order, and that great black mass on the far side began slowly to move.

The troopers were close-packed. They must have been riding 20 or 30 abreast, row after row, until it seemed that all the horses in the world were assembled there.

Dust rose from the column, and underneath you could see the prancing hoofs of fractious horses. Some-

★From Mr. Pyle's syndicated column, May 5, 1941.

how it had the character of an irresistible force on the move; it had a grandeur that I have seen produced before only in movies. It was a massive grace.

A friend of mine from Cleveland, on his first trip to the Southwest, stood and watched with an almost reverent admiration. And when he was told that between a third and a half of these 6,000 riders had never been on a horse until two months before, he was unbelieving.

It was an impressive spectacle. It made something glow inside of you. And when at last the old Fifth Cavalry came in its turn and lowered its standard in salute, and all its men rode past with the slow, massed rhythm of perfectly trained movement, I'll swear I felt almost as much pride in them as though I had really honestly belonged to the regiment.

7th Cavalry—Fort Bliss, Texas

LIEUTENANT COLONEL F. W. BOYE, *Commanding*

The first part of March was devoted to combat firing by the various troops of the Regiment. Regimental, Brigade, and Division CPX problems made the month of March a very complete training schedule.

During the month of April the training schedule of the Seventh Cavalry was slightly interrupted by Warner Brothers' Motion Picture Company in the making of the picture "Here Comes The Cavalry," in which the Seventh Cavalry "Garry Owens" were the chief participants. Rather than hindering the troops in their regular training, it was a great help in promoting a regular turn out of the troops. The officers and men put their various units through all the tactical formations necessary to show the operations of Horse Cavalry. In order to select terrain for the various tactical situations the troops moved some distance from the post and worked overtime in order to get their regular assigned duties and training accomplished.

The Seventh Cavalry is now practicing river crossings in coöperation with the 8th Engineers as preparation for extensive maneuvers in the swamplands of Louisiana. The Regiment practiced crossing the Ascarate Lake, a new park lake built by the County of El Paso for the recreation of nearby inhabitants. The lake is one hundred (100) yards wide and approximately one mile long.

The first problem was one of river crossing in which dismounted squads, using squad assault boats, cross the stream and secure the opposite ground thus forming a bridgehead or protecting force to cover the crossing of the main body.

The second phase was the construction of a footbridge. This was swiftly accomplished, eight minutes only being required to bridge the 100-yard stream.

The final phase was construction of a bridge to support mounted troops. All horses, including a great number of new remounts, crossed without difficulty. Similar success in other tactical training indicates the Seventh Cavalry will not fail to maintain its high standard in performance of duty during the coming maneuver period.

The training of small units the size of squads and platoons is the present objective of the Regiment. Competition between the various platoon leaders on their skill in handling platoons in varied tactical situations is contemplated for the near future.

THE SEVENTH WINS FIRST CAVALRY DIVISION HORSESHOW

After a short but profitable period of preparation, the 7th Cavalry entered the 1st Cavalry Division horseshow on April 8th, and wound up victorious in respect to final unit standing. In the class for remounts we made a superior showing, winning the first three places. Other winnings included:

1st in Horsemastership (recruits)
1st in Officers' Chargers
2d and 3d in Open Jumping (enlisted men)
3d in Open Jumping (officers)

The excellent showing made by the regiment was largely the result of the continued work of a handful of noncommissioned officers including: First Sergeant Witaski, First Sergeant Shrout, Staff Sergeant Long, Staff Sergeant Ford, and First Sergeant Brett. These men either rode or had previously trained every entry in the show.

REMOUNT

1st—*Captain Easy,* Sergeant Walter Witaski.
2d —*Oregon,* Sergeant Clarence E. Long.
3d —*Raney,* Sergeant Ambros Shrout.

HORSEMASTERSHIP (Recruits)

1st—*Cloudy,* Private Walter C. McMillan, MG Tr.

OFFICERS' CHARGERS

1st—*Taps,* Lieutenant Scott M. Case.

OPEN JUMPING (Enlisted Men)

2d —*Navigator,* Sergeant Walter Witaski.
3d —*Top Load,* Sergeant Robert L. Ford.

OPEN JUMPING (Officers)

3d —*Ugly,* Captain Franklin F. Wing, Jr.

ATHLETICS

The Seventh Cavalry Athletic Program is under way on a large scale. Six hundred and thirty ($630.00) dollars were obtained from the Division Athletic Officer for the purchase of athletic equipment. A new baseball diamond has been built and electric lights are to be installed for evening ball games.

Lieutenant Grant E. Jones, Regimental Athletic Officer, is training a boxing team to participate in the 1st Cavalry Division boxing tournament. With a few professional fighters as his assistants the motto "The Seventh First" will in all probability be maintained.

The Chief of Cavalry Arrives

Major General Herr, Chief of Cavalry, visited the Seventh Cavalry shortly after his unheralded arrival at Fort Bliss, driving with Major General Innis P. Swift, Commander of the 1st Cavalry Division, to the scene of a field exercise being conducted by both squadrons of the regiment in the vicinity of the Hueco Mountains.

This exercise, held for the purpose of instructing junior officers and enlisted men, commenced at five o'clock on the morning of April 16th, after the Squadrons had spent the night in separate camps. Sealed orders, opened at this time, directed the Squadron Commanders to maneuver against assigned objectives. Colonel Gilbreath and Lieutenant Colonel Boye acted as umpires for defensive and offensive, respectively. At the conclusion of the exercise a critique was held. During the critique the Chief of Cavalry and General Swift arrived upon the scene. After a short review of the exercise by Colonel Gilbreath, a brief talk was given by General Herr on the use of horse patrols, their bold seeking of vital information; the importance of curtailing the length, and strictly limiting the number of communications in the field. This, relative to speeding up cavalry operation in the field.

On the following day the Seventh Cavalry held a demonstration for General Herr in which each troop participated as follows:

Sequence	*Troop*	*Demonstration*	*Time*
1.	SW Tr.	Plat. Cal. .50; Mortar Section	8:30 AM
2.	2d Sq.	Approach march; Covering force	8:40 AM
3.	MG Tr.	Cross country; Hasty action	9:00 AM
4.	HQ Tr.	Comm. Plat.: Message Center	9:10 AM
5.	Tr "B"	Dismounted Action	9:20 AM
6.	Tr "C"	Sq. in Pistol Attack	9:25 AM
7.	Tr "A"	Full Pack: Mounted Troop	9:30 AM

The above sequence moved swiftly to completion, one demonstration following another with no time break. General Herr was pleased to find that the regiment was training the small combat teams to a high degree of proficiency.

Letters of Commendation

Letters of commendation have been received from Colonel Gilbreath, the Commanding Officer of the Regiment and Major General Innis P. Swift, 1st Cavalry Division Commander, for the enthusiasm and efficiency displayed by the regiment during the filming of the picture "Here Comes The Cavalry." Although participation was an official duty, it was performed in a manner that brought praise and appreciation from the entire Warner Bros. staff.

Notes

The regiment regrets the loss of its Commanding Officer, Colonel Frederick Gilbreath, who left for duty at the Port of Embarkation, Fort Mason, California, on May 1st. On April 29th, the officers of the Seventh Cavalry gave a party for their departing Commanding Officer in the traditional "Garry Owen" style. Lieutenant Colonel Boye will command until further orders.

* * *

Colonel and Mrs. Gilbreath gave a tea for General and Mrs. Herr and their daughter Miss Fannie Herr. All officers and ladies were invited. The event gave the officers of the Seventh Cavalry a chance to meet General Herr, the present Chief of Cavalry and a former commander of their regiment, and an opportunity to discuss the events of the day.

* * *

Major Henry S. Jernigan left on April 16th for a course commencing on April 21st, at the Command and General Staff School, Ft. Leavenworth, Kansas.

* * *

History of Original Painting "Custer's Last Stand"

This original canvas was painted by Cassily Adams, and is nine feet, six inches wide and sixteen feet, five inches long. The painting was painted on a canvas wagon cover issued by the Ordnance company at that time. It is now hung in the Post Officers' Club at Fort Bliss, Texas, for the reason that the 7th Cavalry has no building large enough to display it. Mr. Adams painted the picture according to Scout Curley's version of the battle of the Little Big Horn, June 25, 1876.

The 7th Cavalry regimental history files show that Mr. Adams completed the painting in 1888, and sold it to a John Ferber who owned a saloon in St. Louis, Mo., in which the painting hung for approximately six years. The late Adolphus Busch, Sr., desired a scene that depicted the west and purchased the painting from the estate of the late Mr. Ferber in 1892, and displayed it in the Anheuser Busch, Inc., reception room. According to Mr. Busch the painting was purchased at the price of $35,000.

At the outbreak of the Spanish American War in 1898, Mr. Busch presented the painting to the Seventh Cavalry, then stationed at Fort Riley, Kansas. The presentation took place during the ceremony in the old consolidated Mess Hall (Now the Post Exchange Building), at Fort Riley. Captain J. M. Bell, Regimental Adjutant, 7th Cavalry, acted as Chairman and Colonel George A. Forsythe, Regimental Commander at that time, received the picture in behalf of the regiment. A number of officers who participated in the battle of the Little Big Horn were present at the ceremony and made speeches describing the battle.

During the period from 1909 to 1922 the picture was rolled on a tent pole and stored in the Quartermaster

Warehouse at Fort Bliss, Texas, the regiment was constantly changing station during this period. In 1922 the painting was retrieved from the Quartermaster warehouse by the 7th Cavalry Regimental Supply Officer and placed in the Regimental Supply storeroom until 1934; at this time it was unrolled and arrangements were made for the renovation of the painting.

This picture was renovated by Mr. Raymond O. Richards, Assistant Director, Federal Art Project, November 14, 1938, at Fort Bliss, Texas.

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8th Cavalry—Fort Bliss, Texas

COLONEL JOHN K. BROWN, *Commanding*

Rapid expansion of the U. S. Army has caused many changes in the regiment since January 1st. Cadre regiments for new organizations and other stations have depleted the ranks of many noncommissioned officers and men, including such old timers as Master Sergeant Frank Wojohosky, First Sergeant Harry G. Zink, who had been with the regiment since 1917, First Sergeant Andrew J. Miller, Sergeant William R. McLain, with the regiment since 1919, Staff Sergeant Oliver D. Milton, with the regiment since 1920, Corporal Andy B. Cehand, with the regiment since 1921, Sergeant Ruben T. Vona and Sergeant J. J. Mullings, with the regiment since 1923, Sergeant Glen L. Franklin, with the regiment since 1924, Sergeant Andrew J. Williams, with the regiment since 1926, Sergeants John B. Durham and Harold J. Young, with the regiment since 1927, Sergeant Jack Mann, with the regiment since 1928, Sergeant Rollo J. Heckert, with the regiment since 1929, and Sergeants James H. Sanderlin and Dale Woosley, with the regiment since 1931.

A total of 302 enlisted men have been lost in this manner.

Basic training has been given to 350 selectees who are now shaping up into first class troopers. Many grand remounts were enrolled in Lieutenant Colonel John H. Irving's grammar school for Cavalry horses, and 876 received diplomas.

Tactical training for small units, squad and rein-

forced platoon, has been stressed during this period. Over-night marches in January and February were conducted by the troops. Each squadron, reinforced, spent a week in the field during April. Particular emphasis was placed on night marching and night maneuvering, and a great deal of training was obtained by all concerned, horses as well as men.

A controlled night ride over a 20 mile course for all Lieutenants was held on February 7th. The use of compass bearings over a good part of the terrain was necessary, while visibility, movement and tempers were taxed by every possible weather obstacle, including dust, wind, rain, snow, and cold. Despite keen competition and enthusiasm, perseverance eventually resulted in victory and pot money for Lieutenant R. E. Meyer, Headquarters 2d Squadron, first place, and Lieutenant A. J. Maurel, Motor Officer, second place.

A group of United Press writers and staff officers from General Headquarters, Washington, were treated to a demonstration by a war strength troop from the Second Squadron in action against an enemy motor column in January.

The demonstration was conducted in the form of a combat exercise fixed on the gravity range at Castner. Twelve improvised, miniature trucks were rolled down the mountain side simultaneously to provide the target. Despite an attained speed of over 30 miles per hour during descent, all cars were hit many times and only three escaped being burned before reaching the bottom. The newspapermen expressed surprise and pleasure at the speed with which the troops were able to go into action and the accuracy of their fire against a fast moving target.

Officers schools are being conducted each Saturday by the regimental commander, many of these being in the form of tactical rides. These rides, in bringing out tactical principles in the employment of cavalry, have generated much discussion and have proved very beneficial as a practical form of instruction. Culminating in the "bondocks" at a point from which exude the fragrant odors of broiling steak sandwiches and brewing coffee prepared by details from Headquarters Troop, the rides, according to all concerned, reach a delightful and befitting cdlimax.

Classes in horsemanship for both officers and noncommissioned officers have continued throughout the fall and winter.

In preparation for the Division Horse Show held on April 18th, the regiment, during March and April, conducted a series of informal Sunday shows. The utility of these was shown by the results obtained in the Division Show. Individual honors were won by Major Thomson on his *Reno Jerry* with a first in the open hunters class; Major Drake on his *King Hi* with a first in the open jumping class; Major Biddle on *Reno Hawk* with a second in the open hunters class; Lieutenant Jeffress on *Sadie* with second in the Officers Chargers' Class; and Private Edwards, Troop "F," with a second in Recruit Horsemanship. However, emphasis is being placed on developing new riders and remounts, of which there are many good ones.

Early spring polo practice on the sand field occupies most Wednesday and Saturday afternoons.

Keen personal interest is being taken by the regimental commander and other field officers in this valuable means of training officers and horses, and many excellent ponies and riders are being developed. A new boarded sand ring is being taken advantage of for horse training as well as a new fenced ring on the western edge of the drill ground.

The first two days of May found the regiment holding its periodic test of tactical training. The exercise was so designed as to test the reinforced platoons of each troop in march discipline, horsemastership, use of weapons, and the employment of the cavalry platoon on a combat mission in hostile territory. The platoon was conducting routine pistol practice at Winfrees Nose when it received orders that sent it on a 20 mile march through enemy country. During the march the platoon was confronted by several tactical situations that finally culminated in a combat problem with ball ammunition during which the supporting fire of the light machine guns to assist the close-in envelopment by the balance of the platoon was emphasized.

During this period the following changes in officer personnel have taken place: To the Philippine Department, 2d Lieutenants A. K. Whitehead, D. B. Troglia and C. I. Cahoon; to aide-de-camp to Major General Swift, 1st Lt. Roy Lasseter, Jr.; to 1st Reconnaissance Squadron, Captain R. W. Porter, Jr., 1st Lieutenants J. Fishback and L. Caton, Jr.; 2d Lieutenants J. D. McGuire, A. G. Robinson and S. E. Teaff, Jr.; to the 10th Cavalry, Captains N. M. Winn and F. H. Gaston, Jr.; to Headquarters Troop 2d Cavalry Brigade 1st Lieutenant E. T. Guenther; to the 5th Cavalry, Captain J. M. Broadwell, VC; to Headquarters 2d Cavalry Brigade Weapons Troop 2d Lt. J. P. Whitehead; to Fort Knox, Lieut. Colonel L. LeR. Martin; to Division Anti-Tank Troop, 1st Lieut. J. Berg; to 12th Cavalry, Major Alexander M. Miller, III; to the Armored Force, Major K. G. Hoge.

The following officers joined the regiment: Majors E. F. Thomson, W. S. Biddle, K. G. Hoge and R. A. Drake, Captains A. F. Dworak, MC, and F. M. Burkey, VC, 1st Lieutenants G. S. Downer, Jr., I. L. Howell, and W. W. Phillips, and 2d Lieutenant J. C. Gerhart.

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10th Cavalry—Camp Funston, Fort Riley, Kansas

LIEUTENANT COLONEL PAUL R. DAVISON,
Commanding

The last two months have been busy ones for the 10th Cavalry.

After the regiment's arrival here the middle of March it started in on getting settled in its new home, and training selectees and remounts.

Shortly after the first of April the regiment received the rest of their selectees and 340 remounts to bring it up to its authorized strength and it is now well along on its thirteen weeks' training program.

The Second Army Commander, Lieutenant General Ben Lear, visited the Camp on April 9th. After participation in a division review with other units of the 2d Cavalry Division the regiment was inspected in all phases of its training.

On April 25th a regimental review was held in honor of the Division Commander, Brigadier General Allen.

A softball league has been organized within the regiment and a regimental baseball team to play in the Division league is being organized.

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11th Cavalry—Seeley, California

COLONEL HAROLD M. RAYNER, *Commanding*

Moving into the home stretch of selectee and remount training after a brief break for observance of the Regiment's fortieth anniversary May 5, 1941, the 11th Cavalry, under leadership of Colonel Harold M. Rayner, continues its "all out" effort to bring men and horses to the traditionally high level of Cavalry efficiency.

Despite handicaps imposed by personnel and animal cadre losses, by a change of station to an entirely new territory, and by an influx of new officers, 700-odd selectees and nearly 800 remounts, the Regiment has met difficult schedules of intensive training; will turn its new men to duty May 31.

For officers and men two events brought a welcome relief from drill and schooling during the past month: Army Day was celebrated at the Seeley and Campo stations April 7, and both the Regiment and the detached 2nd Squadron staged Organization Day ceremonies May 5.

That the 11th Cavalry has earned a place in the community life of the Imperial Valley was demonstrated April 7 when a crowd of 8,000 people (exceeding expectations of attendance by 5,000) thronged the Seeley camp for Army Day. Faced with problems of inadequate equipment and a dearth of experienced troopers to "put over" a show, Colonel Rayner had, nevertheless, set in motion the machinery which, engineered by a joint military-civilian committee, produced a bang-up program. Provisions for handling a crowd of 3,000 were made—and during the afternoon of the open-house, throngs more than double that number crowded through troop streets, mess halls and stables to view arms and equipment displays, and to witness a two-hour demonstration of motor and horse elements which culminated in presentation of selectees in their first Retreat parade.

Organization day was celebrated at the desert station and included presentation of selectees to the Standards, address by the Regimental Commander, a reading of the regimental history by the junior Regular Army officer, and an informal horse events program under direction of Major W. J. Bradley, S-3. The morning program was followed by organization dinners; an afternoon holiday. Included on the gymkhana program were classes in novelty jumping, potato race, tug-of-war, mounted wrestling and remount and recruit classes.

The 2nd Squadron at Campo varied its observance by staging a dismounted gymkhana May 5. It had previously held a horse show and mounted gymkhana with civilian organizations participating April 27.

Since the Regiment's move to the Imperial Valley in November of last year it has undergone two inspections of training by higher headquarters. Fourth Army experts viewed combat problems by both squadrons late in January and on May 1 an inspector from General Headquarters, Washington, scanned departmental activities of the MTP 2-2 training. This second inspection was marked by an entirely new departure for the 11th Cavalry when senior non-coms replaced officers and staged a dismounted parade before the ranking master sergeant and the inspector, who, incidentally, was Lt. Col. C. H. Gerhardt, a former squadron commander and operations officer of the regiment.

The Scout Car Platoon was given a welcomed opportunity for combined training April 28-29 when it was invited to participate in a motor march in the Cuya-

maca with the 8th Regiment of Marines. It was the first extended jaunt for the new M3A1 cars with which the Regiment was equipped in March. Lt. Glenn C. Ames commands the platoon.

Picked gunners and drivers of the Seeley garrison showed Hollywood "how it's done" last February when the Scout Car platoon and a composite light machine gun platoon demonstrated tactics and technique of their cars and weapons for the benefit of Scenarists William Ulman and John Grey of the Academy of Motion Picture Arts and Sciences. Ulman and Grey, with the technical assistance of Major John Ballantyne, Cavalry, were preparing scenarios for a War Department training film on the employment of these two platoons. This month Lt. Col. Alton W. Howard, 11th Cavalry, was designated technical advisor for the Light Machine Gun Platoon film, which will be photographed here. Lt. Claire S. Curtis, 11th Cavalry, will command the picked platoon for the film.

Sites for combat training areas were inspected earlier this year by Lt. Gen. John L. DeWitt, Fourth Army commander. He was accompanied by his aide, and Lt. Cols. James Bradley (Army G-3) and Gustav Braun (Corps Area G-3). A dinner given by the El Centro Chamber of Commerce for the General and officers of the camp followed the inspection.

Provisional regimental horse show and pistol teams have been formed for temporary periods during the past several months for participation in valley shows and matches. The intensive training program does not permit permanent teams with regular practice periods.

Commissioned ranks, since last report, have been augmented by the following reserve officers: Major Verne Austin, Bakersfield; Capt. Robert F. Bates and Lloyd G. Buchler, both of Sacramento; Capt. Marvin C. Clark, La Jolla; Capt. Albert P. Ebright, Los Angeles; Capt. Wm. A. Hill, Long Beach; Capt. Ben Hooper, Los Angeles; Capt. John A. Magee, Norfolk; Capt. H. J. Rosenberg, San Francisco, and Lts. Edward Boust, San Francisco; E. A. Bright, Charles Fife, Frank W. Fruitman, Joseph Kazerman, J. B. O'Connor and Nathan Carll of Los Angeles; C. O. Brown of San Diego, C. W. Carlson of Southgate; George F. Wilson of San Gabriel; Charles Yon of Piedmont; David Coale, Glendale, and Edwin Ramsey of Manhattan Beach.

Regular Army additions include Lt. Col. Frederick Herr, new executive officer, and Major A. N. Willis, who commands the 1st Squadron. Losses: Capt. James Snee (to Armored Force) and Lt. Stephen Downey (aide to Gen. Terry Allen). Lt. Snee commanded Troop F; Lt. Downey, Machine Gun Troop.

12th Cavalry—Fort Bliss, Texas

COLONEL WILFRID M. BLOUNT, *Commanding*

An Officers' Club was organized on March 12, 1941 and a constitution adopted. The club is known as the "Twelfth Cavalry Officers' Mess" and is controlled by a Board of Governors elected as follows: Major Henry L. Kinnison, Jr., Captain Raymond C. Adkisson, 1st Lieut. John G. Anderson, 2d Lieut. James R. Spurrier and 2d Lieut. Rowland H. Renwanz. Colonel Wilfrid M. Blount is ex-officio President and 2d Lieut. Edward K. Duncan is Secretary-Treasurer of the club. The object of the club is to promote entertainment for officers of the 12th Cavalry, their families and their guests.

The Regiment is now filled up with 1,474 horses. Selectees have been turned to duty and 212 more will join their troops in a few days. 240 remounts were turned to duty in April and 192 will complete their remount training during May.

In the night ride held for Lieutenants of the 1st Cavalry Brigade to demonstrate their ability to find their way across country under cover of darkness, and to judge their ability at estimating their rate of travel without the use of a watch, the 12th Cavalry was very successful. Contestants rode in pairs over a course totaling eighteen miles in length divided into six stages. The 12th Cavalry furnished the winners of first place and ties for second place. The first place winners were David J. Loyd and Norvell R. Stark, 1st Lieutenants, 12th Cavalry; and 1st Lt. Rhea A. McWilliams and 2d Lt. Michael W. Kelly, 12th Cavalry tied for second place with 1st Lt. Charles L. Stahler and 2d Lt. Harry C. Grigsby, Headquarters Troop, 1st Cavalry Brigade.

In the Modified Standard Stakes, held on April 15th by the Commanding General, 1st Cavalry Brigade, the 12th Cavalry again met with due success. This contest started and finished at Armstrong Polo Field and consisted of a cross-country race, rifle firing, Hurdling Course, pistol firing, and a bareback ride to the finish. There was a tie for first place between 2d Lt. James R. Spurrier, 12th Cavalry and 2d Lt. Jackson E. Shirley, 5th Cavalry with each being awarded a cup by the 1st Cavalry Brigade. The 12th Cavalry Officers' Mess awarded trophy cups to the next three highest scores from the 12th Cavalry which were awarded to 1st Lt. Richard Alexander, 1st Lt. Levin L. Lee and 1st Lt. Michael S. Davison. A good time was had by all and these tests are to be encouraged.

The regiment was in the field from April 21 to 25 inclusive in a brigade maneuver. The maneuvering area was in the vicinity of Hitts Ranch, Dona Ana Range, and Berino with a night march from Hitts Ranch back to Fort Bliss. During this period a number of minor administrative and supply irregularities were ironed out so that the regiment was well prepared for the Division alert which came two days later and involved an overnight exercise near the Hueco Mountains. The 12th Cavalry was an efficient, smooth functioning unit receiving many comments.

Training tests are being conducted for all units and the regiment is making rapid progress towards a high tactical proficiency to be put to good use during the summer maneuvers.

13th Armored Regiment (L)—Fort Knox, Ky.

COLONEL R. E. McQUILLEN, *Commanding*

The fortieth anniversary of the organization of the 13th Cavalry, now the 13th Armored Regiment (Light) was observed here Thursday (May 1st), in a 45-minute ceremony at the regimental parade ground.

Formed in a three-sided formation facing the reviewing stand, the officers and men were addressed by Brigadier General Jack W. Heard, former colonel in command of the regiment, now in command of the Armored Force Replacement Center at Fort Knox; Colonel R. E. McQuillin, present commanding officer; and Lieutenant Colonel Clarence C. Benson, regimental executive and an officer originally assigned to the regiment in 1914. A brief history of the regiment was read by Lieutenant Robert B. Borchers. Atop the reviewing stand, in rear of the reviewing officers, were the color guard and the bugle corps.

The old 13th Cavalry, organized at Fort Meade, South Dakota, on May 1, 1901, under the command of Major Thaddeus W. Jones, has participated in two wars. In 1903, the regiment saw service in the Philippine Insurrection, and in 1916 it served in Mexico as part of General Pershing's punitive expedition.

One of the columns of the 13th Cavalry advanced the farthest south into Mexico of any of the American troops pursuing Villa. Another column formed part of the rear guard of the punitive force when U. S. Troops were withdrawn from Mexico, making the 13th Cavalry the first in and last out of Mexico.

The 13th Armored Regiment is now under the command of its seventeenth colonel. A former commanding officer of the regiment is Major General Charles L. Scott, now in command of the 1st Armored Corps.

Most of the service of the 13th has been in Western camps. In July, 1936, the regiment was transferred to Fort Knox to become the second mechanized regiment of cavalry in the United States. On July 15, 1940, the 13th Cavalry (Mechanized) was changed to the 13th Armored Regiment (Light) and became a light tank regiment in the 1st Armored Division.

The regimental insignia, known as the "Chalbedon," includes the history of the regiment and bears the regimental motto, "It Shall Be Done." Green on gold, and circular in form, it is easily recognized on the uniforms of the officers and men of the regiment. The blazing sun in the center is taken from the seal of the state of South Dakota, regimental birthplace. The crossed sabres across the face of the insignia represent the basic Cavalry organization. The palm branch forming the right side of the circle commemorates the service in the Philippines, and the cactus branch forming the left side is for service in Mexico. On a scroll suspended from the hilts of the sabres is the motto awarded by the War Department—IT SHALL BE DONE.

Sixth Reconnaissance Troop—Fort Riley, Kansas

CAPTAIN F. C. BRIDGEWATER, *Commanding*

Upon returning from a practice march to Fort Bliss, Texas, early in February, the troop lost its first commander, Major (now Lieutenant Colonel) M. E. Jones, who so ably organized and trained it.

On February the fifth, Captain Bridgewater assumed command, relieving Major Jones, who was under orders to attend the Command and General Staff School, Fort Leavenworth. During March, First Lieutenant R. E. Nelson and Second Lieutenant Walter J. Davies graduated from specialist schools at the Cavalry School and returned to the troop for duty. First Lieutenant William F. Beaty left the troop at this time to attend the Basic Horse and Mechanized Course at the Cavalry School. The troop has been very fortunate in being able to send a considerable number of enlisted men to various technical schools throughout the army, and their knowledge gained thereby has aided considerably in bringing the troop up to its present high standard of training.

Until March 23d, the troop was engaged in completing its basic training. Since that date the training has been of a more advanced nature, consisting of at least one command post problem and one combined field exercise each week. Although the troop has received no radios, exercises have been conducted using mounted messengers. The command post exercises have been of such a nature that commanders of platoons, sections and cars have had an opportunity to employ their commands tactically, operate unit message centers, and send and receive messages. In the combined field exercises the presence of both enemy and friendly troops was assumed, and the troop reconnoitered areas about twenty-five miles wide and one hundred miles in depth, operating during the night at well as during the day. These exercises started one day and terminated the next. Making and breaking bivouac under the cover of darkness without lights was part of the problems. These exercises were conducted with the view of stressing the tactics of reconnaissance, the issuance of orders, security and cover in bivouac, communications, supply and maintenance, all during combat. Quite a bit of interest was displayed by the entire troop and everybody enjoyed getting into the field and doing the things they had talked about so much in troop schools during the earlier training.

The training of radio operators has been continuous with code practice equipment EE-81-A. During field exercises, radio operators operate message centers, and follow the same procedure in sending and receiving messages, that they would use if they actually had sets. About seventy-five per cent of the troop has been trained in radio operation, and, at present, many qualified operators are available to take the field.

The troop conducted various tests with Bantams for the Cavalry Board and found that they were capable of

replacing the tricycle and the motorcycle, and that when used with scout cars they make a fine reconnaissance vehicle. A .50 caliber gun mounted on a pedestal mount in a Bantam was tested by firing, for stability and suitability. The test was a complete success.

The troop has recently converted a two and one-half ton cargo truck into a rolling kitchen complete with ranges, ice boxes, lights, etc. We have found it indispensable in the field.

On the 24th of March the troop moved to temporary barracks in the 2d Cavalry Division area at Camp Funston.

Recently orders have been received for the troop to join the Sixth Division at Fort Leonard Wood, and to arrive there on the 15th of May. Packing has already commenced, and although the troop is reluctant to leave its first home, everyone is anxious to actually start training with the Division.

In spite of being in quarantine for measles during the greater part of March and April, the morale of the troop is quite high, indicated by the spirit displayed in platoon competitions and in troop athletics.

* * *

106th Cavalry (H-Mecz)—Camp Livingston, La.

LIEUTENANT COLONEL CHARLES R. JOHNSON, JR., *Commanding*

Three hundred and forty-four Inductees have arrived and joined the Regiment and are now in their tenth week of training. These men are all of extremely high quality and have been well received by the older men in the Regiment. It was a matter of surprise to the Regiment that announced policies had not been followed out in their assignment, as there were many men among them who were not residents of the Regiment's home state. They arrived, for the most part, without boots and breeches. These articles, however, were supplied at a later date from the Corps Area of Origin. The Inductees have been separated for training into two distinct groups—one horsed and one mechanized. It was a distinct pleasure to see the Inductee platoons participate in a Mounted Review with the Regiment in their fourth week of training.

To date, no tractors for the horse vans have been received, but training for the van drivers has, nevertheless, progressed satisfactorily. The local constructing contractors kindly allowed our van drivers to ride as assistants on the constructing company's semi-trailers, and, after a week of this, permitted our drivers to do all the driving. This experience has been invaluable.

With regard to weapon training, it is the Regiment's policy, as fast as ammunition becomes available, to fire those men who have never before fired, rather than to attempt to give any one man the complete prescribed course. As a result of this policy every man in the Regiment is now familiar with the pistol and with his principal weapon.

The Regimental Band is greatly in demand. It frequently plays, by invitation, for regiments that themselves have bands. It sponsors weekly entertainments and burlesques for the men of this Regiment.

The Officers' Mess has been refinished, at private expense, being paneled half way up in a walnut finish topped with a light colored paneling above. The ceiling has been beamed in walnut and a fire-place added in one corner. Coats of Arms of all Cavalry Regiments are placed in a frieze around the room. Ladies of the Regiment are permitted in Camp for Wednesday night dinner and are welcomed on the Sunday mornings when we have a hunt breakfast. Upon occasion, the Wednesday evening meal is supplanted by a barbeque.

A steeplechase course is being constructed around the Camp. Many of the jumps will be of a permanent nature. To the west of Camp we are constructing a setup that we hope will closely approximate the Fort Riley hippodrome.

The log palisade and cabins to house the Regiment's 588 machine guns are rapidly nearing completion. This is located in the motorpark and will be a labor saver. Heretofore, some caliber .50s have had to be carried nearly a quarter of a mile. In as much as the crest on the Regiment's Coat of Arms is a blockhouse, the palisade is rather appropriate.

One troop of the Regiment is being furnished, in rotation, each week to Corps Engineers who are making a bridge reconnaissance of the maneuver area. This has afforded valuable instrutcion to the men, and has, in addition, familiarized them with a great deal of the surrounding territory.

The Regiment has done a great deal of bivouac by troop, the average unit spending between two and three nights a week in the field. Headquarters Troop recently returned from a march to the Gulf of Mexico where many men saw and felt salt water for the first time.

A snake house has been built in the Area for the purpose of familiarizing all the men with dangerous snakes. Troops returning from bivouac keep this house well supplied. Lieutenant Yoggerst, who is one of the Regiment's two authorities on snakes, is the only man bitten, so far. A rattler gave him an unpleasant week in the hospital. He is now collecting more snakes.

Since the last notes, the Executive, Lieutenant Colonel Plaisted, and the S-3, Major C. F. Sleeper, have returned from the Command and General Staff School. Major Roy D. Keehn, Jr., Captains Charles R. Bean, Joseph Temple, John L. Kracke, and Kenneth C. Haycraft are attending the Horse-Mechanized Course at the Cavalry School. Lieutenant John D. Tarpening is at Riley, taking the Motors Course, and Lieutenant Roscoe C. Buckles, the Communications Course. Several other officers have recently attended, or are attending, short four-weeks courses at Normoyle and Fort Wayne. Thirteen very welcome horse-shoers have recently returned from the Course at Fort Benning.

Entering into the spirit of the locality, the Regiment has adopted, as its Regimental Call, "Mammy's Little Babies Love Shortenin' Bread."

113th Cavalry (H-Mecz)—Camp Bowie, Texas

COLONEL MAXWELL A. O'BRIEN, *Commanding*

The regiment is now in the final phase of the first thirteen week program. The combined regimental training was started during the week commencing May 5th and will continue throughout the week of May 12th. The training is somewhat hampered because of lack of radio equipment, a sufficient number of 2½ ton Cargo Trucks, and the truck tractors for the animal and cargo trailers. In spite of this, the field exercises are believed to be progressing in a satisfactory manner.

Four hundred and fifty recruits for this regiment arrived in two trains on March 28th and March 30th, from Ft. Snelling, Minn. Their training was immediately commenced under the supervision of officers and non-commissioned officers of the regiment who were detailed from each troop and detachment.

A second group of officers are attending the Basic School at Ft. Riley, Kansas and a number of enlisted men are attending the various specialists schools. Two of our officers are enrolled at the Command and General Staff School at Ft. Leavenworth, Kansas and a second group of officers are acting as umpires for the Third Army and Eighth Army Corps.

The first shipment of solo motorcycles was received recently and the Mechanized Squadron is taking full advantage of them for training.

The range firing for the regiment was practically completed with the firing this week on the anti-aircraft range. Qualifications for known distance firing were: Rifle 73%, Pistol (Dismounted) 62.9%, Machine Gun, Cal. .30 Heavy 76.9%, Light Machine Gun 82.4%.

The regimental area is being constantly improved upon. It is expected that within a short time additional construction will provide further buildings, including officers club, day rooms, and other buildings that will be welcome additions.

Army Day afforded this regiment the honor of leading the parade at Camp Bowie. Major General Krueger, Commanding General of the Eighth Army corps was the reviewing officer.

The regiment is looking forward to the period of Combined Training and later the Army maneuvers.

124th Cavalry—Fort Brown and Fort Ringgold, Texas

COLONEL CALVIN B. GARWOOD, *Commanding*

The close of the first 13 weeks of training since induction into Federal Service on November 18th found the 124th Regiment occupying posts in the lower sector of the U.S.-Mexican border, the Second Squadron at Fort Ringgold, and the remainder of the regiment at Fort Brown.

Despite a siege of wet weather, the training of the organization has progressed without interruption and with a minimum of interference. Beginning with weekly overnight marches by troops, these now are conducted by all units at Fort Brown, at first under control of the squadron and later under regimental control. At least two tactical exercises were conducted on each of these movements.

A shortage in organizational equipment promised to be more or less of a handicap; the regiment at this time having but one mortar and one .50 caliber machine gun, while only recently has the supply of saddles been adequate. The regiment has a number of M-1 rifles, but it is not yet equipped with a sufficient number of these arms. Transportation also has felt the pinch, as a number of organizational trucks have been withdrawn from the regiment.

Since arrival at Fort Brown 432 remounts have been received, and an additional 117 are expected at an early date. Shoeing of these horses presented quite a problem, but this also was solved by pooling all the horseshoers to do the work.

The regiment was brought to full authorized strength on March 9th by the arrival of 109 selectees. These were organized into a group separate from other organizations for training purposes, while assigned to troops for administration. Non-commissioned officers specially trained for the purpose in a refresher course are detailed as instructors for this group, permitting the conduct of selectee training without interference with the progress of more seasoned men, since the instructor detail is rotated through the various troops. The selectee group has fired the preliminary course with the .22 caliber rifle and is now firing the "B" Course.

Cavalry personnel at Fort Brown was inspected by Colonel Gilbreath, representing the Third Army, and on April 11th the brigade commander, General Walter B. Pyron, conducted a training inspection of the units here, both having previously inspected the troops at Fort Ringgold.

Regimental headquarters is now installed in Post Headquarters, having moved its furniture and personnel from temporary quarters on March 20th.

Army Day was celebrated by the regiment with a demonstration to which the citizens of the Rio Grande Valley were invited, and the response to which was very satisfactory, more than 3,000 visitors having been counted when tallying of their number ceased early in the afternoon. Those who called were conducted by guides through the post and introduced to all the phases of a soldier's life, from the weapons and methods by which they are used to the housekeeping and recreation methods through which his comfort and welfare are accomplished. A dismounted parade was held in the

afternoon, attended by General Arturo L. Allatorre, commandant of the garrison of Matamoros.

Captain J. William Wiseheart, First Lieutenants Byron P. Sadler, and James D. Jamison, Second Lieutenants Ballard C. Pearson, William A. Wood, Thomas J. Newton and Joe N. Fraza, Jr., who attended the Cavalry School, and Captain Edward A. Compton, who attended the Command and Staff School, have rejoined the regiment. Absent on details to school are Captains Andrew G. Peden, William J. Miles and George B. Bennett, First Lieutenants Melvin H. Ehlert and Robert W. McIlvain, Jr., at the Cavalry School; Second Lieutenant Harry P. Pfeiffer at Communications School, Fort Riley; First Lieutenant Michel E. Levy and Second Lieutenant Julius F. Spencer at the Motor Course, Fort Riley; Second Lieutenant Allan M. Grant at Chemical Warfare School, and First Lieutenant John D. Jerabeck, M. C., at the Medical Field Service School.

The Motorcycle Platoon of Headquarters and Service Troop has received its quota of eight solo motorcycles and is busy training all members of the platoon as drivers. The tricycles for the platoon have not yet been received.

The eighth edition of the *124th Cavalry News*, published weekly by the regiment, made its appearance May 3rd. The newspaper is issued weekly, managed and edited by former newspaper men now in the service, and carries no advertising, being strictly a regimental enterprise. It is very popular with all members of the regiment, both at Fort Brown and at Fort Ringgold.

A polo club has been organized among the officers at Fort Brown, comprising 33 members. The advice of Colonel Arthur H. Wilson, Cavalry, Post Commander, and a former polo player of note, assisted materially in the organization of the club, which has played a number of practice games since its inception.

Major General John K. Herr, Chief of Cavalry, included Forts Brown and Ringgold in an inspection of training on April 26th. In a talk to officers of the regiment before his departure, General Herr reaffirmed his faith in horsed Cavalry, and expressed himself as well pleased with the progress of training in the 124th.

Both squadron commanders have been separated from the regiment, Major John W. Naylor of the First Squadron having been transferred to VIII Corps Staff, and Major Charles K. Davis, commanding the Second Squadron at Fort Ringgold, has been detailed as an umpire for Army Maneuvers. Major Jule R. Smith was relieved as regimental operations officer to succeed Major Naylor in command of the First Squadron.

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Book Reviews

RIFLE MARKSMANSHIP. By William L. Stephens, Jr., Lieutenant, Ordnance Reserve, U. S. Army. A. S. Barnes and Company, New York, 1941. 88 Pages; $1.00.

This is another of the Barnes Dollar Sports Books. It is particularly designed to help the individual who wishes to improve his score. Members of the school, college and club .22 caliber rifle teams will find this book a practical guide.

The author describes and illustrates the technique of rifle marksmanship in the following chapters: *You, Too, Can Become An Expert Marksman; The Target Rifle; .22 Caliber Long Rifle Ammunition; The Sporting Scope; The Shooting Coat & Glove; The Score Book; The Rifleman's Kit; Regulation Shooting Positions; Sights, Sighting and Aiming; Trigger Squeezing; Breathing and Holding; Cleaning and Care of the Rifle; Target Reading and Wind Direction* and *Range Routine.*

TOWARD A NEW ORDER OF SEA POWER. By Harold and Margaret Sprout. Princeton University Press, 1940. Illustrated and well documented. 332 Pages. $3.75.

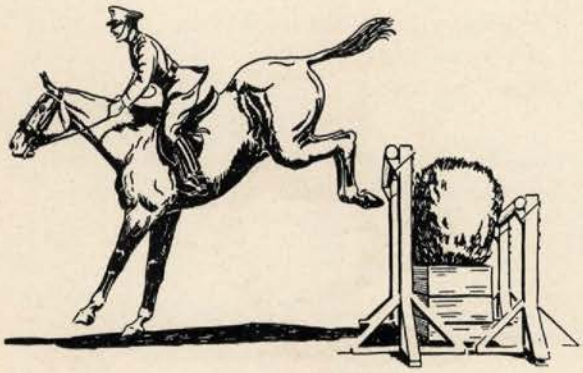
"This book continues the story which these authors began so brilliantly in *The Rise of American Naval Power.* Their earlier book was focused on the national scene. Diplomacy, wars, and naval events abroad figured in its pages, but mainly as they influenced the pace and direction of American naval development. Their new book is focused on the world scene. The influences shaping American naval growth still command attention. But the canvas is now broadened to include the rôle of sea power in general, and of American sea power in particular, following the Great War of 1914-1918.

"This book is no mere historical treatise. Its every page has a peculiar timeliness today. The fundamental nature of sea power and the conditions of its exercise, the limits of American naval power, the air-power vs. sea-power controversy, the future sea power in Europe, in the Western Hemisphere, and in the Far East, all these and many other crucial present-day questions were studied and discussed before and during the Washington Conference. Those earlier discussions provide indispensable background for an understanding of the latest act in the European tragedy, as well as for a sound judgment on our own critical problem of national defense."

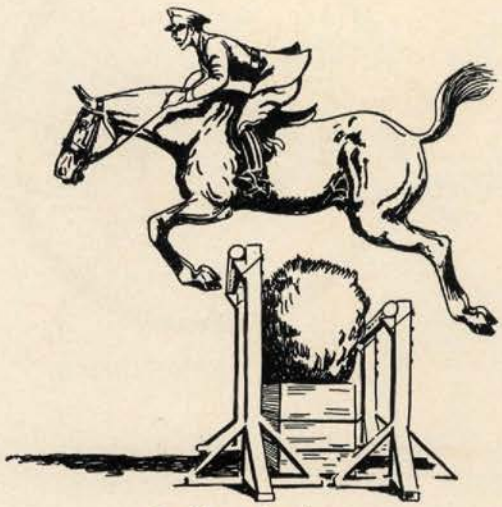
A PATHFINDER IN THE SOUTHWEST. Edited and Annotated by Grant Foreman. University of Oklahoma Press, Norman, Oklahoma. Illustrated. 298 Pages; $3.00.

A railroad to the Pacific Ocean was a conception born of the events following the Mexican War.

"In command of the southernmost surveying commission sent out was a young officer of the Topographical Engineers, Lieutenant A. W. Whipple. He was ordered



4—Landing



3—Over the jump

OVER OBSTACLES - - - -

to find the most likely route between Arkansas and Los Angeles following, generally, the thirty-fifth parallel. His command, in addition to an escort of dragoons, was composed of qualified civilian scientists, mineralogists, astronomers, naturalists, and artists. Not only were their observations of assistance to the subsequent transcontinental railroad lines, but their new trail furnished a route for an increasing number of covered-wagon caravans.

"Whipple's 'itinerary' remains one of the most interesting, authoritative, and human journals on the Southwest, as it was before settlement. With the enthusiasm of a young man realizing his responsibility, he let nothing escape his observation. He describes the Indians and frontiersmen whom he met (many of them famous in the history of the West); the now famous ruins which he and his colleagues discovered; the Mexican settlements they visited; and with great clarity the wild, untrammeled beauty of an area unintruded by plow or white man."

This book is of particular interest to those who have or hope to motor over U. S. Highway 66.

✓ ✓ ✓

FROM PANAMA TO VERDUN. By Colonel Philippe Bunau-Varilla. Dorrance and Company, Philadelphia, Pa., 1940. 277 Pages; Illustrations; $2.50.

This is an autobiography and the story of the Panama Canal written by the man who started it for the French and who later induced the United States to finish it. He also planned the cross-channel tunnel from France to England; solved the Dreyfus case; lost a leg at Verdun in World War I; and died just before the Nazis entered Paris in 1940.

This book is an epic work and should interest Americans.

MY FIRST WAR. By Captain Sir Basil Bartlett, Bt. The Macmillan Company, New York. 131 Pages; $1.25.

This is an army officer's journal for May, 1940—through Belgium to Dunkirk. Here is British nonchalance and dry humor at its best. It is an intimate collection of impressions of the disaster that overtook the B.E.F. in Belgium and France, written by a man in a key position to know conditions behind the scenes. His diary, not professing to be authoritative, is full of sharp observation and classic English restraint. His job was to thwart enemy attempts at espionage, sabotage and propaganda.

✓ ✓ ✓

AMERICA IN ARMS. By John McAuley Palmer, Brigadier General, U. S. Army (Retired). Yale University Press, New Haven, Conn. 207 Pages; $2.00.

"America throughout her history has never been ready to meet the threat of war. She has fought each of her wars with unnecessary wastes of blood and treasure, and after each of them she has refused to prepare herself for the next one. All this in spite of the fact that in the very beginning Washington gave the United States a simple, economical, and democratic plan that would have prepared her for every military crisis in her history.

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This volume gives us something specific to consider in our future planning.

★★★

Horse Feathers

No Argument

MOTORCYCLE MP: "Didn't you hear me yell to you to stop?"

SCOUT CAR DRIVER: "No, Sarg!"

MP: "Didn't you hear me whistle?"

DRIVER: "No, Sarg!"

MP: "Didn't you see me signal?"

DRIVER: "No, Sarg!"

MP: "Well, you can't *see* nothin', and you can't *hear* nothin'—Can't you *think* nothin'?"

DRIVER: "No, Sarg!"

MP: "Pass on, *Monkey!*"

SERGEANT A: "What's that trooper's name—Don Juan?"

SERGEANT B: "No, that's Ben Loving; and that's his sweetie, Ann Howe!"

Old Timer advises: "Never play around the *flagpole.*"

Ready—Aim—?

"Halt!" cried the young recruit on his first sentry-go. The major halted.

"Halt!" the rookie cried again.

"I've halted," snapped the major. "And now what?"

"Well," faltered the John, "in the manual it says: 'Say halt three times, then fire.' "

Believe It, or Else

From lesson assignment sheet, Lesson I, Army Extension subcourse, Defense against Chemical Warfare:

"There is no difficulty in associating CN with Chloracetophenone; DM readily suggests Diphenylaminechlorarsine. Such symbols impose no strain on the memory."

SERGEANT: "You don't even know the King's English!"

RECRUIT: "I do, too; he sure ain't American."

Helpful

MEDICAL EXAMINER: "Let's see, Lad, have you any scars?"

TRAINEE: "No, sir, but I have a pack of cigarettes in my coat pocket."

Never send a man to do a boy's job; nor a boy to do a man's job.

"It was terrible!" said Mrs. Jones. "There were fifty sailors and a cavalryman killed in the wreck."

"Indeed!" said Mrs. Smith, "The poor trooper!"

It does not pay to be so busy doing so many things that you forget what you are supposed to be doing.

Confidentially

"Do you know, Mother," said the Colonel's little daughter, "Daddy's orderly is a good Christian like we hear about in Sunday School, because this morning when he was holding Daddy's remount, the horse stepped on his foot, bit his arm and then kicked him down. And, Mother, all he did was brush himself off, sit down right there on the curb and tell God all about it."

"Charge it!"

"What name?"

"Trooper Zazvorkinski."

"Take it for nothing," the druggist said languidly. "For a nickel, I wouldn't write potassium permanganate and Zazvorkinski."

"Sis, why do you go to dances with that big lummix of a cavalryman? You know he can't dance."

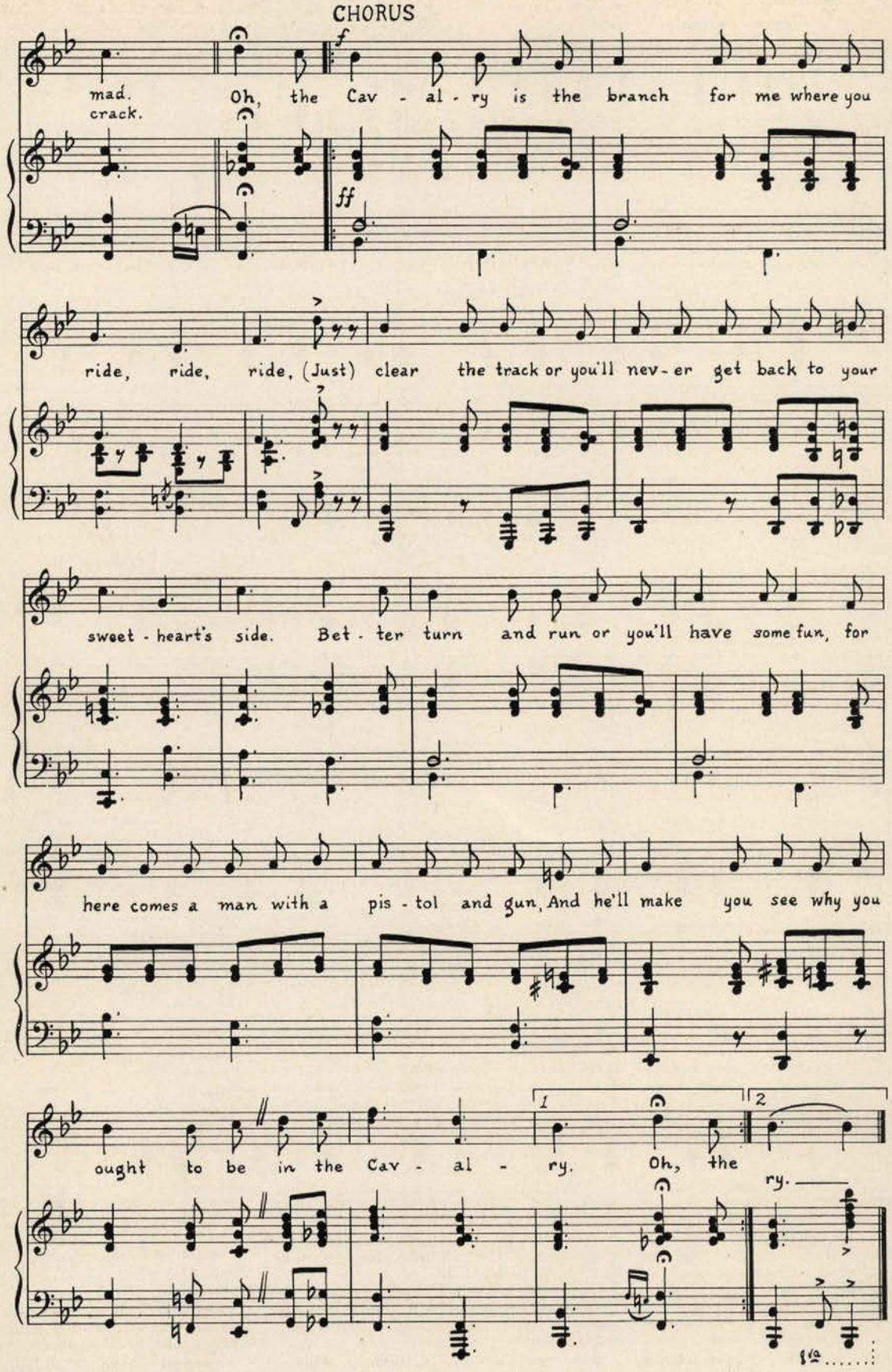
"Maybe he can't dance, but boy! How he can intermission!"

"What's the matter, Trooper?"

"Wish somebody would make Sergeant Major Stired read that rubber tire article in this issue. He's *over-inflated.*"

A Cavalry Song

Words and Music by Lieutenant Colonel Ronald H. Peters*



*Copyright, 1940. Colonel Peters, formerly a cavalryman, is now S-3, 75th Field Artillery Brigade, Camp Forrest, Tennessee.

War Department Changes

Cavalry Personnel

(From March 16, 1941 to May 19, 1941)

Captain Robert M. Bacher, from Ft. Sam Houston, Tex., to Ord. Works, Baytown, Tex.

Captain Lewis R. Stretch, March 28, to duty with AGD.

Major J. K. Baker, relieved as military attaché to Greece, Athens; assigned as military attaché, Bagdad, Iraq.

Second Lieutenant Flournoy H. Barksdale, from Ft. Knox, Ky., April 14, to Virginia Military Institute, Lexington, Va.

Lieutenant Colonel James W. Barnett, Presido of San Francisco, Calif., to GSC, 4th Army.

Lieutenant Colonel William T. Bauskett, Jr., from Ft. Knox, Ky., to commanding officer of troops on the USA Transport *J. Franklin Bell,* Ft. Mason, Calif. Sail New York, April 5, 1941.

Captain Robert H. Bayne, from Ft. Stotsenburg, P. I., to duty with QMC.

Major W. S. Biddle, relieved Fort Bliss; assigned as assistant military attaché, London, England; to report in office, A. C. of S., G-2, Washington D. C., May 12, for temporary duty.

Colonel Robert Blaine, relieved Philippine Islands; assigned Hq., 9th C. A., Presidio of San Francisco for duty pending retirement, sailing from Manila for San Francisco, July 15.

Captain James N. Bossidy, from Westover Field, Mass., April 15, to Bolling Field, Washington, D. C.

Lieutenant Colonel Frederic W. Boye, Fort Bliss, Tex., to Acting C. of S., 1st Cav. Div., that station.

Lieutenant Colonel Harry L. Branson, from Pueblo, Colo., not later than April 15, to CO of troops on USA transport *Henry T. Allen.*

Captain F. C. Bridgewater, relieved 6th Recon. Troop, Fort Riley; assigned 7th C. A. Service Command, that station.

Colonel N. B. Briscoe, assigned command of Fort Knox.

Captain Frank H. Britton, from West Point, N. Y., June 16, to 1st Armored Division, Ft. Knox.

First Lieutenant R. W. Bristol, relieved Ft. Custer, March 29; assigned staff, Cav. School, Fort Riley.

Major C. V. Bromley, Jr., detailed as member of G. S. C.; assigned G. S. with troops, March 14, and Hq., 1st Armored Div., Fort Knox; relieved present duty with that division.

Lieutenant Colonel W. E. Buchly, relieved Fort Rosecrans; assigned 3rd Armored Division, Camp Polk, La.

Lieutenant Colonel H. A. Buckley, relieved Alameda High School, Calif., May 1; assigned 3d Armored Div., Camp Polk, La.; previous orders revoked.

Lieutenant Colonel Malcolm Byrne, relieved St. Mel High School, Chicago; assigned 2d Armored Div., Fort Benning.

First Lieutenant P. F. Cannon, relieved 9th Cav., Ft. Riley; assigned staff, Cavalry School, that station.

Lieutenant Colonel J. N. Caperton, relieved present duty at Fort Riley; assigned 4th Cav. Brig., that station.

Lieutenant Colonel Marion Carson, relieved U. S. M. A., June 30; assigned 1st Cav. Div., Fort Bliss.

Captain T. W. Chandler, relieved Fort Benning, April 21; assigned 4th Cav. Brig., Fort Riley.

Colonel F. K. Chapin, assigned command of Pine Camp, N. Y.

Colonel G. W. Chipman, relieved as instructor, Illinois N. G., Chicago; assigned Armored Force R. C., Fort Knox.

Lieutenant Colonel McFarland Cockrill, detailed in I. G. D., May 21; relieved 56th Cav. Brig., Fort McIntosh; assigned 2d Cav. Div., Fort Riley.

Major E. P. Crandell, detailed A. G. D., April 8; relieved Fort Riley; assigned A.G.O., Washington, D. C.

First Lieutenant William M. Cummings, from Ft. Riley, Kans., to Philippine Dept. Sail N. Y., June 21.

Captain J. O. Curtis, Jr., relieved Fort Bliss, April 15; assigned Hq., IX Army Corps, Ft. Lewis.

Major C. K. Darling, relieved 1st Cav. Div., Fort Bliss; assigned 8th C. A. Service Command, Fort Bliss.

Lieutenant Colonel F. C. DeLangton, relieved 1st Cav. Div., Fort Bliss, April 1; assigned 6th C. A. Service Command, Sault Sainte Marie, Mich.

Colonel M. A. Devine, Jr., orders amended to assign him 1st Cavalry Division, Ft. Bliss.

Lieutenant Colonel T. G. Dobyns, relieved detail in I. G. D., and C. Z.; assigned 1st Armored Div., Fort Knox.

Lieutenant Colonel Frederick F. Duggan, prior orders amended; from Philippine Dept., to Fort Knox, Ky.

Lieutenant Colonel Harold E. Eastwood, from Ft. Riley, Kans., to O. C. of S., Washington, D. C.

Colonel K. B. Edmunds, relieved as assistant commandant, C. and G. S. School, Ft. Leavenworth, August 1; detailed O. R., 8th C. A., San Antonio.

Second Lieutenant John Z. Endress, from Stockton, Calif., to AC Basic Flying School, Moffett Field, Calif.

Colonel H. M. Estes, relieved office, C. of S., Washington, D. C., May 5; assigned office, C. of Cav., Washington, D. C.

Lieutenant Colonel C. W. Fake, relieved Fort Riley; to proceed home and await retirement; unexpired leave of absence revoked.

Lieutenant Colonel Waldemar A. Falck, from Tucson, Ariz., May 1, 1941, to 4th Cav. Brigade, Ft. Riley, Kans.

Captain Houston S. Farris, from Ft. Riley, Kans., April 3, 1941, to 1st Cav. Div., Fort Bliss, Tex.

Major C. W. Feagin, relieved Glendale High Schools, Calif., June 1; assigned 11th Cav., Camp Seeley, Calif.

Lieutenant Colonel H. E. Featherstone, relieved Central Catholic High School, San Antonio; assigned Hq., 8th C. A., Fort Sam Houston.

Lieutenant Colonel P. C. Febiger, relieved as instructor, Wyoming N. G., Cheyenne; assigned 1st Armored Div., Fort Knox; previous orders amended.

First Lieutenant David McC. Flournoy, III, Washington, D. C., to office C. of S., that station.

Lieutenant Colonel H. W. Forster, relieved Mattoon High School, Ill., June 1; assigned 3d Armored Div., Camp Polk, La.; previous orders revoked.

Major H. W. Frazee, detailed as member of G. S. C.; assigned G. S. with troops, and will report to Comdg. Gen., 35th Div., Camp Jos. T. Robinson for duty with G. S. C.

Major James W. Fraser, from Fort Sheridan, Ill., March 30, 1941, to office AG; Washington, D. C.

Captain W. B. Fraser, relieved Fort Riley, assigned U. S. M. A.

First Lieutenant Frank B. Gamsby, from Langley Field, Va., May 12, to New Orleans, La.

Lieutenant Colonel R. H. Garity, relieved Univ. of Illinois, Champaign; assigned 3d Armored Div., Camp Polk, La., June 4.

Major Jack G. Gault, from Ft. George G. Meade, Md., May 18, to Hq., Armored Force, Fort Knox, Ky.

Lieutenant Colonel Louis G. Gibney, from College Station, Tex.; April 1, 1941, to Univ. of Ariz., Tucson, Ariz.

First Lieutenant Robert R. Gideon, Jr., from Kelly Field, Tex., to Randolph Field, Tex.

Colonel Frederick Gilbreath, relieved 7th Ca., Fort Bliss; assigned San Francisco Port of Embarkation, Fort Mason.

Second Lieutenant E. W. Grant, relieved 4th Cav., Fort Meade, S. Dak.; assigned Spartan School of Aero., Tulsa, Okla., April 30.

Lieutenant Colonel W. R. Hamby, relieved Columbus high schools, Ga., May 12; assigned 3d Armored Division, Camp Polk, La.; to report at Camp Beauregard for temporary duty until June 1.

First Lieutenant Joseph K. Hamilton, from Pope Field, N. C. to Charlotte, N. C.

Captain J. F. Haskell, relieved Ft. Bliss, Texas; assigned O. C. of S., Washington, D. C.

Captain P. D. Harkins, relieved Ft. Myer; assigned U. S. M. A.

Lieutenant Colonel Ernest N. Harmon, from Ft. Knox, Ky., to office, C. of S., Washington, D. C.

Captain R. S. Harper, relieved, Ft. Bliss; assigned 3d Armored Div., Camp Polk, La.

Major E. L. Harrison, relieved Hq. 9th Div., Fort Bragg; assigned office, C. of S., Washington, D. C.

Second Lieutenant Frank C. Healy, from Ft. Meade, S. Dak., to Cavalry School, Fort Riley, Kans.

Captain Adolphus K. Heyner, Ft. Hayes, Ohio; det. with G. S. C., 5th Corps Area, that station.

Lieutenant Colonel Harrison Herman, relieved 8th C. A. Service Command, Ft. Bill; assigned 1st Cav. Div., that station.

Lieutenant Colonel W. B. Higgins, relieved 107th Cav., Camp Forest, Tenn.; assigned Hq., V Army Corps, Camp Beauregard.

Captain Cecil Himes, relieved 7th Div.,

Fort Ord.; assigned 6th Reconnaissance Troop, Fort Riley.

Major K. G. Hoge, detailed in A. G. D., May 7; relieved 1st Cav. Div., Fort Bliss; assigned 2d Cav. Div., Fort Riley; previous orders revoked.

Captain S. W. Holderness, relieved Fort Riley; assigned U. S. M. A.

Lieutenant Colonel C. A. Horger, relieved Ashland High School, Ky., May 10; assigned 9th C. A. Service Command, Camp Callan, Calif.

Captain Frank DeK. Huyler, Jr., from Westover Field, Mass., April 10, to GHQ Air Force, Bolling Field, D. C.

Major C. C. Jadwin, relieved as assistant military attaché to Italy; assigned as military attaché to Sofia, Bulgaria.

Captain R. V. D. Janzan, relieved Fort Devens, Mass.; assigned to Cav. Brig., Ft. Riley, Kansas.

Major H. W. Johnson, relieved U.S.M.A.; assigned 3d Cav. Brig., Fort Riley, Kans.

Captain M. W. Kane, relieved Western Military Academy, Alton, Ill., May 15; assigned 3d Armored Div., Camp Polk, La.; to report at Camp Beauregard for temporary duty until June 1.

Lieutenant Colonel Charles S. Kilburn, Washington, D. C., to office, C. of S., Washington, D. C.

Colonel Stanley Koch, relieved recruiting duty, Houston, Tex.; assigned that duty at Hq., 8th C. A., Fort Sam Houston.

Lieutenant Colonel Renn Lawrence, relieved Chicago high schools; assigned 3d Armored Div., Camp Polk, La., after temporary duty at Camp Beauregard until June 1.

Colonel Clarence Lininger, relieved civilian component affairs duty, Hq., 2d C. A. Governors Island, May 1; assigned 2d C. A. Service Command, Fort Hamilton.

Colonel Aubrey Lippincott, retired from Los Angeles, Calif., May 31, because of disability.

Captain N. A. Loeb, relieved A. C. B. F. School, Montgomery; assigned 4th Cav. Brig., Fort Riley.

Major Glen C. McBride, Ft. Hayes, Ohio, det. with G. S. C., 5th Corps Area, that station.

Captain J. F. McCaslin, relieved 107th Cav., Shakerheights, Ohio; assigned office, C. of Ord., Washington, D. C.

Captain Josiah N. Macy, from Ft. Devens, Mass., to office, C of Staff, Washington, D. C.

Major H. G. Maddox, relieved 1st Cav. Div., Fort Bliss, and temporary duty at C. and G. S. School, Fort Leavenworth, June 21; assigned 3d Armored Div., Camp Polk, La.

Lieutenant Colonel J. E. Maher, relieved N. G. duty, Hq., 3d C. A., Baltimore, April 22; assigned 3d C. A. Service Command, Ft. George G. Meade, Md.

Captain Robert M. Mann, Ft. Hayes, Ohio, det. with G. S. C., 5th Corps Area, that station.

Major Charles C. Meehan, prior orders revoked; from Ft. Bragg, N. C. to 4th Cavalry Brigade, Ft. Riley, Kans.

Second Lieutenant M. C. Meigs, relieved 1st Cav. Div., Fort Bliss, assigned 2d Armored Div., Fort Benning.

Captain F. D. Merrill, assigned as assistant military attaché, Tokyo, Japan, in addition to his present duties there.

Captain David A. Miller, from Ft. Riley, Kans. to Philippine Dept. Sail San Francisco, June 12.

Lieutenant Colonel J. G. Monihan's orders amended to sail from San Francisco for Philippine Islands, June 12.

Lieutenant Colonel H. H. Neilson, relieved Nashville high schools, Tenn.; assigned 4th Armored Div., Pine Camp, N. Y.

Lieutenant Melvin N. Nyquist, relieved Ft. Riley, Kans.; assigned to P. I. Dept.

Lieutenant Colonel William Van D. Ochs, from Wilmington, N. C., to 4th C.A.S.C., Camp Stewart, Ga.

Second Lieutenant I. W. Overland, assigned with Q. M. C., March 24, and as assistant to constr. Q. M., Fort Bliss; relieved 8th C. A. Service Command, Fort Sill.

Lieutenant Colonel D. S. Perry, relieved detail in I. G. D., assignment at Hq., IX Army Corps, Fort Lewis, April 30; assigned to 6th Cav., Fort Oglethorpe.

Major Vernon Peterson, from Moffett Field, Calif., May 30, to A. C. Basic Flying School, Taft, Calif.

Colonel E. P. Pierson, relieved recruiting duty, New York City, April 21; assigned recruiting duty, Hq., 5th C. A., Fort Hayes.

Lieutenant Edward P. Ramsey, relieved Seeley, Calif.; assigned P. I. Dept.

Major T. J. Randolph, detailed as member of G. S. C.; assigned G. S. with troops, and Hq., 2d Army, Memphis, Tenn.; relieved present duty at that headquarters.

Lieutenant Colonel Eugene A. Regnier, from Washington, D. C., March 25, 1941, to 1st Cav. Div., Fort Bliss, Tex.

Captain J. V. Richardson, relieved C. Z.; assigned 3d Armored Div., Camp Polk, La.

Colonel H. R. Richmond, will retire May 31, statutory age limit.

Captain Russell V. Ritchey, from Selfridge Field, Mich., to Philippine Dept. Sail San Francisco, June 5.

Lieutenant R. M. Rogers, relieved Fort Bliss; assigned 3d Armored Div., Camp Polk, La.

Captain Jean T. Ross, Fort Custer, Mich., to G. S. C. 5th Div., that state.

Second Lieutenant Frank A. Rudin, from Fort Bliss, Tex., May 8, to 1st Armored Div., Fort Knox, Ky.

Major C. L. Ruffner, relieved Ft. Bliss, Tex.; assigned O. C. of S., Washington, D. C.

Major R. M. Shaw, relieved U. S. M. A.; assigned 3d Cav. Brig., Ft. Riley, Kans.

Lieutenant Colonel James E. Slack, from Ft. Moultrie, S. C., to recruiting, Overseas Discharge and Repl. Depot, Charleston, S. C.

Lieutenant Colonel A. C. Smith, detailed as member of G. S. C.; assigned G. S. with troops, and Hq., 4th Armored Div., Pine Camp, N. Y., effective between March 15 and April 15; relieved Fort Knox.

Major Vernon Snively, relieved 9th C. A. Service Command, Presidio of Monterey; assigned Armored Force, Fort Knox, sailing from San Francisco for New York, April 12.

Major Elmer V. Stansbury, from Ft. Oglethorpe, Ga., April 10, to 104th Cav., Indiantown Gap, Pa.

Captain Lewis R. Stretch, from Ft. Bragg, N. C., March 22, 1941, to office A. G., Washington, D. C.

Lieutenant Colonel J. B. Taylor, relieved O. R., 8th C. A., San Antonio, August 1; assigned 3d Armored Div., Camp Polk, La.

First Lieutenant James C. Taylor, from Ft. Bliss, Tex., to Cav. School, Fort Riley, Kans.

2nd Lieutenant Robert B. Thieme, from Stockton, Calif., May 30, to A. C. Advanced Flying School, Phoenix, Ariz.

First Lieutenant Roy B. Thompson, Jr., from Fort Knox, Ky., May 21, to 2d Cav. Div., Ft. Riley, Kans.

Major J. R. Thornton, relieved O. R., 4th C. A., Atlanta, April 23; assigned 7th C. A. Service Command, Fort Leavenworth.

First Lieutenant John C. F. Tillson, 3rd, from Moffett Field, Calif., to 1st Cav. Div., Fort Bliss, Tex.

Major F. T. Turner, relieved Fort Meade, S. Dak.; to proceed home and await retirement.

Captain D. O. Vars, relieved Fort Myer; assigned 104th Obsn. Sq., Frederick, Md.; to report as student, aircraft observing, A. C. A. F. School, Brooks Field, May 3.

Lieutenant Colonel B. B. Vail, relieved Sidney Lanier High School, Montgomery, Ala.; assigned 7th C. A. Service Command, Fort Meade, S. Dak.

Lieutenant Wm. H. Ward, relieved Fort Riley, Kans.; assigned to P. I. Dept.

Captain J. K. Waters, relieved U. S. M. A., June 12; assigned 2d Armored Div., Fort Benning.

Major John P. Willey, prior orders amended; from Fort Riley, Kans., April 8, to 4th Armored Div., Pine Camp, N. Y.

Lieutenant Colonel Melvin S. Williamson, prior orders amended; relieved April 10, 1941 from Boys' High School, Decatur, Ga.

Lieutenant Colonel R. E. Willoughby's orders amended to sail from New York for C. Z., June 5.

Second Lieutenant Donald H. Wills, from Ft. Riley, Kans., to Philippine Dept. Sail San Francisco, June 12.

Lieutenant Colonel Vennard Wilson, relieved staff, Cav. School, Fort Riley, May 1; assigned office, C. of Cav., Washington, D. C.

Major W. G. Wyman, detailed as member of G. S. C.; assigned G. S. with troops, and G. S. C., IX Army Corps.

Lieutenant Theodore Wysock, relieved, Ft. Meade, S. Dak.; assigned P. I. Dept.

★ ★ ★

CAVALRY OFFICERS (RETIRED)

On Active Duty

Captain George W. Bailey, Ashland High School, Ky.

Major Raymond C. Blatt, Columbus, Ga.

Major Charles W. Burkett, Louisville High School, Ky.

Lieutenant Colonel Robert E. Carmody, Hq., 4th C. A., Atlanta, Ga.

Lieutenant Colonel Jay K. Colwell, CCC, 8th C. A., Fort Sam Houston, Texas.

Lieutenant Colonel Emile Engel, New Hanover High School, Wilmington, N. C.

Major E. L. Grisell, CCC, 8th C. A., Fort Sam Houston, Texas.

Major George F. Patten, Recruiting, Los Angeles, Calif.

Major Lawrence Patterson, Glendale High School, Calif.

Lieutenant Colonel John E. Selby, Johnson City High School, Tenn.

Major James C. Ward, CCC, 9th C. A., San Francisco, Calif.

NOTE—*This list is in addition to those published in our January-February and March-April, 1941 issues. It is requested that any retired cavalryman who is now on active duty and whose name does not appear on these lists, please notify* THE CAVALRY JOURNAL *or the Office, Chief of Cavalry.*

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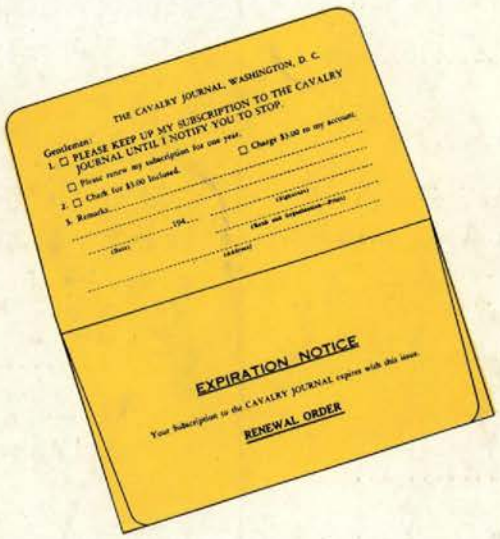

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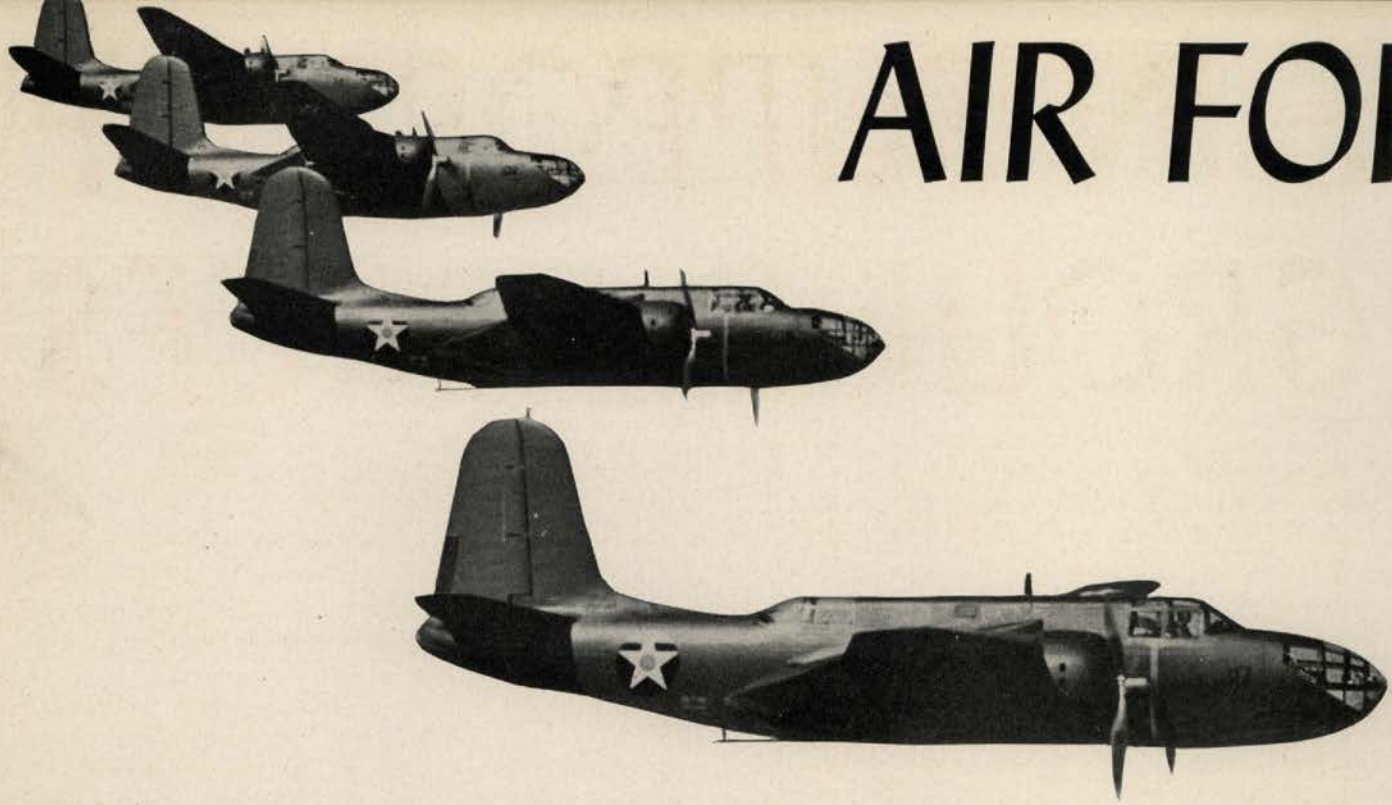


By Major General Lewis H. Brereton, U.S.A.*

WHILE the following discussion is applicable to the air support component of any task force, it is particularly applicable to air force support of armored forces and motorized forces.

Air advantage is essential to a successful offensive on the ground. The creation and maintenance of an air situation favorable to the ground force is the primary mission of the higher air command. Until this is achieved all available air forces must be concentrated against the hostile air forces. Such action is imperative not because the destruction of the enemy air force is an end in itself. The destruction of the enemy air force is a direct furtherance of the army mission in that it increases the security of the ground forces, and facilitates offensive ground action. More specifically, it allows adequate air forces to be allotted to the support of ground forces, and deprives the enemy of similar support.

The methods of support which air forces contribute to the ground forces are, for the sake of this discussion, classed as: *Direct Support* and *Close Support*.

By *Direct Support* is meant air action to isolate the battlefield. This is distinct from the indirect support afforded by GHQ Air Forces in its long range strategic and tactical bombing operations and action to maintain air advantage. Its purpose is to create and maintain the most favorable situation possible to the ground force commander throughout the period of the operation. Among the missions assigned will be the attack of hostile reinforcements moving toward the zone of action; disruption of communications, defense installations, and supply systems. While the air forces employed thus may be given a general mission, they must be under the control of the ground force commander, and operating in direct furtherance of the army mission.

Close Support refers to the intervention of air forces on the battlefield. In the rapidly changing situations and greatly accelerated time and space factors of modern battle, prompt and efficient air support demands the elimination of all possible intermediate links in the chain of command. Support from aircraft outranges any available artillery fire. Therefore, air support should be reserved for use against targets inaccessible to artillery. For this reason, close bomber support will be most effective in support of armored and motorized troops, and during highly mobile operations. Success is dependent upon timely and accurate information and positive communications and control.

Targets chosen must be within the capability of the air force available. High losses are to be expected, therefore, air force should not incur losses against targets from which compensating effects cannot be achieved.

The identification of targets is exceedingly difficult for bombers. It depends on many factors, such as, disposition of the target, enemy opposition, ceiling, and visibility, and the degree of training. It is essential that targets be designated within the capabilities of the pilot to locate and recognize them. This can be understood when it is realized that the A-20A light bomber, for example, will execute attacks at horizontal speeds in excess of 300 miles an hour. This means that one mile of ground is traversed in less than twelve seconds.

*Commanding Third Air Force, Tampa, Florida.

CE IN SUPPORT OF GROUND FORCES

Unlike artillery, in estimating the total power of the effort available from supporting bombardment, the commander can count on the power of the first attack only. The number and power of subsequent missions from the same unit is an unknown factor due to the probable losses of the time and space factors involved in return to bases, rearming, and preparing for subsequent action.

The question of how and to whom support is given involves a consideration of the means of requesting support; the time and space factors involved; the suitability of the target and its priority.

With the communications available in quick moving situations and the type of resistance which may delay the advance of smaller units, there is a limit to the size of ground unit which may expect support. For example, a forward echelon of an armored division may be held up by hostile action, the exact nature and extent of which cannot be determined immediately. The factors effecting the possibility of effective support include the following:

1. Can the supporting air force deliver an attack within the time limits necessary?
2. Can the target be identified by the bomber force, and is it of a type and so disposed that the bomber force available can deliver an effective attack?
3. Will action against the objective delay or prevent bomber support against objectives more vital to the Task Force Commander?

Obviously the commander of the advance element cannot determine any of these factors, except perhaps that under Question 2 alone. More often than not this question must be determined from air observation, as adequate ground observation will be lacking. If the air observation cannot determine the target, it will be impossible, in most cases, for an effective attack to be delivered.

The answer to Questions 1 and 3 must be decided by the air force commander, who should be on the staff of the Task Force Commander and who should exercise bomber control in accordance with the decisions of the Task Force Commander.

For example, consider Questions 1 and 3. Our armored division in this situation had a mission for which one squadron of bombers was attached, based on an airdrome 100 miles in the rear. The advance unit commander, at 8:00 AM has asked air support, indicating direction and type of hostile resistance. The enemy disposition is such that the air force commander decides fragmentation bomb loading to be most effective. If the squadron is on alert, loaded with fragmentation bombs, the attack can be delivered in approximately fifty minutes, or at 8:50 AM. This includes the time for the order to be formulated by the air force control officer after the decision of the Task Force Commander; transmission of order to squadron by radio and telephone or teletype; the issue of orders to pilots and orientation on the map; the manning of aircraft which are in dispersed antiaircraft defense positions around the airdrome; take off, and attack of target 100 miles away.

Suppose the squadron had been ordered on a mission at 7:00 AM. It would be back on its airdrome, less casualties, at 8:40 AM, and requires 30 minutes to fuel and arm. It could deliver the attack requested at 9:50 AM, one hour later than in the first instance, or approximately two (2) hours after receipt of the call for support. What is the disposition and location of the forward unit at this time? Has the situation changed? The answer depends on the reports from air observa-

tion, or ground to ground communications from the forward echelons, which is difficult and often impossible from a unit in action.

If the mission is dispatched, it will be noon before another attack can be delivered, and again the casualties incurred will affect the power available for further missions. The Task Force Commander must consider for each mission the subseqeunt requirements which may arise, and the force which will be available.

In view of the high rate of casualties to be expected against a trained and disciplined enemy, economy of force is essential. This does not mean economy in the application of mass to the objective, but economy of force by application to the vital target. The following principles of employment are apparent:

The force must be sufficient to neutralize the target, therefore, undue detachment must be avoided. Flexibility of employment, which is essential in fast moving situations, requires centralized control.

Differing from artillery, in which volume of fire can be obtained largely by ammunition expenditure, the power of air attack depends upon the number of aircraft engaged. Its volume of fire is developed instantaneously and sustained fire must be accomplished by successive attacks. Centralized control is therefore essential in order to develop adequate weight of attack against the objective. Thus the whole bomber effort may be concentrated at short notice on a particular portion of the front.

From the viewpoint of ease of control, the direct allotment of specific squadrons to support forward echelons seems to offer advantages. Calls for support would pass directly from the echelon concerned to the support squadron. This method is at variance, however, with the principles set forth above. In fast moving situations involving large time and space factors, the situation may not indicate initially where the maximum air effort will be required. In this type of action advantage must be taken of flexibility of control to concentrate the power of bomber support. It is a quick moving reserve; committed to action at a vital point, immediately reorganized and reassembled under the control of the Task Force Commander, available for further operations.

As soon as a group of two or more bomber squadrons is involved, some form of centralized air control is necessary. This control allots missions to the squadrons; assigns missions so that the load is distributed evenly among the squadrons, and provides a reserve for the Task Force Commander. Control is exercised by the air force commander. His duties include the allocation of targets to squadrons; he keeps the Task Force Commander informed as to the support available, and advises as to the suitability of missions requested.

It is questionable as to whether headquarters in rear of regiments, or even battalions of the armored forces, will be able to designate actual targets for *Close* support at short notice. Plans for employment should therefore be prepared to deal with this most difficult phase of support as a first priority. This is the most essential element of coöperation, inasmuch as it offers the only means of giving additional fire power when the action is beyond the range or capabilities of supporting ground forces. The less immediate *Direct* support requirements will usually come from the higher command.

With the limited air support available, the Task Force Commander can rarely plan more definitely, initially, than to decide the area where the mass of bomber support will be required. Within this decision the available support may be allotted to subordinate units for initial missions. As the number of second missions of adequate power is unknown, the initial allotment can cover only the total first missions available. A reserve should be available in vague situations where a probability exists of unfavorable developments beyond the control of supporting ground units. The reserve would be available to furnish continuity of attack where the strength of hostile resistance necessitates. In an action against powerful resistance, successive attacks at short intervals are most effective in building up morale as well as material effect. This should be considered in the allocation of first missions.

The time between support being requested and given must be reduced to the minimum. This requires highly efficient radio communications between ground and air units. It requires that all possible intermediate links in the chain of command be eliminated. When adequate air support is available, or when a ground unit has a mission requiring operations under circumstances where air support under centralized control results in undue delay, direct communication with the supporting air unit must be established.

Again it must be emphasized, however, that after the first mission, the air support available may be insufficient, and additional support from other sources may be required. It is the duty of the air unit attached in support of a separate ground force to inform the commander as to the status of the supporting unit at all times. An initial reserve held out under the Task Force Commander may be essential when requirements cannot be foreseen to meet emergencies. The Task Force Commander must decide as to the priority of subsequent missions.

The fundamental principle to be emphasized is that air forces in support must be considered and employed as part of the combat team, and not used as an adjunct to further the mission after other means have been considered or exhausted. To accomplish this successfully, a positive system of command, intelligence, and communications must be established and employed until procedure is firmly established and familiar to all concerned.

Efficient command functions demand that ground commanders are thoroughly familiar with the capabilities and limitations of their supporting air force. This includes knowledge of operating procedure, tactics,

and technique. Commanders must know: That the target selected is one which has a definite effect on the situation; that the target can be recognized by pilots under conditions imposed by weather, ceiling, visibility, terrain, disposition of the target, and enemy action; that the air force available is effective against the target selected.

Air commanders must likewise be familiar with the principles of employment of the ground forces, and the capabilities and limitations of the ground arms.

Two way liaison must be employed to the greatest possible extent by the detail of liaison officers. Every ground unit authorized to call for air support should have an air liaison officer on the commander's staff, and the air unit in support should have a liaison officer attached from the supported unit.

There must be provided channels of intelligence communications from the command post to the air forces, other than the tactical channel, which should be reserved exclusively for command purposes. The air force commander must have immediate information of the results of operations and combat status of the air units, as well as all other combat intelligence, and must be kept informed as to probable future requirements.

It is evident that the missions of the air force will include *Direct* support as well as *Close* support. The information upon which to base such action must, in most situations, come from air reconnaissance. Inasmuch as timely action is essential, command procedure and communications must be reduced to the minimum. In many situations the air force commander will be given a general support mission or directive in a manner similar to orders given to covering forces. Air reconnaissance must be available directly under air force control. If air force reconnaissance units are not available, such reconnaissance must be effected by organic ground force observation units. Efficient results require intensive combined training, especially in the identification and location of targets; air to air and air to ground communication, and radio procedure.

Radio procedure must be simplified and messages condensed to the utmost. Radio silence and the strictest of discipline is essential. Brevity, simplicity, and positive communication must be insured by the use of single code words and groups, especially selected for ease of voice reception under adverse conditions. Crystal tuned sets are essential to successful results. Too much emphasis cannot be placed on the necessity for constant combined training in communications. It is the weakest link and the most important factor in cooperation between ground and air forces.

In maneuvers the losses imposed on supporting air forces should be as realistic as possible from the point of view of effectiveness of air attack and losses suffered by air forces. This is essential in order to impress on commanders both the effectiveness of air attack and the necessity of conserving the air strength for employment against the vital targets.

Illustrative Problem

The following combat exercise actually carried out by the 2d Armored Division and the 17th Bombardment Wing illustrates a method of combined action. The forces involved are comparatively small in the light of present day operations, but the principles of employment will be the same for larger units. The two main elements of the task force in question are an armored division and a light bombardment wing.

The bombardment wing is composed of two groups. Each group in turn is composed of three tactical squadrons. In this problem a wing less two squadrons was employed. These units are organized, trained, and equipped to operate in direct support of ground forces. A total of 88 light bombardment planes are available in the wing, although only 54 (9 per squadron) of this number could normally be operated during a given period. These airplanes are the standard twin-engine, light bombardment type now in the Air Force, the Douglas A-20A. They adequately fulfill the requirements demanded for light bombardment employment, i.e., high speed (over 300 mph.), moderate size (19,000 pounds), maneuverability, wide variety of bomb load (30 pound to 1,100 pound bombs, all types) and defensive fire forward to cover low altitude approaches.

Air superiority, for the sake of the problem, has been won and is being maintained by GHQ Air Force pursuit units operating under higher command. Air observation is supplied by organic observation squadrons. Air force reconnaissance units also are capable of performing this function, but are not present in this problem.

The situation is as follows: An encircling force, consisting of an armored division with air force in support, in a pursuit operation beyond support distance of friendly ground troops, becomes seriously threatened on its flank by a highly mobile hostile force. The threat is of such strength that immediate and additional power is required, pending the arrival of ground reinforcements.

A discussion of the communications and control set-up and location of air units is necessary before going further into the action of the problem and into the technique of the air force solution. The Task Force and Wing command posts are combined. The respective commanders and necessary staff are present at the command post, all of which is a mobile set-up. Radio contact has been established with lower units, both ground and air. Telephone lines connect the command post with all air units. Radio messages are for the most part sent in the clear, since time is of primary importance. Squadrons of the light bombardment wing, located at three (3) different advanced airdromes (Birmingham, Atlanta and Columbus) have been given bomb and ammunition loading instructions and are on the alert, i.e., will be ready to take-off 15 minutes after ordered. Loadings have been designated as 100 pound demolition bombs with instantaneous fuze for two (2)

squadrons, and 30 pound fragmentation bombs for two (2) squadrons. This was ordered as prior intelligence indicated that the enemy force would probably contain light and medium tanks and unarmored vehicles. The 30 pound fragmentation bombs were to be used for widespread coverage of personnel and lightly armored vehicles.

The airdromes are advanced bases and vary from 80 miles to 140 miles from the combat area. These distances are not significant since air support can be furnished anywhere within the operating radius of the type of airplane employed. For the A-20 this is approximately 250 miles. Given freedom from attack by hostile air units, close proximity to probable scene of action is desired in airdrome locations. The reason for this is, of course, the ability to make frequent and repeated attacks and to furnish quick support when needed.

All intelligence available has been forwarded through each group to their squadrons, and they are all well posted on the situation. Observation and advance ground units in contact with the enemy have been the sources of this information. Telephone communication is being used for dissemination of intelligence in most instances.

Play of the Problem

The armored division has launched its pursuit operation after a breakthrough of the hostile main line of resistance by the 4th Division (Motorized). The bombardment wing has been on the alert since the armored division lost contact with friendly ground forces. The armored force is now 50 miles to the rear and on the flank of the enemy's main routes of supply and withdrawal.

Any information of obstacles or a counteroffensive must come from observation aviation. This report probably will not give more than one hour's warning, hence, timing of the action is of prime importance.

Air observation reports an enemy force of two columns composed of tanks and lighter vehicles, moving at 30 mph in a direction intercepting the armored division within two hours contact. The columns are on main roads, making a good target for air attack.

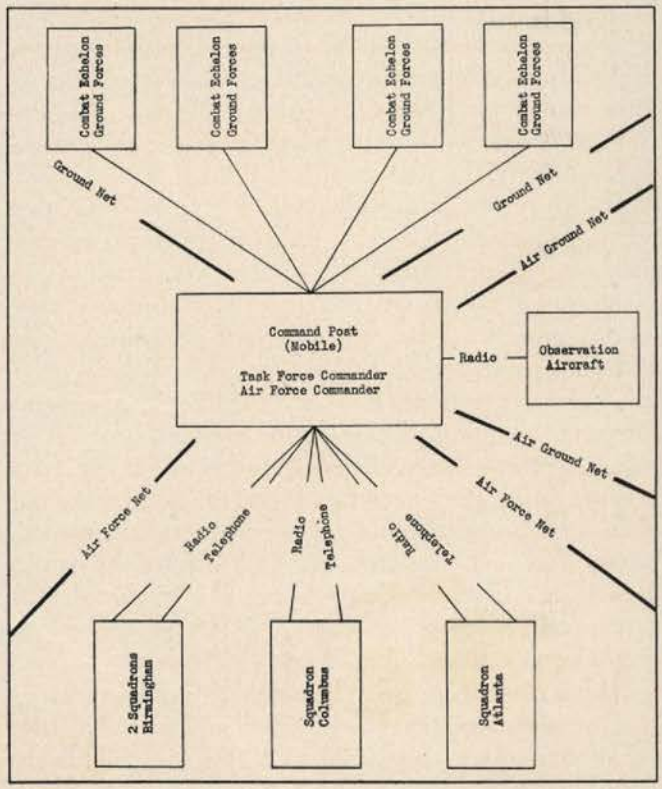
Approximately one hour will be required to launch an air attack from the most distant airdromes under task force control. All squadrons are ordered to attack immediately; those loaded with 100 pound demolition bombs to attack tank elements, and the remainder to attack the lighter vehicles.

Specific location of the column cannot be given to attacking squadrons because of the high speed and the network of roads possible for deployment or change of direction. Only the general area, direction of advance, and estimated speed can be given. For further instructions in location of target, the attacking unit must keep radio contact with the Wing Command Post or observation airplanes. In this way, the attacking formations are given target information (dependent upon successful radio communication) almost up to the time they sight the objective.

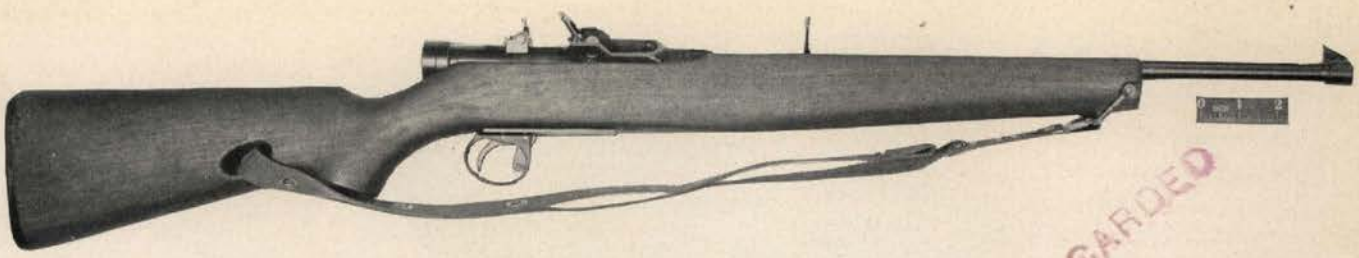
Coördinated timing of the air attack in this situation is immaterial. Since airdromes are at varying distances from the objective, units will attack at slightly staggered times. The time required to obtain air support from the two bomber squadrons located 140 miles from the target (using A-20 airplanes) follows:

Attack order issued from Task Force Headquarters	0-Hrs.
Message transmitted to two squadrons by radio	0-Hrs. + 8 Mins.
Take-off	0-Hrs. + 23 Mins.
Attack	0-Hrs. + 59 Mins.
Land	1-Hr. + 40 Mins.
On alert for next mission	2-Hrs. + 40 Mins.

The above times were reduced by approximately 15 minutes for the airdrome 80 miles from the target.



Once the squadrons are in the air, no attempt is made at close control over the technique of the attacks. In an operation of this nature the Flight Commander may not know exactly what disposition the enemy force will have when he is in a position to attack, since he cannot always depend on being guided into the target by radio communication from the ground or from air observation in the vicinity of the objective. The delivery of the actual assault in a mission of this nature is a matter of training and indoctrination of the units concerned. In the event interception of the hostile force was not made as intended, routes for search and attack missions were assigned squadrons, all of which were in radio intercommunication.



New Garand .30 Caliber Light Rifle

THE War Department is making an effort to secure a satisfactory light weight semi-automatic shoulder rifle, as a possible replacement for the .45 caliber pistol and submachine gun.

The general requirements for such a weapon are as follows:

a. Weight—not to exceed 5 pounds, including sling.
b. Range—effective up to 300 yards.
c. To be carried by a sling or some comparable carrying device.

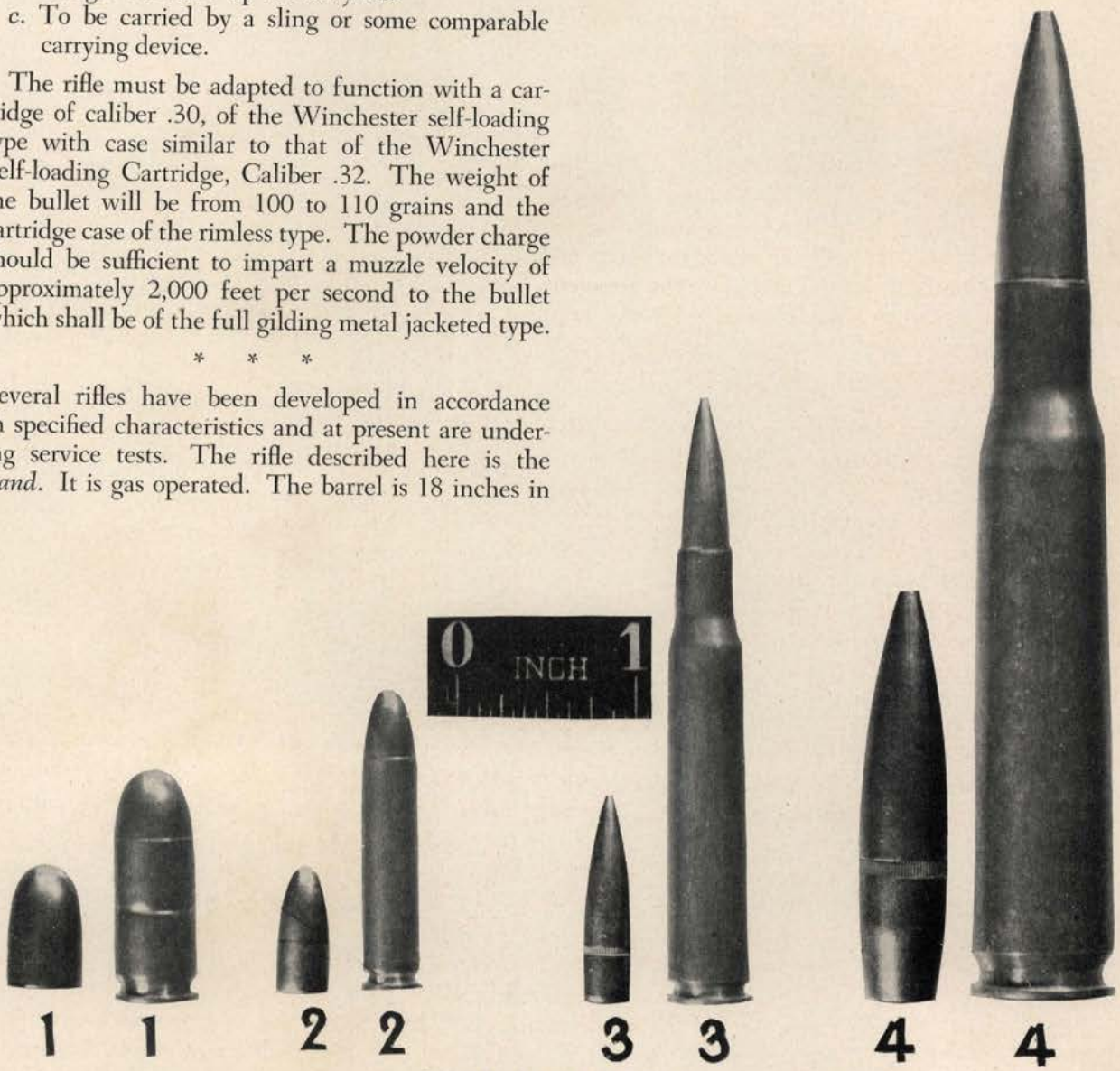
The rifle must be adapted to function with a cartridge of caliber .30, of the Winchester self-loading type with case similar to that of the Winchester Self-loading Cartridge, Caliber .32. The weight of the bullet will be from 100 to 110 grains and the cartridge case of the rimless type. The powder charge should be sufficient to impart a muzzle velocity of approximately 2,000 feet per second to the bullet which shall be of the full gilding metal jacketed type.

* * *

Several rifles have been developed in accordance with specified characteristics and at present are undergoing service tests. The rifle described here is the *Garand*. It is gas operated. The barrel is 18 inches in length and is tapped about 6 inches from the muzzle. Over-all length, 35 inches. Weight, 4.91 pounds.

The magazine is above and ejection is below. The reason for this is to use the 50-round magazine. The magazine is canted 30° to the right. The sights are offset to the left. The sight radius is 21 inches.

As the result of the various required tests, several minor modifications are now being made.



SMALL ARMS BULLETS

(1) Caliber .45 ball. (2) Caliber .30 SR, M1. (3) Caliber .30 M2. (4) Caliber .50 M2.

MAJOR GENERAL JOHN MILLIKIN

The new commander of the 2d Cavalry Division was born at Danville, Indiana, and was graduated from the United States Military Academy in the class of 1910. Prior to the World War he served with various Cavalry units in the United States and Hawaii. He joined the American Expeditionary Force in France in February, 1918, serving as Executive Officer of the Army General Staff College at Langres, France. For this service he was awarded the Distinguished Service Medal. On his return to the United States in June, 1919, General Millikin served as a member of the War Department General Staff and also as aide to the Secretary of War and to the Chief of Staff. Subsequently, he was on duty as Assistant Chief of Staff of the Hawaiian Division, as a member of the faculty of the Cavalry School, and as Commanding Officer of the 3d Cavalry at Fort Myer, Virginia, and of the 6th Cavalry at Fort Oglethorpe, Georgia. Just previous to assuming command of the 2d Cavalry Division, he had been on duty with the 1st Cavalry Division since last October. General Millikin is a graduate of the Cavalry School, a distinguished graduate of the Command and General Staff School, and a graduate of the Army War College.

Second Cavalry Division Comes to Life

*By Lieutenant Colonel W. N. Todd, Jr., Cavalry**

ON November 11, 1918, the great Camp Funston, Kansas, named in honor of General Frederick Funston of Spanish-American War fame, began its twenty year decline into Ogden Flats from which it had sprung. The cantonment then had been a focal point for the old 89th Division commanded by Major General Leonard Wood. The division was composed chiefly of draftees from Kansas, South Dakota, Colorado, New Mexico and Arizona.

During the twenty years of inactivity that followed the World War, the buildings were sold and torn down, one by one. The home of General Leonard Wood, which overlooked the giant camp, had burned to the ground. The chimney alone remained as a mute reminder of this once great Army city. General Wood's home stood on a hill just north of the great "mushroomed" camp on the flats of the Kansas River. A peak of 41,000 troops had been housed and trained in Camp Funston when the camp was one of the nation's sixteen divisional cantonments.

Prairie grass again grew where thousands of men had once drilled and worked out combat problems. The once heavily populated portion of ground again was known as Funston pasture to every student of the Cavalry School and to the inhabitants of Junction City and Manhattan. Twenty years had transposed the World War training ground scene into oblivion.

But with the passage of the Selective Service Act and the Emergency Defense Bill, a new camp emerged from Ogden Flats. Camp Funston came to life again—this time to be the home of the newly formed 2d Cavalry Division. The Long-Manhattan-Watson construction company received the contract to erect scores of frame buildings. Barracks, mess halls, stables, administration buildings and hay barns sprung up almost overnight. Nearly 500 buildings shot up into the sky as the general contractors worked with the Widmer Engineering Company and the Construction Quartermaster to make new records in rapid construction work on the cantonment. So hurriedly did the contractors erect new buildings that the average time of starting a structure was forty-five minutes. Every thirty-nine minutes a building was completed. All troop schedules, established by the Office of the Quartermaster General were met—most of them ahead of time.

*Assistant Chief of Staff, G-2, 2d Cavalry Division, Fort Riley, Kansas.

The warehouse area and the Station Hospital for the 2d Cavalry Division were built separate of other cantonments on the site of old Camp Whitside. They too, were constructed in record time in spite of the wettest winter Kansas has experienced this century.

With part of the housing facilities complete, the 2d, the 14th and the 9th Cavalry Regiments, permanently stationed at Fort Riley, were the first troops to move into the rebuilt Camp Funston. They were joined later by the 10th Cavalry which came from Fort Leavenworth. The 3rd Field Artillery already was at Riley, and the 16th Field Artillery arrived early this spring from Fort Myer, Virginia. Thus, the forming of the division brought together some of the most outstanding regiments of the United States Cavalry.

Regiments with Distinguished Service

The 2d Cavalry is the oldest horse regiment in the service. It was activated back in 1836 to fight the Seminole Indians in Florida. Known as the "Second Dragoons," the regiment saw action in the Civil War after having been called east from Fort Riley to fight from Bull Run to Cedar Creek. Then came service in the Spanish-American War and in the World War. The 2d Cavalry was the only mounted regiment ever to reach the front in the war with Germany. After returning to the United States the regiment returned to its old home—Fort Riley.

The 14th Cavalry had its most colorful history in the Philippines where it served from 1903 to 1905. The service record includes action in twenty-two major engagements there. Then during the World War, the 14th distinguished itself with eight years of service on the Mexican border and only the Armistice prevented the regiment from completing its plans for overseas service.

Organized at New Orleans in July, 1866, the 9th Cavalry was the first colored cavalry regiment and is one of the oldest colored regiments of all arms and services. Active in the Spanish-American war, the 9th again achieved fame on the Mexican border in 1915. The regiment saw service in the Philippines during the World War.

The 10th Cavalry came into being in the same year as did the 9th, but at Fort Leavenworth. Indian warfare in the Middle West occupied the regiment for some time. Then came the Spanish-American War when the

organization fought more Indians before taking part in the Punitive Expedition into Mexico. Border duty occupied the regiment during the World War. After being split up, the 10th again was brought together at Fort Leavenworth before coming to its new home at Camp Funston.

Division Organization

The 2d and 14th Cavalry regiments were combined to make up the 3rd Brigade and the 9th and 10th to comprise the 4th Brigade. In succession the 3rd and 16th Field Artillery battalions were added to the division. Then came Troop A, 9th Engineers Squadron; Provisional 2d Medical Squadron; Troops A and C, 17th Quartermaster Squadron; and the 24th Ordnance Company.

For training purposes, in order to enable the division to function as a self-sustaining unit in the forthcoming maneuvers, the improvisation of the following provisional divisional units has been made: an Engineer Squadron Headquarters and Headquarters Detachment, to be designated as Provisional Headquarters and Headquarters Detachment, 9th Engineer Squadron; a Reconnaissance Troop, to be designated as Provisional Reconnaissance Troop, 2d Cavalry Division; a Signal Detachment, to be designated as Provisional Signal Detachment, 2d Cavalry Division; a Field Artillery Headquarters and Headquarters Battery, to be designated as Provisional Field Artillery Headquarters and Headquarters Battery, 2d Cavalry Division; a Quartermaster Headquarters Troop, to be designated as Provisional Headquarters Troop, 17th Quartermaster Squadron; a Quartermaster Troop, to be designated as Provisional Troop B, 17th Quartermaster Squadron; a Medical Squadron Headquarters and Headquarters Detachment, to be designated as Provisional Headquarters and Headquarters Detachment, Medical Squadron, 2d Cavalry Division; a collecting Troop, to be designated as Provisional Troop A, Medical Squadron, 2d Cavalry Division; a clearing Troop, to be designated as Provisional Troop B, Medical Squadron, 2d Cavalry Division; and a Veterinary Troop, to be designated as Provisional Veterinary Troop, Medical Squadron, 2d Cavalry Division.

The division was formally organized on April 1, 1941, and by April 15, the Special Weapons Troop and Headquarters Troops, of both Brigades and Division were formed, and the organization of the nation's Second Division of Cavalry was well under way.

Brigadier General Terry de la M. Allen, commanding officer of the 3rd Cavalry Brigade, being the Senior Brigadier, was temporarily in command of the division, awaiting the arrival of Major General John Millikin. General Allen assured both officers and men that the outlook of the division was bright and that the history and tradition behind each regiment would assure the combined success of the division.

Each troop of every regiment "rolled up its sleeves" and went to work. Housekeeping was laid aside and nothing could deter the men from following their training schedule efficiently and diligently. "Dust and heat, rain and mud, have all failed to slow up our progress or hinder in any way our program," remarked General Allen.

Thus, when General Millikin arrived on June 12 to take over command of the division, much progress had been made in the training of the new men and mounts. A few days after General Millikin arrived, the 2d Cavalry Division received its final quota of replacements and two weeks later made its bow to the public as a full fledged Division, in its initial formal review. The personnel of the division, consisting of more than seventy-five per cent Selectees, rode past their new commander like seasoned veterans.

The rapid progress made by the division since the induction of the Selectees, was accomplished only as a result of a well-laid plan of training.

Personnel

Officers for the division came from every part of the country, both as reserve and from the National Guard. Almost every Reserve Officers Training Corps, offering training in cavalry, is represented in the division. The largest group of officers came from the 107th Cavalry (horse-mechanized) now stationed at Camp Forrest, Tennessee.

Cadres were formed from three year enlisted men within the regiments before the Selectees arrived. The new troops that were organized within the regiments, as in Brigades and Divisional units, also received men for their cadres from the regiments.

The Selective Service Trainees began arriving soon after the first of the year. They were received directly from induction center with varying amounts of equipment and clothing. Most of the Selectees came to Funston from Fort Leavenworth. Homes of a majority are in Kansas, Iowa, Missouri and Arkansas with a few coming from greater distances. A great many are farm boys who were extremely pleased with the idea of being in the horse cavalry. The Selectees, who expected to meet the hard-boiled Army men of the movies, were pleased to be greeted by a warm meal and a heartening welcome of cheerfulness.

The newly inducted citizen-soldiers poured into Camp Funston by special train for some time. They were then issued cavalry equipment and basic training was begun. Many of the Trainees had never fired a weapon and the Army was the thing they knew least about.

But the intensive thirteen-weeks training program, which these men were immediately started upon, did not seem to daunt their high spirits in the least. From

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(1) and (2). Second Cavalry Division Review. (3). Camp Funston, Fort Riley, Kansas.

week to week, their personal appearance as a soldier and their outlook on their year's "hitch" in the cavalry improved immensely.

Training

The purpose of the training period was to make each man a competent horseman and skilful in the use of his weapons. The schedule during the first few weeks emphasized equitation, physical exercises and dismounted drill. As the training program advanced, the Selectees received instructions in map reading and dismounted combat tactics and mounted drill occupied more of the training periods. A great deal of time also was devoted to "dry" shooting and the nomenclature of the rifle, pistol and machine guns. Extra weeks of training were given to the subjects which the troops didn't master.

Regimental exercises had been frequent and each regimental commander saw to it that no subject was slighted. When the troops were scored on the range, their intensive effort was well evident with the result that a great many troops qualified 90 per cent or more of their men as marksmen or better.

The Selectees had not completed seven weeks of training, when the remounts began arriving. The first group consisted of 500 from the remount depots at Fort Robinson and Fort Reno. By April 15, the total number of remounts received reached almost 1,200 for each regiment. The total for the division approximated 6,000 horses. The old and tried method of training by experienced riders and the Selectees receiving their training on experienced horses was out of the question. So Selectee John Doe was introduced rather informally to Remount from Reno. Much to the agreeable surprise of all concerned, the mixture, while resulting in minor explosives, behaved surprisingly well. In fact, during the tenth week of training, all Selectees were riding their regularly assigned mounts with very few exceptions, and even fired a modified mounted pistol course.

In the horsemanship department, an effort was made to build up a vocabulary of expressions from the everyday vernacular of the cadre instructors. It has been found that these expressions frequently work well where long-winded explanations are lost effort. Such expressions as these were found to be very useful: "Steer a horse as you would a bicycle; to trot, you bounce once, while the horse bounces twice; to step on the gas, squeeze with your legs; no hump backs; finger your reins."

Instruction was given by a sergeant and corporal instructors under the supervision of Department Officers. Each N.C.O. instructed a group of approximately twenty-five Selectees. Classes were conducted twice weekly for all troop officers and N.C.O's in order to orient them and better qualify them to assist in horsemanship instruction.

Equipment

Many essential supplies were rather slow in arriving as is the experience of all new organizations. For some time, a shortage in Post supplies did not allow the issue of boots and breeches. This resulted in sore legs for the new cavalrymen and necessitated a reduction in training of all gaits to a walk during the latter part of the second week's training. This general reduction of gaits and accompanied mass trotting and galloping in equitation rings, seemed generally to restore the confidence of many of the timid riders. Now that boots and breeches are standard equipment, faster gaits have been resumed and instruction goes more smoothly.

At first the Motors Department was seriously handicapped by a shortage of vehicles. When training started, there was only fifty per cent of authorized truck transportation available, and no motorcycles were on hand. By the fifth week, additional trucks had been received. Because of this shortage of vehicles, it was necessary to divide the trainees into two groups, one for the trucks and one for the Scout cars. This was done in lieu of the three groups originally prescribed which would have included one group for motorcycle instruction. This resulted in a larger number of Trainees for each vehicle than was originally intended in the Scout car and truck sections.

Trainees picked up the manipulation and nomenclature of the various weapons with surprising rapidity. Of course, not too much emphasis was placed on technical nomenclature, but the Selectees were taught to strip pieces and roughly understand the functioning of the various parts.

The large number of ranges used by various elements of the 2d Cavalry Division are very suitable and within walking distance of the troops. However, the large number of ranges required by the division, the Cavalry School and the Cavalry Replacement Training Center, makes the division training area exceedingly small. The problem will soon be solved, however, when the government purchases an additional 32,370 acres of land for the reservation. This purchase, expected to be completed this summer, will bring the total acreage of the Fort Riley reservation to more than 55,000 acres. The War Department recommended the site as an extension of the reservation several years ago. Twice in the last five years, the entire area north of the present reservation has been leased from seventy-five landowners for summer maneuvers.

The intensive training program which has been carried on in the division will be climaxed late this summer with maneuvers. When the division does head south for the maneuver area, it will be a real test. The division will be five months old September 1. But in these five months both new men and new horses have definitely proven that they are a part of the modern, hard-hitting, crack horse cavalry of today's United States Army.

Xenophon's Treatise on Cavalry

- - - Still Sound in Principle

THIS is the most ancient work we have which treats specially of the cavalry service, and is very interesting as an expression of the views of a skilled soldier who throughout all his writings seems to have shown not only a thorough knowledge of the cavalry service, but an appreciation of and fondness for it of a very marked character.

The treatise is addressed to some particular person, supposed to be his son Gryllus, who served in the Athenian cavalry, and it details fully all the duties of a commander of horse in the Athenian service, how the force may be maintained at the proper number, how to equip them properly, and how to exercise them in peace and in war.

The work shows that, in very many essential points, the Greeks of his age had attained a considerable skill in the management of their cavalry. The weapons and system of fighting, both among the infantry and horsemen of that time, were so different from the arms and system at present in use, that the mere details of drill are of but little interest to us now, but upon the general principles which govern the use and employment of cavalry Xenophon's views merit close attention.

In his first chapter he impresses upon the reader the absolute necessity of great care in the choice of horses for the cavalry service—kicking and unmanageable horses are to be avoided, and well-trained ones alone kept in the force. Attention is also to be paid to their feet, that they may be in a condition to be ridden on rough ground, and he advises having the horses stand upon smooth round stones while being groomed, so as to harden the hoof, the use of iron shoes being unknown in his day.

The next point he urges is to exercise the men thoroughly, so that they may be well able to vault on their horses readily, and to ride them easily upon all kinds of ground. As soon as the riding-school course was completed, and the recruit could sit firm, then he was to be taught and drilled as much as possible to throw the javelin on horseback. Having armed both men and horses with defensive armor, the next duty of the commander was to inculcate obedience, "for without obedience there will be no profit either in good horses or in firm-seated riders, or in fine arms."

Xenophon also advises the cavalry in drilling to ride out into the country, to leave the beaten road, to gallop their horses over ground of all sorts, and to have mock combats in such places. General Seidlitz, Frederick the Great's best cavalry general, used to exercise his regiment in this way over rough ground so violently that Frederick once found fault with him on account of the number of deaths caused by it. Seidlitz coolly answered, "If you make such a fuss about a few broken necks, your Majesty will never have the good horsemen you require for the field."

The phylarchs, or commanders of squadrons, are urged to attend to the details of equipping, and superintending the exercises of the contingents under their immediate orders, and are told to endeavor to excel all their men in horsemanship and all the other duties of a cavalry soldier, setting thereby a good example, and securing also more respect and a more ready obedience.

In marching on active service he suggests that in order to give rest to the backs of the horses, as well as to afford relief to the riders, the commander should move them at a moderate pace, and at times dismount the men and let the force march, leading their horses.

The method given for increasing or diminishing the front of the column is much the same as that in use in modern times. He says in marching through narrow passes you must lead your men in single file. In broad roads extend the front of each tribe, and in the open plain you must form all the tribes in a body.

He advises extraordinary scouts in advance of the ordinary ones in an enemy's country to give timely notice of the proximity of the foe. His idea is evidently that in addition to the usual advanced guard there should be small reconnoitering parties still farther in advance; a precaution of value in all ages.

He advises a commander of cavalry to acquire in time of peace an accurate knowledge of the enemy's country as well as his own, for he says truly that "a leader who knows the roads is a totally different person from one who is totally ignorant of them; and in forming plans against the enemy, he who has a knowledge of the country has a vast advantage over him who is a stranger to it." When General von Moltke, in the summer of 1868, travelled incognito over the eastern districts of France, in anticipation of the war which broke out two years later, he was following to the letter the advice given by Xenophon to his son over 2,200 years previously. The result proved that the advice had not lost its value by the lapse of so many centuries.

The instructions as to the posting of pickets and sentries are admirable. He advises secrecy, so that they may be a security to their friends and an ambush for the enemy. Outposts concealed are less liable to surprise, and more to be dreaded by the enemy, and an attacking force not knowing where to meet resistance, watches every spot with suspicion, and cannot move so freely or so rapidly.

The whole treatise shows a great experience in the cavalry service, a complete knowledge of the duties of a commander, and is marked throughout by a keen appreciation of human nature and of those moral influences which so much affect a body of soldiery.

THE ENGINEERS

First Cavalry Division

By Major David M. Dunne* and Captain Robert G. MacDonnell*

HEADQUARTERS FIRST CAVALRY DIVISION
OFFICE OF THE COMMANDING GENERAL
FORT BLISS, TEXAS /wlk

1 July, 1941.

To the Editor, The Cavalry Journal.

In approving this article I take pleasure in commending the 8th Engineer Squadron for their energy, resourcefulness and initiative. The word "cannot" is not in their vocabulary.

INNIS P. SWIFT,
Major General, U. S. Army,
Commanding.

THE quickened tempo of the modern warfare has not changed the mission of the combat Engineer, but has increased greatly the importance of the rôle he plays. His mission always has been to facilitate the movement of his own troops and to impede the movement of the enemy. His tools always have been explosives, bridging and road equipment, and sufficient ingenuity to use what materials he can find at hand.

As modern armies operate at greater speeds and over greater distances they become more and more dependent upon the road net. As the destructive power of modern weapons increases, the enemy is able to bring more and more effective measures to bear to render that road net useless by destroying the bridges and blocking the defiles. Thus the combat Engineer must increase the means at his disposal to break the way for his own troops. He must learn to adopt every hasty expedient; he must increase the range of his reconnaissance, and visualize his needs far in advance; he must decentralize his organization to work in small groups over an extended area; he must have power tools and rapid means to transport large quantities of materials. He becomes a Bahnbrecher, a breaker of the way.

Similarly, he must increase his efforts to impede the movement of the enemy. Road blocks must cover the flanks, and sometimes the front and rear as well, of his division. Antitank mine fields must be placed to canalize the enemy attack and give maximum effectiveness from antitank guns. These fields must be removed when they are no longer useful. Natural obstacles will be rendered effective by long hours of hard work. Thus the Engineer becomes a specialist in barrier tactics. His duties are myriad and none of them are so unimportant as to permit half-measures.

Major General Klinbeil stated in *Militär-Wochenblatt*, December, 1939, that the effectiveness of the German Engineers in the Blitzkrieg in Poland was due to three factors: First, that the High Command had increased in peace-time the allotment of Engineers to tactical units; second, extensive motorization had increased the mobility of Engineer units and bridge trains; third, that Engineer units were always ready for active service in the field. Our combat Engineers are well taken care of as far as numbers and transporta-

*8th Engineer Squadron, Fort Bliss, Texas.

The Eighth Engineer Squadron at a review of the First Cavalry Division

tion are concerned. It is toward the third factor that all our training efforts are directed.

Eighth Engineer Squadron History

The engineer component with the 1st Cavalry Division is the Eighth Engineer Squadron. This unit enjoys the unusual distinction of having had its inception in a foreign country, for Troop A was organized originally as Company A, 1st Battalion, Mounted Engineers, at Vado de Fasiles, Chihuahua, Mexico, on August 1, 1916. The first inspection of the new organization was conducted by General Pershing at Twin Windmills, Mexico on September 6, 1916. In February, 1917, Company A returned to Camp Stewart and on March 20, 1917, became a part of the First Provisional Cavalry Division, then under the command of Brigadier General Eben Swift, father of the present Commanding General of the 1st Cavalry Division, Major General Innis P. Swift.

In May, 1917, Company A was expanded into the 1st Battalion, Mounted Engineers, with Major Virgil Peterson, Corps of Engineers, in command. On July 13, 1917 the designation of the Battalion was changed to the Eighth Engineers (Mounted).

In June, 1919, the unit assisted the 2nd Cavalry Brigade in operations against the Villista forces in Mexico.

On May 11, 1927 the Battalion left Fort Bliss by rail for Fort McIntosh, Texas, for permanent change of station. In 1930, the Battalion was reorganized from three lettered companies and a headquarters and service platoon, all mounted, to three lettered troops, one mounted and two motorized, and a Headquarters and Service Troop, Motorized, and the designation was changed to the Eighth Engineer Squadron. Troop C, Motorized, became inactive upon reorganization. In 1934 the Squadron became completely motorized.

In 1936 the Squadron participated in the maneuvers of the 1st Cavalry Division at Marfa. It also took part in the Proposed Infantry Division tests at Camp Bullis, Texas, and in 1938 participated in the Cavalry Division maneuvers at Balmorhea, Texas. In 1939 the Eighth maneuvered at Camp Bullis with the 2nd Division, and again at Balmorhea with the Cavalry Division. Following the latter the squadron took part in the intensive training of the Division at Ft. Bliss until February, 1940, when it returned to Fort McIntosh. It took part in Army Maneuvers in Louisiana in May and August, 1940. To join the present concentration of the Cavalry Division, the Squadron moved to Ft. Bliss for permanent change of Station on February 6, 1941.

Organization and Equipment

While the mobility of the Cavalry Division enables it to operate independently of the road net while in battle, it must have combat engineers for any major movement. In division missions involving reconnaissance, counterreconnaissance, delaying action or security, barrier tactics and passage of obstacles play a major part.

The senior engineer officer with the Division has a dual rôle as Squadron Commander and Division Engineer. His squadron staff is so organized as to assist in certain special staff duties of the Division Engineer.

Under present tables of organization the Engineer Squadron is composed of two lettered troops each of four officers and 176 enlisted men, a Headquarters and Service Troop of two officers and 89 men, and a Medical Detachment of two officers and ten enlisted men. Four officers, including the Squadron Commander, are assigned to Squadron Headquarters. The total strength authorized is sixteen officers and 451 enlisted men. To date the Squadron has sent a total of 165 men to other units as cadres. Each lettered troop contains three platoons of three squads each. Each platoon has a ½-ton pickup truck and four 1½-ton dump trucks. Three of the dump trucks are normally used as squad trucks, the fourth and its one-ton trailer are used for platoon tools and materials. The troop has in addition a command car, a 4-ton cargo truck which pulls an 8-ton trailer carrying a medium traction with bulldozer, a 1½-ton dump truck and one-ton trailer for kitchen and water and a 1½-ton dump truck for troop tools and equipment. Three solo motorcycles, one motorcycle with side car and a motorized air compressor complete the troop transportation. Lettered troops are armed with 150 M-1 rifles, six air-cooled Cal. .30 Machine guns and 30 pistols.

Headquarters and Service Troop is divided into sections, whose designation and duties are shown below. Certain departures have been made from the Table of Organization to take care of changes in operating procedure.

a. Division Engineer Section (10 EM)
1. Designs and Estimates
2. Mapping and Map Reproduction
3. Coördination of Water Supply
4. Coördination of Construction
5. Experimental Studies and Tests
6. Camouflage Supervision

b. Training Section (2 EM)
1. Plans and Training
2. Operations
3. Intelligence
4. Coördination of Reconnaissance

c. Administrative section (9 EM)
1. Message Center
2. Orders
3. Personnel Subsection (5 EM)
   (a) Personnel Administration
   (b) Files and Records

d. Motor Section (10, 51 EM).
1. Supervision of Motor Maintenance
2. 2nd Echelon Maintenance
3. Operation and Maintenance of H/S Troop Motors

1—The 12th Cavalry crosses the standard 10-ton ponton bridge. 2—The foot bridge, 1935 model, can be constructed in triple width and used to cross mounted troops. The 2d Squadron, 12th Cavalry, is shown. 3—Part of the 12th Cavalry crosses the triple width foot bridge. If animals are closed up head to tail less deflection occurs at the joints of the bridge. 4—Triple width foot bridge will also cross light motor reconnaissance elements. 5—Where stream conditions permit some elements of the division may cross by swimming. 6—A scout car crosses on an improvised ferry constructed from six assault boats. 7—Horses are loaded on the assault boat ferry. Brush aids in keeping the animals quiet. 8—Troopers cross the single width foot bridge at the run.

4. Dispatching of Pooled Vehicles
5. Special Equipment Subsection (15 EM)
   (Includes Water Supply Equipment, Electric Lighting set and all other special equipment except lettered troop angledozers and compressors).
   (a) Operation of Special Equipment
   (b) Maintenance of Special Equipment
   (c) Transportation of Special Equipment

e. Supply Section (4 EM)
1. Supply of the Squadron
2. Special Engineer Supply for the Division
3. Procurement of Engineer Materials

In addition the usual troop headquarters is provided. H/S Troop and Squadron Headquarters are

equipped with a sedan, three command cars, two pick-ups, two motorcycles, 12 dump trucks, one 2½-ton cargo truck, and a 4-ton truck and dozer, a motorized compressor, a motorized earth auger and 12 1-ton trailers for special engineer equipment and materials. The wheeled vehicles of all types in the Squadron total 78 with 23 trailers.

H/S Troop is armed with 68 M-1 rifles and 23 Pistols.

Four officers constitute the functional staff of the Squadron. Their nominal grades and duties are as follows:

1. *Major*
   Executive. Supervision of Staff and command in the absence of the Squadron Commander.
   S-2, S-3. Operation, training, intelligence, reconnaissance; heads Training Section.
2. *Captain*
   S-1. Administration, communication, operation of message center, Hq. commandant, personnel; heads Administrative Section.
3. *Captain* (also commands H/S Troop).
   S-4. Supply of the Squadron, Engineer supply of the Division, operation of Special equipment; heads Supply Section.
4. *Captain*.
   Asst. Div. Engr. Liaison with Div. Hq.; heads Assistant Division Engineer Section.

The successful conduct of Engineer operations is to a large extent dependent upon thorough, coördinated work on the part of the Squadron staff. Often they must act on their own initiative, in conformity with the policies set forth by the Division Engineer.

Engineer Missions

The general missions of the Eighth Engineer Squadron in all operations of the 1st Cavalry Division are: (1) To facilitate the movement of the Division, (2) Impede the movement of the enemy, (3) Provide certain special services. All of these come under the general heading of increasing the combat efficiency of the Cavalry by the execution of engineering works.

The accomplishment of these missions may require the presence of small groups of Engineers over a large area. The highly mobile Cavalry Division is, for example, capable of reconnoitering a zone 30 miles wide to a depth of 20 miles per day, making a total of 600 square miles daily over which the Division Engineer must be prepared to furnish engineering assistance. It is necessary, therefore, that the squad be the operating unit, and that it be capable of operating with complete independence from the platoon and troop. The squad truck, the squad tools, a ten gallon can of water, extra gasoline and "C" type rations are considered integral parts of the operating unit. The squad also carries 20 antitank mines, oil tempered wire rolls, 25½-pound blocks of TNT, and such additional materials as the situation may indicate and the capacity of the truck permit.

For several years the Eighth Engineer Squadron has used squad tool sets improvised from the standard platoon and troop tool sets. Now a T/BA item of issue for all combat Engineer units, the present squad set contains enough tools to permit the entire squad to work at any type of task normally encountered. After extensive experimentation the Eighth Engineers developed and adopted the type of squad tool chests shown in the accompanying photograph. The floor of the truck is left open for materials and tools are immediately available for use simply by letting down the sides of the chests. The truck body can be raised to the dumping position without disturbing the tools, and if necessary the chests can be removed quickly by unfastening wing nuts on the interior of the boxes.

With eighteen squads operating over the Division front, the Division Engineer can, in any reasonable circumstance, accomplish his missions. However, coordination of that number of working parties requires systematic advance planning, particularly with regard to the supply of Engineer materials. Expedients must be adopted by the squad leaders, both to make full use of the materials found locally and to conserve time.

In such independent operations great reliance must be placed on the resourcefulness, ingenuity and initiative of the Engineer soldier. Just as these qualities are needed by the Cavalryman to make him an outstanding specialist in his type of fighting, so they are needed by the Engineer to make the best of the situation as he finds it, accomplish his task, and protect himself as he works.

Operations

In the initial phases of an operation it is the present policy in the 1st Cavalry Division to make as few attachments of Engineers to other units as possible. The bulk of the Engineer Squadron is held under the control of the Division Engineer ready for use on missions affecting the Division as a whole. On the march, when the type of terrain indicates that Engineers will be needed near the heads of the columns, a platoon will be attached to each brigade. These platoons should march at the tail of the advance guard. The condition may also arise where it is necessary to attach a troop to a brigade, as for example, when the brigade, on a detached mission, moves in more than one column through terrain having a large number of natural obstacles. The commander of the unit attached becomes the Brigade Engineer and as such has the responsibilities of a special staff officer serving the Brigade Commander.

A typical mission involving the use of the Squadron as a unit would be the creation of a zone of obstacles on a flank. The use of a barrier tactic will become particularly important when the Cavalry Division is operating on the flank of a larger force. Obstacles are created prin-

1—Water supply is an important function of Engineers with the Cavalry division. A 3,000-gallon canvas tank is mounted on an improvised tower. 2—Earth auger at work on a post obstacle. 3—Construction of the H-10 portable steel bridge. 4—Fixed timber bridges are used to cross motor elements over small streams and arroyas.

cipally by demolitions, which may involve the use of either explosives or fire, or by creation of hasty road blocks. The latter may be made from wire rolls and antitank mines, from materials found at the site, such as logs or boulders, or in the most hasty case, simply blocking the road with a vehicle, placing antitank mines on the enemy side and covering the whole with fire. No obstacle can be termed effective, of course, unless it is covered by fire. In the normal case deliberate obstacles have no place in the operations of the Cavalry Division. Antitank mines and craters are used as substitutes for prefabricated tank obstacles or extensive tank traps. The mobility of the Cavalry Division and the rapidly changing situation preclude the expenditure of a large amount of man power at any individual site. An engineer squad can place 100 yards of mine field, buried, in about 20 minutes, soil medium, laying from a truck, density 1½ mines per yard.

Concomitant with the creation of obstacles is the task of removing or passing the enemy's obstacles. This again becomes an Engineer task because of the frequent necessity for bridging or using explosives. The removal of road blocks seeded with anti-personnel mines requires the use of special technique to avoid heavy casualties. Light grapnels thrown from nearby cover are used to detonate trip wire mines or grenades. Electrical contact mines are detonated by minute inspection of the ground and the parts of the block itself. The passage of antitank mine fields is accomplished by means of probing a ten foot path through the field, exploding the mines within that path by detonating a block of TNT or a stick of dynamite on top of each mine, and marking the cleared path with tracing tape and poles. It is not safe to attempt to dig up and remove enemy mines because of the possibility of personnel mines being attached thereto. Often an explosive net made of primacord will prove useful in uncovering or detonating mines.

To create or remove an obstacle, to bridge a stream, or to perform any other Engineer task with maximum efficiency, constant planning for coördination of time, man power and materials is necessary. All subordinate Engineer commanders down to the squad leaders must cultivate the habit of such planning with the object of visualizing and preparing for contingencies that may arise in the next phase of the operation. The key to proper planning is familiarity with the terrain and a thorough knowledge of the road net, both of which can be obtained only by ceaseless reconnaissance. The Division Engineer must take every opportunity to send out engineer reconnaissance personnel with the mechanized vehicles of the Reconnaissance Squadron. Advance information on what lies 50 miles ahead will assist him immeasurably in planning Engineer operations. This information, together with that obtained by the Engineer Squads and reconnaissance parties operating over a wide front, should prove extremely valuable to the Army Engineer as well.

For example, a major stream crossing operation, which must be the most carefully planned and coordinated of all tactical operations, will require that detailed information as to the characteristics of the stream and its locale be obtained far enough in advance for the Army Engineer to obtain the necessary equipment and supplementary troops to effect the technical part of the crossing. In the normal case, where the size of the

stream is not great, the Engineers with the Cavalry assist the crossing of the Division by the use of expedients, fords and detours. Ten assault boats, each capable of crossing nine cavalrymen and a crew of two engineers, are carried with the Engineer Squadron. These are used to cross the initial force and are followed closely or are flanked by cavalry units swimming their mounts. An improvised ferry built of six assault boats will cross a scout car. The model 1935 foot bridge is used single width for dismounted troopers, and when built in triple width crosses mounted men, "Bantam" cars and motorcycles. One unit of bridge will construct 432 feet of single width or 144 feet of triple width bridge, and can be carried in four 1½-ton trucks. Recent tests at Ascarate Lake, near Fort Bliss, and at Radium Springs, New Mexico, indicate that the inclusion of the footbridge as organic equipment with the Engineer Squadron would be desirable.

Standard ponton equipment reinforced as necessary, will cross the Division loads. It is not organic equipment, but, like all combat engineers, the Engineer squadron must be able to use it when called on for its construction.

Repair and maintenance of roads and bridges may, under certain circumstances, take the major portion of the engineers' time, troops and equipment. This is particularly true in terrain such as that found in Louisiana in the locality used for Army maneuvers in 1940. Minor repairs and strengthening of bridges to carry Division loads was almost invariably necessary on all except main roads. Under such conditions a trailer load of bridge timber is carried with each platoon at all times. Portable shores for the temporary support of weak bridges and portable tread ramps for crossing narrow streams and ditches are also valuable.

Road repair and maintenance is hasty and temporary, using the materials available locally. No refinements are needed or desired. The object is to keep traffic moving with a minimum expenditure of time and labor—to get the job done in the time allowed or sooner.

Although situations are rare in which the Cavalry Division organizes a deliberate defensive position, the Engineer Squadron must be prepared to assist in organization of the ground. Four cavalry intrenching sets for use by the regiments are carried by the Squadron, and technical assistance is available as necessary. The Engineers must also be prepared to guide units into position, particularly at night, and are charged with marking routes.

Like all combat Engineer units, the Eighth must devote a large portion of its training time to training as infantry. The principal need for this preparation is to fit the small engineer groups to protect themselves in the conduct of their technical functions. Every working party makes full use of hasty road blocks and its rifles and machine guns to insure its own security. However, the Squadron may, in a grave emergency, be committed to combat as infantry, and this possibility must be kept in mind when planning operations. They should be used as riflemen only after careful consideration of the results of removing them from their normal engineer tasks. Also to be remembered is their relatively light strength and equivalent fire power. No supporting heavy infantry weapons, such as mortars and antitank guns are available to the Squadron. Their organization, while particularly developed and suited for purely Engineer missions, is retained in combat without change. The two light machine guns assigned to each platoon are usually withdrawn and grouped, by troop, for coördination of fire.

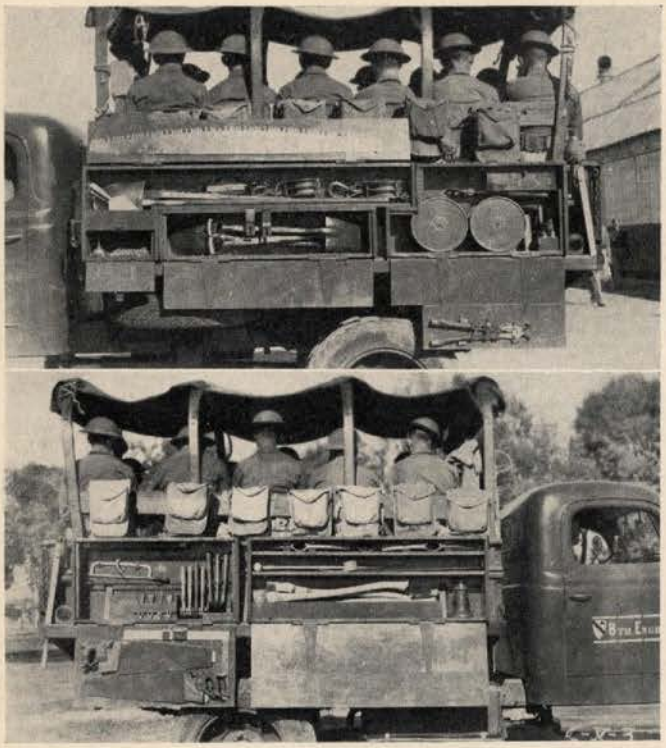
Special Equipment

So much for the duties performed by lettered troops and by the Squadron as a whole. In addition, certain functions are performed by the several special sections of H/S Troop, as previously outlined. Water supply, which is of great importance in the Cavalry Division, is handled by the special equipment subsection and involves supply both to men and animals. Recent changes in T/BA provide pumps for animal watering to the cavalry regiments and the horse field artillery battalions, but the nine engineer pumps, each with a capacity of 55 gallons per minute are available to supplement the organic equipment of the units when not needed for use with the water purification sets. Portable watering troughs are carried by the using units. For furnishing potable drinking water the special equipment subsection transports and operates three water purification sets, each with a capacity of 900 gallons per hour. These are reliable and easy to operate, and almost any source can be used. Coördination of water supply and development of sources is a function of the Assistant Division Engineer.

The latter is also charged with map supply for the Division. His section takes into the field facilities for the reproduction of a limited number of overlap and sketches, and contains personnel trained in map revision, surveying, drafting, photography and reproduction. Reproduction equipment now T/BA for the Squadron consists of the black and white method for making single 24″ x 30″ prints from tracings and the gelatin process duplicator, which will produce about 100 good impressions of an ink, carbon, colored pencil or typewritten negative, up to 22″ x 30″ in size.

A 2-3 kw. electric lighting set is operated by the special equipment subsection for use by the Division command post when in rest areas. About 100 25-watt bulbs can be operated from this set.

The increased tempo of present military operations has, as previously indicated, thrown a severe strain on engineer manpower. The use of power equipment has relieved this strain to a large extent, but it must not be regarded as a cure-all. The hand tool and individual sweat and ingenuity is still the backbone of Engineer work. Power tools are necessarily bulky, and each new item of power equipment adopted must be fully justi-



Top—The squad set, pioneer and demolition equipment. Bottom—The squad set, carpenter and pioneer tools.

fied by balancing its time and labor-saving factors against the resulting increase in weight and transportation.

Platoon power equipment consists of a Barco Hammer, which is a gasoline-driven machine of the jackhammer type, equipped to drill, break or tamp earth and stone. The engine is self-contained and the hammer is operated with ease by two men. A recent change in T/BA provides each platoon with a gasoline-operated saw which should be extremely useful when received.

Troop power equipment includes the angledozer and air compressor previously mentioned. The dozer is invaluable in road maintenance and in all types of construction involving earth moving. It is equipped with a light winch and with the large bearing area of its tracks is highly useful in extricating stalled vehicles from mud and sand and in assisting in the passage of fords by motor elements. The air compressor unit includes tools for every construction purpose, including jackhammers, a spike driver, a circular and a chain saw, augers, tampers, a vibrator, a paint sprayer, and even a small hammer for driving sheet piling. Air connections are provided for the operation of two tools simultaneously.

One of the most valuable items of equipment in the Squadron is the truck mounted power earth auger. It is capable of drilling 12″ to 24″ diameter holes in earth to a depth of 16 feet, either straight down or on a slant. Used in placing explosives behind bridge abutments or for road craters, the saving effected in labor and time is invaluable. It is also highly useful in construction of post or rail tank obstacles and in certain types of bridge construction.

Certain other types of equipment are not included in organic equipment of the Engineer Squadron, but are assigned as training equipment because engineers are likely to be called on for almost any type of construction, involving the use of a great variety of special equipment. Included in this category are the 10-ton ponton bridge unit, 250 feet in length, the H-10 portable steel bridge, and the footbridge, model 1935. The Eighth Engineers recently spent two weeks on the Rio Grande at Radium Springs, New Mexico, training with ponton and other floating equipment. The best construction time for 250 feet of ponton bridge, without time for preparing approaches, was one hour and two minutes during daylight, and two hours and eight minutes at night without lights.

The H-10 bridge is capable of supporting standard 10-ton highway loads over a span of 72 feet. A deck, truss bridge, floored in the manner of a ponton bridge, it is primarily designed for use over gorges, or where deep swift water prevents placing trestles or piers. It will support greater loads over shorter spans, and can be erected by a platoon in about two hours.

Construction equipment now in the hands of the Squadron for training purposes includes a ⅜-yard power shovel convertible into a drag-line piledriver, crane or ditcher, a motorized road grader capable of grading, ditching and scarifying, and a gasoline-powered concrete mixer.

Additional Equipment Needed

Certain additional equipment is needed by the Engineer Squadron for the efficient performance of its duties. The greatest need is for radio communication. The only means of communication now available is by motorcycle messenger, and in view of the far-flung operations of the cavalry division, this method, used alone, cannot but prove inadequate. Radio must be available for prompt notification of the execution of road block and demolition missions, for timely report of important reconnaissance information, and for use in assembling the Squadron in emergency. It is not practicable to rely on radios assigned to other units. Without radio communication, decentralization of the Squadron to the extent necessary to accomplish its mission to its fullest degree might easily result in complete loss of control. Five two-way voice and key sets are needed, one to be assigned to the Division Engineer, to operate in the division net, and four to operate in the squadron net, one to be assigned to the Executive Officer and one to each troop commander. In the meantime it is necessary to utilize attached scout cars with important road block, demolition and reconnaissance missions, thereby drawing them away from their own essential missions.

The need for the inclusion of the 1935 footbridge in T/BA equipment as a fast, mobile, practicable meth-

od of crossing Cavalry over streams not in excess of 150 feet has been discussed.

The single dominating feature in successful engineer operations is thorough reconnaissance. The means available for this purpose are inadequate. There exists an urgent need not only for radios but for reconnaissance vehicles which are not road bound and which are light enough to negotiate heavy sand and deep mud. Command cars, pickups and motorcycles are road bound to a greater or less degree and for that reason are extremely vulnerable to capture. This has been conclusively demonstrated by past maneuvers. "Bantam" cars are the ideal solution as a reconnaissance vehicle, and are also well suited for hasty demolition missions, for traffic control and for guiding units into position. At this time the Squadron's three motorcycles with side cars are being replaced with "bantams," and it is believed that an additional number should be assigned, possibly for use by an experimental reconnaissance platoon. Given a "bantam," the harried and roadbound Engineer Officer need not so often with despair watch the departure of the mounted elements across terrain over which he cannot follow in a truck.

In common with many other motorized units, the Eighth Engineers feel the lack of a suitable antiaircraft machine gun mount for use on the trucks. The twelve light machine guns of the Squadron could, if properly mounted, be very useful in the defense against low-flying aircraft while on the road or in bivouac.

Training

The mobility and fire power of the Cavalry Division make it a splendid weapon. The single great threat to its effectiveness lies in heavy mechanized attacks against its led horses or, in certain conditions, against mounted units on the march. Missions commonly assigned the Cavalry Division are those in which barrier tactics will play a large part. The use of the Engineer Squadron in canalizing local mechanized attack by means of mine fields and obstacles and in barrier tactics by means of demolitions and road blocks will become increasingly important.

Realizing the importance of the various duties outlined in the preceding pages, the 1st Cavalry Division has given the Eighth Engineer Squadron every opportunity to train at its normal functions. Such construction work as has been performed for the Post and the Division by the Squadron has permitted the training of construction supervisors, equipment operators and engineer specialists. Use of engineers as labor troops has been strictly forbidden and wherever practicable tasks assigned have had a tactical significance or a training mission.

This helpful coöperation has been of immeasurable assistance in furthering the training of the Squadron to accomplish its primary mission of impeding the movement of the enemy, and facilitating the movement of our troops.

"Often, indeed, after a successful war the victor has fallen asleep in a fallacious assurance of his superiority, while his opponent, striving to work out the causes of his defeat, struggles to recover from it. Hence, the victor of today becomes the vanquished of tomorrow: Rossbach succeeds Turkheim; Sedan, Jena; Rethondes, Sedan; may we not forget it!"

—General Maxime Weygand

(p. 251, "Turenne, Marshal of France," by General Max Weygand, English translation, 1930)

Turkheim, 1674, victory of Turenne and French over Germans.

Rossbach, 1757, victory of Frederick the Great and Prussians over French.

Jena, 1806, victory of Napoleon and French over Prussians.

Sedan, 1870, victory of Moltke and Germans over French.

Rethondes, 1918, Allies-German Armistice signed.

To the above can be added:

Sedan, 1940, victory of Hitler and Germans over French.

May we not forget that THEY forgot!

Cavalry Swims Full Pack

By Major Gordon Rogers, 6th Cavalry

IT can be foreseen that the mechanized squadron of the Horse and Mechanized Cavalry Regiment may often be stopped along an unfordable stream on account of demolished or defended bridges. In spite of this, reconnaissance must go on. At this point the Horse Squadron enters the Horse-Mechanized team and continues the reconnaissance by swimming the stream between defended points.

Unless the stream is very narrow, this requires prior training in crossing streams by swimming. It has often been said that the horse is a natural swimmer, and that horse cavalry can cross rivers by swimming with little training. Experience does not seem to bear this out. Experience indicates that while horses can swim wide streams when unencumbered by rider, saddle and equipment, a large percentage are at first unwilling to enter, and are thrown off balance by rider, saddle, and equipment. In addition untrained riders lack confidence, and determination to enter, and having entered, hamper their mounts by lack of skill in the water.

If we add to the above considerations the fact that time will often be of the essence (it is only necessary to visualize being chased to the river by tanks!), it is apparent that horse cavalry must be able to cross; riders with their horses, horses saddled, most of the equipment on the saddle.

Realizing the necessity for this training, the commanding officer 6th Cavalry, Colonel John A. Considine ordered the 1st Squadron, 6th Cavalry, commanded by the writer, to conduct swimming instruction during parts of May and June.

Accordingly the squadron conducted this training as follows:

Troop "A" May 12th-24th.

Troops "B" and "C" May 26th-June 3d.

The Squadron June 4th-June 13th.

Pro rata shares of the Veterinary Detachment, Troop Aid men, and the Headquarters Detachment, 1st Squadron, were attached to troops.

The swimming site was a safety harbor on the Tennessee River, near Harrison Bay Landing, Tennessee. It was fifty-four (54) yards across. The banks sloped very steeply, so that, at least forty-five (45) yards of this required a horse to swim.

Prior to the swimming camp, troops were instructed in swimming according to the provisions of Paragraph 50, FM 25-5, the article in The Cavalry Journal of January-February, 1941, by General Harry Chamberlin, and the Signal Corps Training Film. Much benefit was derived from this instruction, however, our experience indicated that certain teachings of the past are erroneous.

Before going into these, it must be noted here that conditions vary; the 6th Cavalry swimming site had no current, and the weather was warm.

The following past teachings are thought to be in error:

1. Necessity for a dipping vat.
2. Herding.
3. Use of halter with reins.
4. Use of a rope around the neck.
5. Use of breast strap for herring gutted horses.
6. That a horse is in imminent danger of drowning if he goes under.
7. That pack horses cannot swim safely with the pack saddle.
8. Use of floats made from pack saddles (unless time is ample).

Taking these in order, our experience was as follows:

1. While there is no objection to the use of a dipping vat to accustom horses to entering and swimming, the following is considered preferable: Use of a long rope, one end attached to the halter ring, the other end manned by two men on the opposite bank. The horse should be bridled and ridden bareback into the water. He should not be towed by the rope, but merely directed, the slack should be taken up.

In this way the horse gets more instruction in entering and more exercise in swimming than he would in a dipping vat.

2. Herding is thought to be a disadvantage, in that many horses will not enter, and many having entered will turn around and swim back. This teaches them to refuse, just as continued refusals at a jump confirms a jumper in refusing. It is thought that better results are obtained by riding, or a combination of riding and use of the long rope as in 1 above.

3. Use of the halter with reins attached to the square rings on the sides did not give as good results as the snaffle bridle from the start.

4 and 5. Many horses become panicky, rise in front, fight the water, and go under when ropes or straps are placed around the neck or across the breast. This is so regardless of how loosely the strap is adjusted, apparently through "Fear of the trap."

6. It was our experience that it is almost impossible to drown a horse unless the saddle has slipped back hobbling him. There is no occasion for shouting or excitement when a horse goes under, as he usually comes up and swims ashore, or turns over on his side and floats with his nostrils out of water. In the squadron there were several horses who would float on their sides a half hour or more, one with a stripped pack on (the exact time was not determined as they were towed ashore before they either sank or swam!).

7. The squadron experienced no difficulty in swimming pack horses with the stripped pack, it was our experience that they swam as well as horses with the McClellan saddle.

8. The pack floats described in the January-February, 1941, Cavalry Journal were found to be excellent. They were capable of carrying all of the pack loads of the squadron in one trip. However considerable time is required to construct them. This eliminates their use when speed is essential. In order to provide a quick means of getting pack loads across the stream Colonel Considine had some light canvas boats constructed using the Gold Medal Cot as a frame. This boat can be assembled in two minutes or less, it will float 800 pounds or more safely while being towed, and can be transported as a top load on two Light Machine Gun or Ammunition packs. (See description of its construction and use in an article by Lieutenant James Madden in this issue of The Cavalry Journal.)

Using the methods described herein the squadron did not lose a man nor a horse during the entire period.

On June 12th the squadron in line of Troop columns of twos crossed the safety harbor with all loads in four minutes and three seconds.

A description of the method of instruction, and a suggested schedule follow:

Method of Instructing a Horse Troop in Swimming

I. *Condition of Horse.*
   - *a.* Walk up and down hills.
   - *b.* Wading where necessary to swim 2 or 3 strokes.

II. *First Phase:*—Entry into water. (Most important phase of swimming.) Horse must enter willingly (petting and feeding sugar).
   - *a.* Wading by troop (bareback, snaffle reins).
     1. Platoons in column of twos, wade in and and out of water 3 or 4 feet deep.
   - *b.* Wading in water progressively deeper involving swimming 2 or 3 strokes. Schooling concurrent, horse true on turns, flexible to both sides (bent around inside leg).

III. *Second Phase:*—Towing.
   - *a.* Equipment.
     1. Rope 150 feet, ¼-inch—rings and snaps on both ends.
   - *b.* Method.
     1. Each horse led across by two men on opposite bank, with a man mounted as in Paragraph IV below, rope snapped into halter ring. (Halters in good condition to be used.)
     2. Horse not pulled across, but led by rope, let horse swim, slack taken up.

During training, life guards are posted . . . just in case . . .

3. Horse in trouble may be pulled to shallow water by rope.

IV. *Third Phase:*—Swimming bareback.

a. Equipment, Horse.

1. Bridle-snaffle-bit, reins unfastened (no advantage in using halter with reins).
2. Curb reins removed. Do not use rope around neck nor breast strap (horses fight them in the water).

b. Equipment, Men.

1. Shoes, preferably gymnasium, bathing suits, life belts, Kapok Jackets or life preservers, crop or switch.

c. Method: Entry.

Use short reins and lots of leg. Do not allow horse to avoid by continually wheeling to the same side—if he wheels to the left make him turn back to the right.

1. Platoon (Squad) in column of twos led by Platoon (Squad) leader.
2. Interval between horses two yards, distance between sets of twos, 2 yards.
3. Dismount on clear side (where there are no horses) let go reins, grab tail as horse goes by.

V. *Fourth Phase:*—Swimming horses with stripped saddles, no stirrups.

a. Equipment:

1. Cinchas one hole or more looser than normal, cincha loose enough so that a man can get the thickness of two hands held palm to palm between the cincha and the horse (about 3") (mohair cincha shrinks 2 inches, canvas cincha ¾ inch) horse expands, and blanket swells in water.
2. Saddle well forward, reins separated (unfastened).

b. First Method:

1. Horse ridden into water, short rein.
2. Entry should be quiet and orderly.
3. Platoon in column of twos led by platoon leader.
4. Once horse is committed to opposite bank and swimming, men slide off on clear side.
5. Hold onto cantle of saddle with hand nearest horse.
6. Use legs to keep other horses away.
7. In stream with current, men dismount on upstream side, directing horse with snaffle rein to prevent him from turning down stream, using leading rein, no tension to the rear.

c. Second Method:

Same, except sliding off directly to rear holding cantle and swimming directly above horse. In this method, the man can remount as he nears the opposite bank.

VI. *Fifth Phase:*

a. Equipment.

1. Saddles, stirrups-saddle-bags (saddle-bags not fastened to cincha).

b. Method:

1. Same as with phase four.

VII. *Machine Gun Platoon:*

a. Equipment for pack animals.

1. Stripped pack, pack bridle (reins unbuckled).

b. Method:

1. Hangers, guns, ammunition boxes, loaded into floats or small boats.
2. Two men swim pack float across, or three men swim across dismounted taking tow rope, then tow canvas boat across. Three men on near bank tow it back empty if other trips necessary.

TWO-WEEK SCHEDULE — SWIMMING HORSES

DAY		TIME	SUBJECT	UNIFORM	TEXT
1st	AM	7:30- 9:30	Instruction swimming, general rules and adjustment of equipment.	Drill	FM 25-5 and Sq. Memo. on swimming.
		9:30-11:30	Entering water. Wading, practice in adjusting equipment.	Drill	
		11:30-12:00	Care of animals and equipment.	Fatigue	FM 25-5.
	PM	1:00- 2:00	Construction of and floating packs.	Trunks	Sq. Memo.
		2:00- 4:00	Entering water. Wading, practice in adjusting equipment.		
		4:00- 5:00	Care of animals and equipment.	Fatigue	FM 25-5.
2d	AM	7:30- 9:30	Entering water. Wading, practice in adjusting equipment.	Trunks	FM 25-5.
		9:30-10:30	Construction of and floating packs.	Trunks	Sq. Memo.
	PM	12:00- 2:00	Same as morning session, towing horses across stream.	Trunks	
		2:00- 3:00	Small unit training.		
		3:00- 4:00	Care of animals and equipment.	Fatigue	FM 25-5.
3d	AM	7:30- 9:30	Small unit training.	Drill	
		9:30-11:30	Towing all horses across stream.	Trunks	FM 25-5 and Sq. Memo.
		11:30-12:00	Care of animals and equipment.	Fatigue	FM 25-5.
	PM	1:00- 2:00	Small unit training.	Drill	
		2:00- 4:00	Swimming horses and men bareback.	Trunks	FM 25-5 and Sq. Memo.
		4:00- 5:00	Care of animals and equipment.	Fatigue	
4th	AM	7:30- 9:30	Swimming horses and men bareback.	Trunks	FM 25-5 and Sq. Memo.
		9:30-10:30	Instruction in care of animals in field.	Fatigue	FM 25-5.
	PM	12:00- 2:00	Swimming horses and men bareback.	Trunks	FM 25-5 and Sq. Memo.
		2:00- 3:00	Construction, loading, and towing cot boat.	Trunks	Sq. Memo.
		3:00- 4:00	Care of animals and equipment.	Fatigue	FM 25-5.
5th	AM	7:30- 9:30	Small unit training.		
		9:30-11:30	Swimming horses and men bareback.	Trunks	FM 25-5 and Sq. Memo.
	PM		Same as PM 4th day.		
6th	AM	7:30- 9:30	Swimming horses and men bareback.	Trunks	FM 25-5 and Sq. Memo.
		9:30-10:30	Small unit training.	Drill	
	PM	12:00- 2:00	Swimming horses and men bareback.	Trunks	FM 25-5 and Sq. Memo.
		2:00- 3:00	Care of animals and equipment.	Fatigue	FM 25-5.
		3:00- 4:00	Correction of deficiencies.		
7th	AM	7:30- 9:30	Small unit training.	Drill	
		9:30-11:30	Swimming horses and men with saddles.	Trunks	FM 25-5 and Sq. Memo.
		11:30-12:00	Care of animals and equipment.	Fatigue	FM 25-5.
	PM	1:00- 2:00	Small unit training.	Drill	
		2:00- 4:00	Swimming horses and men with saddles.	Trunks	FM 25-5 and Sq. Memo.
		4:00- 5:00	Care of animals and equipment.	Fatigue	FM 25-5.
8th	AM	7:30- 9:30	Swimming horses and men with saddles.	Trunks	FM 25-5 and Sq. Memo.
		9:30-10:30	Correction of deficiencies.		
		10:30-11:00	Care of animals and equipment.	Fatigue	FM 25-5.
	PM	12:00- 2:00	Swimming horses and men with saddles.	Trunks	FM 25-5 and Sq. Memo.
		2:00- 3:00	Care of animals and equipment.	Fatigue	FM 25-5.
		3:00- 4:00	Small unit training.		
9th	AM	7:30- 9:30	Small unit training.	Drill	
		9:30-11:30	Swimming horses and men with saddles.	Trunks	FM 25-5 and Sq. Memo.
		11:30-12:00	Care of animals and equipment.	Fatigue	FM 25-5.
	PM	1:00- 2:00	Instruction in swimming, full pack.	Fatigue	
		2:00- 4:00	Swimming horses and men, full pack and packs and equipment across stream in cot boat.	Fatigue	
		4:00- 5:00	Care of animals and equipment.	Fatigue	
10th	AM	7:00- 9:00	Problem: March, approach formation, cross stream establish bridgehead	w/arms and Full Pack	
		9:00-11:30	Care of animals and equipment.	Fatigue	FM 25-5.
	PM		Reserved for training in deficiencies.		
11th			Reserved for demonstration, Night swimming.		
12th			Reserved for training in deficiencies.		

NOTE: Men who are poor swimmers will be given swimming instruction daily by selected instructors concurrent with small unit training.

3. Riflemen and led horses of squad.
   (a) Man leading pack horse dismounts between pack horse and riding horse using legs to keep pack horse headed across stream and away from his horse.
4. On reaching opposite bank packs are loaded or Machine Guns set up.
5. Training of pack horses concurrent with riding horses; first bareback, then with McClellan Saddles, then with stripped pack, and finally with full load.

VIII. *SAFETY PRECAUTIONS:*

The following equipment and safety precautions are desirable *but danger should not be stressed:*

a. Equipment:

1. Three-quarter-inch cable stretched across stream below swimming area as safety line.
2. Boats: Motor boat with motor operator, man in bow with boat hook, man in stern with paddle, inner tubes or kapok jackets on rope as life savers.
3. Two rowboats, equipped like motor boat.
4. Position of boats.
   (a) One rowboat on each side swimming area, one motor boat either side.
5. Megaphones. (Used only when absolutely necessary, yelling excites the horse and confuses the man.)
   (a) One on each bank, used by an officer.
   (b) One in boats.
6. Tent with cots, blanket and stove for resuscitation.

b. Life Guard Personnel.

One platoon acts as life guards and handles boats while rest of troop swims.

1. Four men on entry side to catch loose horses.
2. Four life guards on entry side.
3. Four life guards on exit side.
4. Rest of platoon on exit side to catch horses.

c. Leadership:

1. Platoon Leader:
   Check:
   (a) Cinchas must be properly adjusted.
   (b) Reins must be unfastened.
   (c) Non-swimmers and poor swimmers wear life jackets.
   (d) Stirrups crossed and tied when used, initially stripped saddle without stirrups.
2. Each platoon leader leads his platoon across. Leadership is important.
   (a) Each Corporal leads his squad.
   (b) Platoon Sergeant and Sergeant file closer where needed.

IX. *Conclusion:*

It is important that horses enter the water willingly, swimming them while they are thirsty, and then letting them drink on opposite side facilitates ease of entry.

Horses being herd-bound, enter the water on a narrow front, toward the picket line. Later on, entry on a wide front is not difficult, column of platoons as foragers or column of platoons in line of half squad columns. There must be no delay in getting horses into the water once the leading horses have started for the opposite bank.

Some form of reward should be given on exit side. Sugar or oats and a pat on the neck. When horses have swum with saddles, the cinchas should be adjusted before remounting, as the water tightens them.

Do not use term "Selected Swimmers." Have all men swim horses. Poor swimmers and non-swimmers use kapok jackets. All must cross with their horses. Poor swimmers can be picked out by having the troop swim the distance with fatigue clothes and shoes on.

Horses are natural swimmers and there is little danger connected in swimming them. *DO NOT EMPHASIZE DANGER TO THE MEN.*

In the first phase some horses should be held on opposite bank to attract the horses which are to swim.

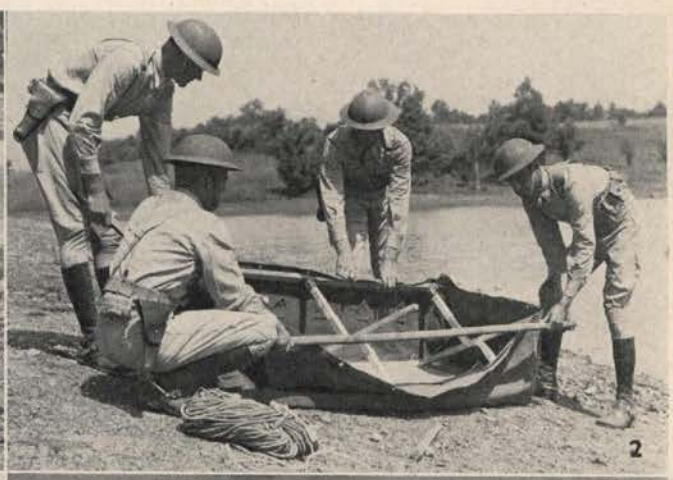
Troops should keep written records of poor swimmers (both horses and men); swimming instruction for poor swimmers should continue through the period.

NOTE: It is interesting to note that the horse in swimming propels himself forward almost entirely by his forelegs; the hind legs merely tread water gently, apparently just enough to keep the hindquarters themselves afloat.

There are a large number of stratagems and ruses for the passage of rivers which each employs depending upon whether he is more or less skilful or ingenious.—*SAXE.*

Portable Boat for Stream Crossing

By Lieutenant James H. Madden, 6th Cavalry



1—Boat materials on top of pack of each horse. 2—Canvas being placed around inverted cot and side rails put in position. 3—Light finished boat being carried to stream for loading. 4—Boat loaded. The tow rope in front is used to pull boat across stream. 5—Landing completed. Equipment unloaded from boat on shore with another boatload arriving.

CAVALRY to function efficiently, must be able to cross water obstacles with little or no loss of time, personnel, or equipment. One of the greatest problems has been in getting ammunition and the heavier weapons across streams safely, dry, and with no delay to troop movement.

A striking success in the solution of this problem has been achieved by Colonel John A. Considine, Commanding, Sixth Cavalry, in his design of a light, portable canvas boat. Consisting of only materials normally carried with the troops, it is tough and spacious when assembled, light and compact when in pack. Its best feature for Cavalry use is the rapidity of assembling, disassembling and packing.

In a troop organization the ideal crew to handle each boat has been found to be one squad. As the boat is normally carried on two ammunition or gun packs it is practicable to designate each light machine gun squad as one complete boat crew. The organization is as follows:

MEN

Two horseholders
Four men, assembling, loading and launching
Two swimmers

Eight

Procedure upon arrival at an unfordable stream. The squad dismounts.

(1) Horses are turned over to two of the pack drivers.

(2) Two previously designated (strong) swimmers remove encumbering clothing and equipment.

(3) The other four men remove the boat from the pack and assemble it.

(4) One man swims the stream with the free end of the tow rope.

(5) The boat is loaded and launched.

(6) The second swimmer swims alongside the boat as it is towed across.

(7) The boat is unloaded by the swimmers.

(8) If necessary, the boat is returned for additional loads. To facilitate this operation a second tow rope is attached to the rear of the boat.

(9) The remainder of the squad swims all horses across the stream as prescribed in the article by Major Rogers in this issue of The CAVALRY JOURNAL.

(10) The squad continues on its mission.

The above organization can be modified to meet varying tactical situations. Due to the simplicity of assembly, for example, two men could handle the boat, freeing two for some special mission.

The Mechanized Squadron is also equipped with this boat, which is carried easily in scout car or bantam. Its value is proven in getting the heavy guns across when a bridgehead must be established.

Construction:

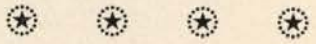
1 Gold Medal Cot.
36 Feet rope, or twenty-two straps w/buckles.
2 Braces, wood, 6′, 6″ each.
2 Braces, wood, 2′, 6¾″.

The cot inverted furnished the main frame-work. The wooden braces furnish linear and lateral support at the top. The canvas is sewn to fit rather snugly on bottom, sides and ends. The top is left open. The canvas is secured to the boat by lacing rope over and under the braces through metal eyes. (Straps and buckles may be substituted.) The tow rope is secured to canvas tabs on either end of the boat.

Assembled, complete with three hundred eighty feet of tow rope, the weight is less than fifty-eight pounds. Assembly has been accomplished by four men in one minute, twenty-five seconds; disassembly, in less than a minute. The maximum load is over eleven hundred pounds however a safe load while being towed is about eight hundred pounds.

In trials the boat has carried six light machine guns complete with tripods and ammunition; also two Phillips packs with two guns and ammunition.

Packing: To avoid unwieldy, bulky packs the boat should be carried on two ammunition or gun packs. The tow rope is rolled tightly in the canvas and is either tied or strapped down as a top load on one pack. The cot and braces are similarly attached to the other pack.



Learn to Swim

Every young soldier, without exception, should in the summer months be taught to swim; for it is sometimes impossible to pass rivers on bridges. The flying and pursuing army, both, are often obliged to swim rivers. A sudden melting of snow or fall of rain often makes them overflow their banks, and in such a situation, the danger is as great from ignorance in swimming as from the enemy. The ancient Romans, therefore, perfected in every branch of the military art by a continued series of ways and perils, chose the Field of Mars as the most commodious for their exercises on account of its vicinity to the Tiber, that the youth might therein wash off the sweat and dust, and refresh themselves after their fatigues by swimming. The cavalry also as well as the infantry, and even the horses and the servants of the army should be accustomed to this exercise, as they are all equally liable to the same accidents.

* * * * *

The Cavalry, throwing off their accoutrements, make small floats of dry reeds or rushes on which they lay their arms and cuirasses to preserve them from getting wet. They themselves swim their horses across the river and draw the floats after them by a leather thong.—VEGETIUS.

Notes From the Chief of Cavalry

New Pack Radio

The Chief of Cavalry has requested the Chief Signal Officer to develop a new pack radio to replace the old SCR-203 set. The following military characteristics were prescribed for the new set:

a. PURPOSE.—To replace radio set SCR-203.

b. TRANSPORTATION.—To be carried on one Phillips pack saddle, Cavalry type.

c. WEIGHT.—Complete with hangers and accessories, not to exceed 100 pounds. A minimum of weight is desired.

d. RANGE.—Sixty miles.

e. USE.—Capable of operation in pack and on the ground. To transmit, it is expected that it will be necessary to halt the pack animal. The receiver should be operable during movement.

f. TYPE OF SIGNALS.—Continuous wave only.

g. FREQUENCY.—By a simple operation such as the interchange of coils, to be capable of intercommunicating in tactical nets with radio sets of similar characteristics pertaining to Cavalry, Infantry, Field Artillery, Armored Force and Air Corps. For any one set-up, or change of coils, to have not less than 20 channels within a band of frequencies covering those assigned to tactical units within its range of operation. By the use of a switch or similar method, to be capable of operating on any one of four preselected frequencies, crystal controlled.

h. POWER.—Receiver; dry batteries, minimum life —24 hours. Transmitter; hand generator. Capable of utilizing power-operated generator and storage battery is desirable.

i. ANTENNA.—"Fish pole," slender, flexible, all-steel, with positive looking joints (present types break at joints and easily become unscrewed); maximum length in motion, 6 feet; maximum length stationary, 20 feet.

j. MISCELLANEOUS.—Set to be contained in two compact cases to afford a low, well balanced pack load. There should be no top load. Wire connections from operator to set to be minimum and of sufficient length to permit operation several feet from the set. Set and parts to be well protected from moisture and dirt. Special attention should be given to all electrical connections to prevent loosening. Maximum insulation against shock is required. Dry batteries should be capable of being removed and installed quickly without the aid of light. Operating controls to be readily accessible while in pack.

* * *

Field Manuals

A new Basic Field Manual entitled *Revolver, Caliber .45 (Colt M1917 and Smith and Wesson M1917)* has been prepared by the Cavalry School and is now being printed. It will bear the number 23-36. This manual was necessitated by the fact that many army units are now armed with the revolver, caliber .45, in lieu of the automatic pistol, caliber .45. Pending publication of this manual, temporary instructions are given in War Department Training Circular No. 33, Section II, May 9, 1941.

There are numerous errors in our current Field Manuals. The majority of these are of a minor nature and have no effect on training. The publication of a change to include all errors would require such extensive posting as to make the manual difficult to use. For this reason, changes are being limited to those items which have an important bearing on methods of training. A file of errors is being maintained for use in making a complete revision when the manuals are reprinted.

At the present time the volume of work in the Printing Office is so great as to require considerable time for the printing of changes. War Department Training Circulars, which are mimeographed, are published without delay, and are used to announce changes prior to their printing.

FM 23-40, *Thompson Submachine Gun, Caliber .45, M1928A1,* was in need of extensive revision, with a view to simplifying the qualification course and clarifying the explanation of the course. These changes were so extensive that an entirely new manual will be printed. The new manual may be expected about October 1, 1941.

* * *

The personnel sections in our current Tables of Organization were set up with the intent of performing all personnel work within the troops, and prior to the introduction of the classification section. This matter is under study by the War Department. Recommendations have been submitted by the Chief of Cavalry to correct the present organization.

* * *

Extension Courses

The 1941-42 Program, Extension Course of the Cavalry School, has been completed. The subcourses are in the hands of the printers. The Cavalry School has written or revised the following Cavalry subcourses for the 1941-42 school year:

20- 1	Pistol and Rifle Training.
20- 2	Cavalry Rifle Platoon.
20- 3	Cavalry Scouting and Patrolling.
20- 5	Light Machine Gun Training, Ground
20- 6	The Light Machine Gun Platoon.
30- 1	Heavy Machine Gun and Caliber .50 Machine Gun Training, Ground.
30- 2	The Machine Gun Platoon, Machine Gun

Troop (Cavalry Regiment, Horse), and the Caliber .50 Machine Gun Platoon, Special Weapons Troop (Cavalry Regiment, Horse).

30- 4 The 81-mm. Mortar; Mechanical Training, Marksmanship, Technique of Fire.

30- 5 81-mm. Mortar Platoon (including the Squad and Section).

30- 7 Submachine Gun, Light Machine Gun, and Caliber .50 Machine Gun Training, Vehicle.

30- 9 Staff, Communications, Scout Car, Motorcycle and Transportation Platoons of Headquarters and Service Troop, Cavalry Regiment, Horse.

30-10 Combat Duties of Cavalry Intelligence Personnel.

40- 3 Cavalry Troop, Rifle, Horse.

40- 4 Machine Gun Troop.

40- 5 Cavalry Troop, Special Weapons, Horse.

40- 6 Regimental Staff and Headquarters and Service Troop, and Brigade and Division Headquarters Troop.

40- 7 Mechanized Reconnaissance Platoon, Troop and Squadron.

50- 4 The Reinforced Cavalry Squadron, Rifle, Regiment, Horse, in Counterreconnaissance, Delaying Action, and Defense Against Mechanization.

50- 5 The Reinforced Cavalry Squadron, Rifle, Regiment, Horse, in Offensive Action.

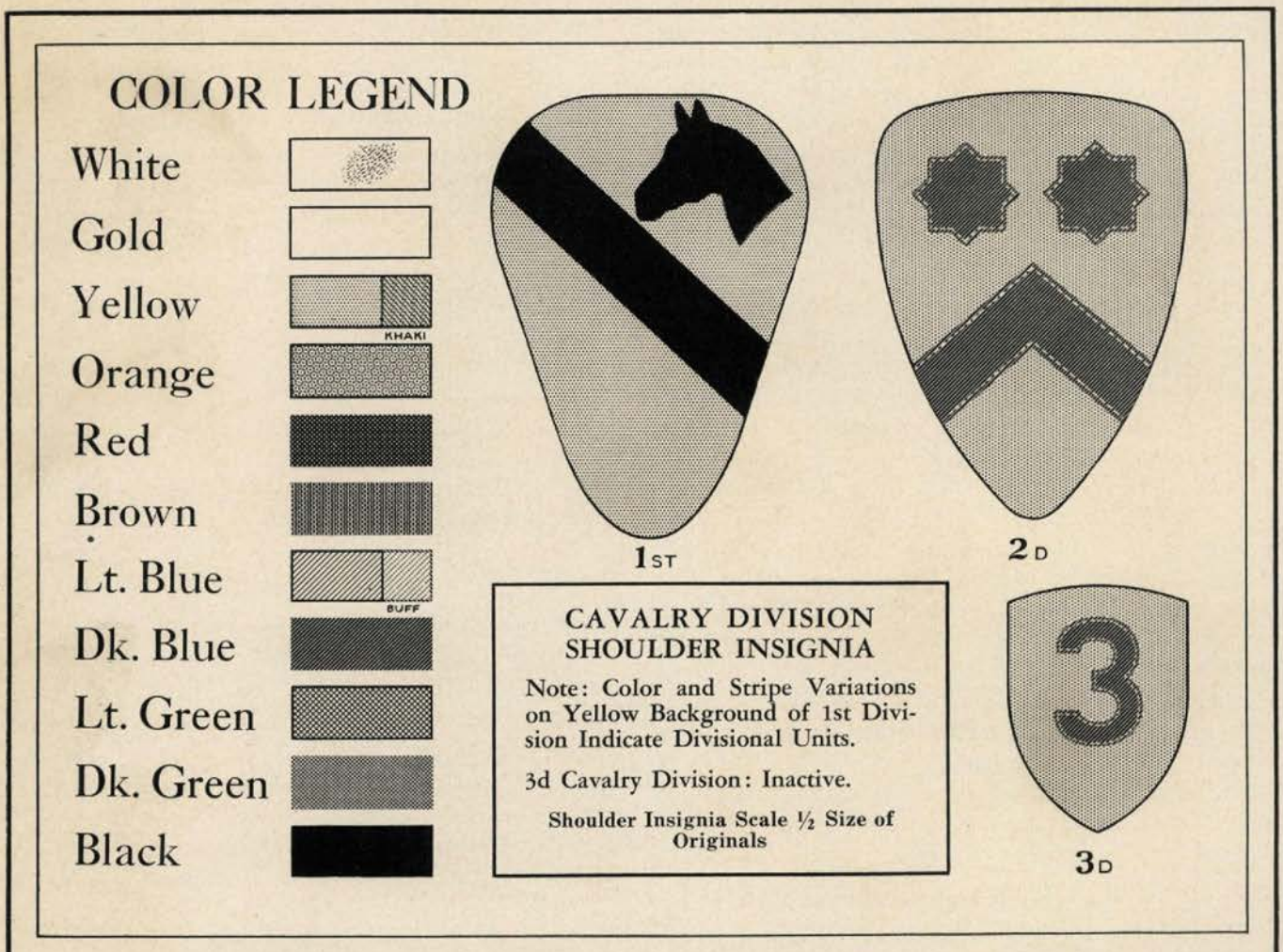
50- 6 Reconnaissance Squadron, Mechanized, Cavalry Division, Horse.

Training Films

Scenarios for training films No. 204, *Pack Transportation* and No. 55, *Light Machine Gun Platoon, Cavalry Rifle Troop, Horse,* have been written and approved for production; films are being made by the Research Council of the Academy of Motion Picture Arts and Sciences. Troops of the 11th Cavalry, Camp Lockett, California, will be used in making the films. Training film No. 220, *Cavalry Rifle Platoon,* is being made at the Cavalry School.

Special Weapons Troops

The Chief of Cavalry has recommended that the Special Weapons Troops of the Horse Regiments be motorized with Bantam cars. It is also recommended that the general composition of these troops be: one platoon of four 81-mm. mortars, one platoon of six 37-mm. antitank guns, and a reconnaissance platoon to be formed by the transfer of the present scout car and motorcycle platoons from the headquarters troop.



CAVALRY REGIMENTAL DISTINCTIVE INSIGNIA

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1ST

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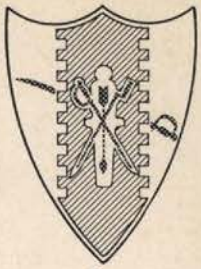


4TH

5TH

6TH

7TH

8TH

9TH

10TH

11TH

12TH

13TH

14TH

26TH (P.S.)

101ST

102D

104TH

106TH

107TH

112TH

113TH

115TH

124TH

Editorial Comment

Mobility and Maneuverability

Today, when the eye of public opinion is focused on national defense, we find that many specific military terms are being used by the general public without literal appreciation of their technical significance and application. A very simple term, which we probably hear and see most often and which is so often misused, is the word *mobility*. This is natural. We hear of mobile warfare; of the metaphoric mental mobility; and this, of course, is the age of superior mobility on land, sea, and in the air, as a result of the highly developed motor. Yet, as a military term, mobility does not necessarily imply *maneuverability*—and, tactically speaking, *effective battlefield maneuverability* is the objective which we have most sought through the ages and wish to increase in order to prevent stabilized military situations.

In other words, mobility implies the ability to move from one place to another, traversing the intervening terrain at a comparatively high rate of speed. In this sense, wheeled vehicles have a limited cross-country mobility and a very high road mobility; whereas, track-laying vehicles and horses have a higher cross-country mobility and a proportionately lower road mobility. All of which brings us to the term *maneuverability.*

While maneuverability implies mobility, there is a vast difference in its application in warfare. *Maneuverability is necessary* for military evolutions—dexterous, adroit, or artful moves in the theater of operations *on or near the battlefield.*

The transport airplane has extreme mobility, yet not sufficient maneuverability for air combat purposes such as an air "dog fight." Men and horses in trucks have great road mobility, yet, while in the trucks, they are incapable of effective battlefield maneuver and, therefore, are extremely vulnerable to attack.

The creation of motorized divisions offers new possibilities in *strategical* maneuver, but it obviously has not done away with the requirements that weigh heavily upon all motor wheeled-transportation; i.e., a good road net, the protection of this road net and above all, complete security during movements.

The general use of tractors and wheeled prime movers has increased the efficiency of large-calibered, long-range artillery; this and the recent development of dive-bomber and air support methods have made the road situation hazardously acute since they can help destroy or interdict roads far beyond their respective battle fronts.

The necessary ground work has been set up that ultimately, we believe, will give us air superiority over probable enemy nations. Antitank units, similarly, are in the making that should enable us to break up large tank formations; all of which will bring us back to the fundamental principles existent prior to the present conflict.

Thus, we arrive at the real point of discussion: Is it mobility or maneuverability we now seek? We obviously must have both—mobility for strategic and tactical concentrations, but with emphasis on *maneuverability* for combat. Mobility alone is insufficient!

The Americas' defense problem is different from that of Europe where powerfully armed nations are separated only by frontiers, with military road nets and spy and "termite" elements highly developed. Their peculiar situation calls immediately for shock and power tactics with little opportunity for extensive employment of reconnaissance units. The Americas, on the other hand, cover enormous wooded, mountainous, and uncultivated areas. Any invasion of the Americas by a sagacious enemy would very probably be where he could gain a foothold and establish bases without being opposed initially by effective ground forces—thus creating the orthodox meeting engagements.

Since men and animals still can go places, particularly in this hemisphere where motor vehicles would find great difficulty reaching—if at all—until suitable roads could be developed, Horse Cavalry looms bright on our military horizon as an essential element of a balanced army combat team. It not only possesses strategic mobility, but also that great and necessary tactical maneuverability, over all manner of terrain and during all climatic conditions, day and night. "Where motors can't go, horse units will flow." Our cavalry today, with its highly mobile and *maneuverable firepower elements* and sustaining qualities, stands supreme in its field. Given adequate air support and Corps organization, hard-hitting American cavalry divisions, with their extreme *battlefield maneuverability,* will effectively cover the advance of our armies and exploit a success—or failure.

Colonel Rodney Awarded Gordon Johnston Trophy

In 1926 the officers of the 379th Field Artillery, while training at Fort Riley, Kansas, conceived the idea of establishing a trophy as a token of their appreciation of courtesies shown to them at Fort Riley, to be awarded year after year for some praiseworthy feat of horsemanship or accomplishment in that line. The commandant of the cavalry school at that time was Brigadier General Ewing E. Booth, U. S. Army, and the trophy was appropriately named "The Booth Bowl." The original Booth Bowl was retired in 1935 when all spaces on it were filled by the names of officers to whom it was awarded. In its place the 379th Field Artillery established the "Gordon Johnston Trophy," in memory of a gallant Cavalry officer who spent many years of his service on duty with the Cavalry School.

After careful consideration, it has been decided to award this trophy again this year. The citation accompanying the award for 1941 reads as follows:

CITATION

In keeping with a tradition established years ago, the Gordon Johnston Trophy (successor to the Booth Bowl) is awarded this year, 1941, to an outstanding officer of the cavalry. Many years of his service have been spent on duty at Fort Riley where he served first as a student, then as an instructor, and later as a director of instruction in the Cavalry School. He commanded the Second U. S. Cavalry, then known as the Cavalry School Regiment, and later directed the activities of the cavalry board. In the past year he has held the important position of assistant commandant of the Cavalry School.

Throughout his connections with the school, he has contributed generously of his talents, rare abilities and time to enhance the progress of the school, through its long period of service to the cavalry and its present reorganization and expansion to meet the increased and diverse demands made upon the cavalry to fulfill its new rôle as both a horse and a mechanized branch.

His activities have not been limited to his arduous school duties. He has found time for interest in and support of all mounted sports—horse shows, polo, race meetings and hunts.

For all these attainments, his gentle, kindly helpfulness to all with whom he has served—superiors and juniors, instructors and students, alike—and particularly for his splendid example of a life of useful devotion to his profession and his country, I take pleasure in awarding the Gordon Johnston Trophy to Colonel Dorsey R. Rodney, Cavalry.

The United States Cavalry Association salutes you, Colonel Rodney!

Colonel Rodney

Our Journal

Recent issues of The JOURNAL have cost an average of $1,500 per issue. Six issues per year, therefore, average $9,000. Deducting subscription circulars, cards, postage, billing, etc., the average $3.00 subscription nets us about $2.25. This, times 4,000 paid subscribers, equals $9,000. An overhead of office rent, clerical salary, supplies, etc., are offset largely by commissions from books sold by the association. It is obvious that without the benefit of paid advertising (prevented by Congressional action) we must operate on a very close margin.

Numerous letters indicate that our present type of material is desired, and the field has hardly been scratched. With the continuance of interested officers sending in articles of timely value for publication, our journal can "hold its own." Please coöperate!

Unit Notes?

In several recent issues of The CAVALRY JOURNAL there have appeared numerous items of considerable interest in our "Unit Training Activities." An informal poll indicates that many readers do not read the unit notes, and, therefore, valuable information is lost. For this reason, other service journals some years ago discontinued *unit notes* in favor of unit articles, which can be properly displayed and illustrated. It is suggested, therefore, that in future, when units have items of general interest, they be written up as articles rather than as notes. (Deadline, next issue, September *first.*)

"Press Forward"

In one critical period in the Army of Virginia, one of Stonewall Jackson's staff expressed the fear that the army would be compelled to fall back. The general, replied sharply, "Who said that? No, Sir, we shall not fall back; we shall attack them." And he did attack them, and defeated them completely at Chancellorsville in a day or two afterwards.

Jackson's only order after getting his men in position was his favorite battle-cry—"Press forward." This was his message to every general, and his answer to every inquiry. When he was mortally wounded after dark, his only message to General Lee was that "the enemy should be *pressed* in the morning."

The elements that contribute to the *morale* of soldiers in battle are almost innumerable, but confidence in their commander is one of the most important points in securing a high morale in troops. General Jackson had so won the confidence of his men that they could not be defeated when he was in command, and the enemy was so demoralized when before him that fugitives from the front line calling out, "Jackson is coming," spread a panic among the reserves without their even having been under fire.

Probably, one of Napoleon's wisest maxims is, "The worst plan to adopt in war is always that which is the most pusillanimous, or commonly called prudent, and that true wisdom consists in energetic resolution." The more one studies military history, the more he will become convinced that the first great quality of a general is a sound judgment; but that the next is an indomitable energy and an iron will, without which the best judgment in the world is worthless—and a *cavalry* general requires indefatigable energy most of all.

Cavalry should remember that the boldest and most dashing course is almost always the best. The effect of taking the initiative and winning the first success in a campaign usually will be felt all through a war.

Stonewall Jackson possessed this quality in a very high degree. His impetuosity, intelligently employed, enabled him to move his command, consisting mainly of infantry, at such speed that his corps received the nickname of the "foot" cavalry.

In the great spirit of Stonewall Jackson, may our cavalry battle-cry be: PRESS FORWARD!

100-Mile Trail Ride

The Green Mountain Horse Association will hold its sixth annual 100-Mile Trail Ride, August 28th, 29th and 30th, at Woodstock, Vermont. This ride is the oldest of the hundred-mile rides that are being staged at the present time.

Anyone desiring material on the "Conditioning of Horses for Endurance Rides," entry blanks, "conditions" for the Ride or other information regarding this event, may obtain them from the Green Mt. Horse Association, Service Building, Rutland, Vermont.

Maneuver Mail

One of the important Army "lines of communication"—that between home and camp—may be strained during the widespread Army maneuvers now getting under way unless mail for the men in the service is properly addressed.

Letters and packages which are now delayed in delivery due to improper addressing may be further retarded as the men leave their permanent stations to participate in the summer "war games."

Mail to Army personnel should carry the grade and full name, including the middle name, of the person addressed, and be clearly written. Army serial numbers, if known, should follow the name. The letter or number designation of the company or other similar organization of which the soldier is a member should be included in the address. Next should come the identification of the regiment or separate battalion, if any, to which the company belongs. Finally, the Army Post Office number and its location should be designated.

The Army Post Office of a division is designated as "APO" followed by the postal number allotted the division. Thus the *1st Cavalry Division APO is No. 201 and the 2d Cavalry Division is No. 202.* The four Armored divisions are APO's 251, 252, 253, 254, depending, of course, on the number of the division.

The name and address of the sender of the letter should be written in the upper left hand corner of the envelope.

Army Establishes Censorship of Mail for Atlantic Bases

The War Department announced in an effort to protect defense secrets in the leased Atlantic bases, the Army has established a censorship of mail that passes through Army post offices at the bases.

Under current methods of procedure mail for personnel stationed at one of the bases should include the Army post office number for their particular base, in addition to unit and other designations. This mail will be subject to censorship by Army authorities. Any letter addressed to an American base, which does not include the Army post office number, will be subject to British examination.

The following is a list of the Army post offices (APO) at the bases and their APO numbers:

Base	*APO No.*
Newfoundland	801
Bermuda	802
Trinidad	803
Jamaica	804
Saint Lucia	805
Antigua	806
British Guiana	807
Bahamas	808

CAVALRY STRENGTH (July 17, 1941)

OFFICERS

Regular Army (plus 2 Philippine Scout Officers)	925
National Guard (in Federal Service)	568
Reserve Officers (on active duty)	2,162
	3,655

ENLISTED MEN

Regular Army	26,415
National Guard	11,786
	38,201
TOTAL COMBINED CAVALRY STRENGTH ON ACTIVE DUTY	41,856

TOTAL COMBINED ARMY STRENGTH

Regular Army	510,700
National Guard	283,800
Reserve Officers	58,500
Selective Service Trainees	624,000
Total	1,477,000

(Additional, *Filipino Militia.*)

Horsemanship

A request was received recently for a copy of the first reference that appeared in The CAVALRY JOURNAL regarding the sensational order issued by President Theodore Roosevelt in 1907 wherein he prescribed a physical test for all field officers ". . . to make a daily march (mounted) of not less than thirty miles, for three days in succession."

This must have been a "touchy" subject, for no reference to it was made in The CAVALRY JOURNAL until October, 1908, and then only as a quotation from a British service magazine as follows:

"Horsemanship has received special attention lately in the American army, but it is questionable whether the test to which President Roosevelt subjected his officers produced any practical results in the end. So much publicity was given to the whole business, and so much general attention was drawn to it, that it evoked a good deal of ridicule and good-humored banter from the press, and it has not yet leaked out that the results of the tests led to any material improvements being made in the American methods of instruction in military equitation. Yet the Americans are not without their lessons of the value of effective cavalry in warfare, for it was the absence of Confederate cavalry and the presence of Union cavalry under Buford which made it possible for Reynolds' infantry to seize and occupy that magnificent defensive position which insured victory to the Union arms at Gettysburg, and it was such cavalry which, under Sheridan, culminated in the victory at Appomattox."—*United Service Gazette.*

The following is a true copy of the original order:

GENERAL ORDERS,
No. 240.

WAR DEPARTMENT
Washington, December 4, 1907.

The following is published to the Army for the information of all concerned:

The White House
Washington, December 2, 1907.

To the Secretary of War:

I desire due notice given to all officers concerned that hereafter suitable physical tests to determine their fitness for active operations will annually be made of all field officers of the Army, under such regulations as you may prescribe. A sufficient number of the practice marches of cavalry, occurring in the fall of each year, might be taken advantage of to test the ability of all field officers, except those of seacoast artillery, to make a daily march of not less than thirty miles, for three days in succession, under conditions suitable to the making of forced marches in active field operations. Tests suitable to the character of service required of them should also be prescribed for field officers of seacoast artillery.

Annual reports should also be required, under such conditions as will insure accuracy and thoroughness, upon every junior officer of the Army, setting forth whether physically qualified for active operations.

Except when excused by higher authority, all officers should accompany their commands on the monthly practice marches, and reports should be required, naming in every case any who are unable or fail to do so or fall out on the march.

Appropriate action should be taken in the cases of all officers found not qualified physically for active service.

It is just as much the duty of all officers of the Army to adopt such measures and pursue such habits as will maintain a physical condition fit for active service as to cultivate their minds in fitting themselves for the intellectual duties of their profession.

I should also like as much encouragement given to the cultivation of horsemanship in the Army as may be practicable under the law, and likewise to have as many facilities for riding horseback as possible afforded to infantry captains on Government horses, until they have been made mounted officers as in foreign armies.

THEODORE ROOSEVELT.

(1309790, A. G. O.)

By order of the Acting Secretary of War:
J. Franklin Bell,
Major General, Chief of Staff.

Official:
Henry P. McCain,
Adjutant General.

Old Sibley Stove Makes Way for Progress

The conical-shaped old Sibley tent stove, about which legends of '17 cling as thickly as pine wood soot, is to be replaced by a new type. (See accompanying photograph.)

The new stove, developed at the Jeffersonville Quartermaster Depot, is collapsible like a picnic drinking cup, and is composed of four detachable parts. Cylindrical in shape, it has a base diameter of 18 inches, a 4-inch chimney opening at the top, and weighs approximately 45 pounds.

Besides this improvement in design which facilitates storage and shipment, the new stove has a grate and can burn any hard fuel. The old Sibley was intended as a wood-burner as it had no grate and therefore could not burn hard fuel successfully, though many a soldier kept trying on cold winter nights. Because of the great demand for lumber in the national defense program, wood has become more expensive as a fuel than coal. Now coal can be substituted for wood without the accompanying smoky blackouts and other difficulties.

The parts of the new stove are completely interchangeable with the old Sibley, thus making it possible by the addition of the grate to burn hard fuels in the old type with which most of the present camps have been equipped.

Cavalrymen at *Border* stations will be glad to know that another advantage of the new stove is its flat top, upon which water can be heated for washing and shaving, and even a little impromptu cooking performed.

Editor's Mail

Editor, The Cavalry Journal:

Many times in recent issues of The Cavalry Journal, I have noticed editorial comments regarding activating the 15th, 16th, and 17th Cavalry Regiments. This could very simply be done.

The 56th Cavalry Brigade, NGUS, of Texas, consisting of the 112th and 124th Regiments, which were inducted into Federal Service November 18th, 1940, could furnish the cadres and quite possibly a large percentage of enlisted personnel.

Numerous non-commissioned officers and officers of this regiment have expressed a desire *to remain in the Army*, but would not do so if they had to suffer an appreciable loss of rank. I believe that the defense program of the United States will suffer by returning these men to civil life, when many trained and capable "key" non-commissioned officers would remain in the service if permitted to do so at their present rank and ratings.

At the same time, these existing, inactive units of the Regular Army cavalry could be activated without any difficulty whatsoever.

Numerous cadres for the many new organizations of the Regular Army have been taken from Regular Army units, without thought to the fact that the National Guard could do the same.

Respectfully Yours,
Signed: Richard L. Hoyt,
Master Sergeant, 124th Cavalry
Communication Chief.

* * *

Editor, The Cavalry Journal:

I notice that in your issue of May-June on Page No. 91 you speak of the 101st Cavalry entirely as consisting of what is known as Squadron C. In reality the 101st Cavalry consists of old Squadron C and old Squadron A which are known as the Brooklyn Units (located in Brooklyn, N. Y.) which is the former Squadron C and the Manhattan Units (located in Manhattan) which is the former Squadron A. Of the two organizations which compose the 101st Cavalry, Squadron A is the older one having been organized in 1890 and which was known in the old days as "Troop A."

In the World War, Squadron A was known as the 51st M.G. Battalion.

I trust that you will correct the impression which you gave.

Yours very truly,
Signed: G. A. Moszkowski.

* * *

Editor's Note:

Thanks for this additional information. The "National Guard Cavalry Regimental Histories," were obtained from the *Official National Guard Register*.

MANEUVER NOTES

By Brigadier General C. H. Gerhardt

Cavalry Participation in the Recent V and VIII Corps Exercises, Third Army, Texas and Louisiana, June, 1941

A. P. Hill Military Reservation, Va., 44th Division vs CT 60 a reinforced regimental combat team from the 9th Division. One of the reinforcing units was a reinforced squadron of the 3rd Cavalry consisting of three rifle troops and detachments from the headquarters troop, a machine gun troop and two 75-mm. guns, motor drawn, from Battery "C" of the 55th Field Artillery stationed at Fort Myer. This squadron marched to the maneuver area southeast of Fredericksburg in three days, went into bivouac and reported to CT 60 for the exercises. Squadron mission was to protect the right flank of CT 60, to assist in the initial attack, then to afford protection for the vital Port Royal bridge during the time its use was necessary and, finally, to cover the right flank during the withdrawal phase of the action. The mission and its accomplishment were both good. In the initial stages the squadron commander concentrated his force to crush opposition as it was met and moved north to threaten the 44th Division rear area.

Another attachment to CT 60 was the 9th Reconnaissance Troop. It's initial mission was to cover the advance of the combat team in two columns. At this time the main forces were separated by some fifteen miles. After contact the reconnaissance troop became involved in the main fight rather than working on missions to the flank and rear. One platoon, preceeded the movement of the encircling battalion via Port Royal and Fredericksburg and after this battalion reached the 44th Division rear area, attacked all supply establishments. During twenty hours of this critical day the platoon covered 276 miles.

113th Cavalry (H-M), Brownwood, Texas. VIII Corps vs an outlined enemy in FE No. 2. Initially the Corps was placed in bivouac with all troops on one line, the cavalry on the right flank and close in. Due to the limitations imposed by a reconnaissance line and the time of crossing this line, the cavalry found itself in a pocket. It met enemy forces very shortly after moving and immediately became involved in the main fight. Later it had reconnaissance missions to the flanks and rear, but due to its location on the main battle line and close to one flank its operations were badly handicapped. In this exercise the enemy had representing tanks and at the critique, General McNair stated that the primary mission of the cavalry should have been to find and follow these tanks.

106th Cavalry (H-M), Camp Beauregard, La. V Corps vs outlined enemy FE No. 1 and No. 2. In both exercises, one attack and one defense, the cavalry was placed administratively with the other corps troops at the rear and center of the corps. In both exercises, due to a limitation of reconnaissance line and time restrictions for crossing this line, the cavalry echelons and the infantry met the enemy troops at the same time and became involved in the main fight. Later, reconnaissance missions were hampered due to the location of the cavalry in the main battle area rather than being placed outside the operation of the main forces where full advantage might have been realized from strategic reconnaissance. In FE No. 1 two troops of the horse squadron reached Leesville and located the right flank of the enemy MLR, crossing streams and maneuvering over some heavily wooded country. In FE No. 2, again, two troops of the horse squadron were used to advantage to protect the corps right flank.

Conclusion

1. Cavalry echelons, both combat and reconnaissance, have highly valuable characteristics and should be intelligently used by all commanders. Cavalry commanders should advise higher staffs as to their capabilities and limitations for the mission in hand; however, final use of the cavalry is a command decision and the higher commander must weigh the results he desires against the losses his cavalry will necessarily suffer.

2. Mechanized reconnaissance echelons have high long-range value. Scout cars are best for extended road reconnaissance and when involved in the close contact of large forces are extremely vulnerable.

3. In all maneuvers and field exercises, higher commanders should place their reconnaissance elements well to the front of the main body initially. After contact these elements should be moved to the flanks or rear to accomplish best results.

4. When opposed by armored forces, one of the principle missions of the cavalry might well be to find the armored force, keep it under observation and counter-attack it in bivouac or when otherwise vulnerable. This mission should be coördinated with aerial observation.

5. Information obtained by the cavalry should be promptly returned to higher headquarters. Command posts of supported units should also get this information.

6. War Department training circulars, 1941, No. 18—"Employment of the Reconnaissance Troop Triangular Division," and No. 32—"Employment of the Corps Reconnaissance Regiment," should be studied by all higher commanders and staffs to insure sound employment of these extremely valuable agencies.

The Triangular Division Today

ARMAMENT

Pistols, automatic, cal. .45	7,199
Rifles, US, cal. .30 (M1 or M1903)	6,942
Rifles, automatic, cal. .30, Browning, M1918 A2	375
Guns, submachine, cal. .45	35
Guns, machine, light, cal. .30, M1919 A4	57
Guns, machine, Browning, cal. .30, M1917 (H)	122

TRIANGULAR DIVISION

OFFICERS	624
W. O. 's	6
E. M.	14,615

ARMAMENT

Guns, machine, Browning, cal. .50, M2, flex.	36
Guns, machine, Browning, cal. .50, M2 (HB)	77
Guns, 37-mm. AT	60
Mortars, 60-mm.	81
Mortars, 81-mm.	36
Guns, 75-mm.	8
Howitzers, 105-mm.	36
Howitzers, 155-mm.	12

DIVISION HQ.
- 2 - 74

HQ. & M.P. CO.
7 123

PISTOLS	183
RIFLES	47
M.C.	8
TRUCKS	11
TRAILERS	2

SIGNAL CO.
8 253

PISTOLS	261
M.C.	2
TRUCKS	61
TRAILERS	10

RECONN. TROOP ★
6 141

PISTOLS	147
RIFLES	32
S-M.G.	35
L.M.G.	3
H.M.G.	32
CAL..50 M.G.	17
M.C.	12
TRICYCLES	7
SCT. CARS	16
TRUCKS	6

ENGINEER BN.
18 616

PISTOLS	118
RIFLES	516
H.M.G	18
M.C.	14
TRUCKS	72
SPEC. VEH.	7
TRAILERS	23

MEDICAL BN.
38 482

CARS	1
M.C.	3
AMB.	36
TRUCKS	53
TRAILERS	11

Q.M. BN.
16 296

PISTOLS	262
RIFLES	50
CARS	5
M.C.	5
TRUCKS	86
TRAILERS	53

ATCHD. MEDICAL
43 380

M.C.	3
AMB.	4
TRUCKS	62

ATCHD. CHAPLAIN
11

INFANTRY RIFLE REGT.
110 - 1 - 3229

PISTOLS	1181
RIFLES	2099
AUTO. RIFLES	125
L.M.G. CAL..30	18
H.M.G. CAL..30	24
CAL..50 M.G. FLEX.	12
37-mm AT	12
60-mm MORTARS	27
81-mm MORTARS	12
CAR	1
M.C.	26
TRUCKS	185
TRAILERS	15

INFANTRY RIFLE REGT.
110 - 1 - 3229

PISTOLS	1181
RIFLES	2099
AUTO. RIFLES	125
L.M.G. CAL..30	18
H.M.G. CAL..30	24
CAL..50 M.G. FLEX.	12
37-mm AT	12
60-mm MORTARS	27
81-mm MORTARS	12
CAR	1
M.C.	26
TRUCKS	185
TRAILERS	15

INFANTRY RIFLE REGT.
110 - 1 - 3229

PISTOLS	1181
RIFLES	2099
AUTO. RIFLES	125
L.M.G. CAL..30	18
H.M.G. CAL..30	24
CAL..50 M.G. FLEX.	12
37-mm AT	12
60-mm MORTARS	27
81-mm MORTARS	12
CAR	1
M.C.	26
TRUCKS	185
TRAILERS	15

DIVISION ARTILLERY
(TRUCK DRAWN)
121 - 1 - 2563

PISTOLS	2685
CAL..50 M.G.	60
37mm AT	24
75mm GUN	8
105-mm HOW.	36
155-mm HOW.	12
CAR	1
M.C.	43
TRUCKS	417
TRAILERS	123

EACH REGT.

HQ. & BAND
- 1 - 28

PISTOLS	34

SERVICE CO.
9 143

PISTOLS	22
RIFLES	130
AUTO. RIFLES	12
M.C.	6
TRUCKS	43
TRAILERS	15

BATTALION
28 904

PISTOLS	313
RIFLES	601
AUTO. RIFLES	32
L.M.G. CAL..30	6
H.M.G. CAL..30	8
CAL..50 M.G. FLEX.	4
60-mm MORT.	9
81-mm MORT.	4
M.C.	4
TRUCKS	31

BATTALION
28 904

PISTOLS	313
RIFLES	601
AUTO. RIFLES	32
L.M.G. CAL..30	6
H.M.G. CAL..30	8
CAL..50 M.G. FLEX.	4
60-mm MORT.	9
81-mm MORT.	4
M.C.	4
TRUCKS	31

HQ. COMPANY
6 167

PISTOLS	94
RIFLES	79
AUTO. RIFLES	5
M.C.	4
CAR	1
TRUCKS	20

ANTITANK COMPANY
6 179

PISTOLS	92
RIFLES	87
AUTO. RIFLES	12
37-mm AT	12
M.C.	4
TRUCKS	29

BATTALION
28 904

PISTOLS	313
RIFLES	601
AUTO. RIFLES	32
L.M.G. CAL..30	6
H.M.G. CAL..30	8
CAL..50 M.G. FLEX.	4
60-mm MORT.	9
81-mm MORT.	4
M.C.	4
TRUCKS	31

HQ. & BAND
10 - 1 - 28

PISTOLS	39
TRUCKS	2

HQ. BATTERY
2 107

PISTOLS	109
CAL..50 M.G.	2
CAR	1
M.C.	2
TRUCKS	17
TRAILERS	4

105-mm HOW. BN.
26 558

PISTOLS	584
CAL..50 M.G.	14
37-mm AT	6
105-mm HOW.	12
M.C.	9
TRUCKS	95
TRAILERS	29

155-mm HOW. BN.
31 754

PISTOLS	785
CAL..50 M.G.	16
37-mm AT	6
75-mm GUN	8
155-mm HOW.	12
M.C.	14
TRUCKS	113
TRAILERS	32

105-mm HOW. BN.
26 558

PISTOLS	584
CAL..50 M.G.	14
37-mm AT	6
105-mm HOW.	12
M.C.	9
TRUCKS	95
TRAILERS	29

105-mm HOW. BN.
26 558

PISTOLS	584
CAL..50 M.G.	14
37-mm AT	6
105-mm HOW.	12
M.C.	9
TRUCKS	95
TRAILERS	29

VEHICLES

Ambulances, ½-ton, cross country	40
Cars, light, 5-pass. sedan	10
Cars, scout	16
Motorcycles, solo	25
Motorcycles, with sidecars	143
Tricycle, motor	7
Trucks	1,323
Special Vehicles	7
Trailers	267

ch of the nine Regular Army Triangular Di-
ns contains a Cavalry Reconnaissance Troop.

Infantry Rifle Regiment (Motorized)*

CARDED

OFFICERS	123
WARRANT OFFICERS	1
ENLISTED MEN	3617
CARS	1
PERSONNEL CARRIERS	201
MOTORCYCLES	51
TRICYCLES	24
TRUCKS	237
TRAILERS	15
PISTOLS	1196
RIFLES	2313
AUTO-RIFLES	86
LIGHT M.G.'S	18
HEAVY M.G.'S	24
CAL. .50 M.G'S	12
SUB-M.G.'S	60
37-mm A.T. GUNS	12
60-mm MORTARS	27
81-mm MORTARS	12

HQ. & BAND		
5	1	28
PIST.		34

HQ. CO.	
6	193
CARS	1
M.C.	4
TRUCKS	32
PIST.	109
RIFLES	90
A.R.'s	5

SERV. CO.	
9	190
M.C.	6
TRUCKS	76
TLRS.	15
PIST.	22
RIFL.	177
A.R.'s	15

BATTALION	
28	976
PERS CARR.	67
M.C.	12
TRICYCLES	8
TRUCKS	27
PISTOLS	313
RIFLES	653
L.M.G.'s	6
H.M.G.'s	8
CAL. .50 M.G.'s	4
S.M.G.'s	20
60-mm MORT.	9
81-mm MORT.	4
AUTO-RIFLES	18

BATTALION	
28	976
PERS. CARR.	67
M.C.	12
TRICYCLES	8
TRUCKS	27
PISTOLS	313
RIFLES	653
L.M.G.'s	6
H.M.G.'s	8
CAL. .50 M.G.'s	4
S.M.G.'s	20
60-mm MORT	9
81-mm MORT	4
AUTO-RIFLES	18

BATTALION	
28	976
PERS. CARR.	67
M.C.	12
TRICYCLES	8
TRUCKS	27
PISTOLS	313
RIFLES	653
L.M.G.'s	6
H.M.G.'s	8
CAL. 50 M.G.'s	4
S.M.G.'s	20
60-mm MORT.	9
81-mm MORT.	4
AUTO-RIFLES	18

A.T. CO.	
6	179
M.C.	4
TRUCKS	29
PIST.	92
RIFLES	87
A.R.'s	12
37-mm	12

ATCHD. MED.	
10	99
M.C.	1
TRUCKS	19

ATCHD. CHAP.
3

CO. HQ.	
2	33
CAR	1
TRK.	10
PIST.	4
RIFL.	31

INTEL. PLAT.	
	19
TRK.	1
RIFL.	19

COMM. PLAT.	
4	141
M.C.	4
TRK.	21
PIST.	105
RIFL.	40
A.R.'s	5

CO. HQ.	
3	35
M.C.	4
TRK.	5
PIST.	8
RIFL.	30

A.T. PLAT.	
1	48
TRK.	8
PIST.	28
RIFL.	19
A.R.'s	4
37-mm	4

A.T. PLAT.	
1	48
TRK.	8
PIST.	8
RIFL.	19
A.R.'s	4
37-mm	4

EACH BN.

HQ. & HQ. DET.	
4	53
PERS CARR.	3
M.C.	4
TRICYCLES	4
TRUCKS	2
PISTOLS	23
RIFLES	26
S.M.G.'s	8

RIFLE CO.	
6	239
PERS. CARR.	16
M.C.	2
TRICYCLES	1
TRUCKS	6
PISTOLS	46
RIFLES	190
A.R.'s	6
L.M.G.'s	2
S.M.G.'s	3
60-mm MORT.	3

RIFLE CO.	
6	239
PERS. CARR.	16
M.C.	2
TRICYCLES	1
TRUCKS	6
PISTOLS	46
RIFLES	190
A.R.'s	6
L.M.G's	2
S.M.G's	3
60-mm MORT.	3

RIFLE CO.	
6	239
PERS. CARR.	16
M.C.	2
TRICYCLES	1
TRUCKS	6
PISTOLS	46
RIFLES	190
A.R.'s	6
L.M.G's	2
S.M.G's	3
60-mm MORT.	3

HV. WEAPONS CO.	
6	206
PERS. CARR.	16
M.C.	2
TRICYCLES	1
TRUCKS	7
PISTOLS	152
RIFLES	57
H.M.G.'s	8
CAL. 50 M.G.'s	4
S.M.G.'s	3
81-mm MORT.	4

A.T. PLAT.	
1	48
TRK.	8
PIST.	28
RIFL.	19
A.R.'s	4
37-mm	4

CO. HQ.	
2	27
M.C.	2
TRK.	5
TLR.	1
PIST.	3
RIFL.	26

REGTL. HQ. PLAT.	
2	36
TRK.	2
PIST.	10
RIFL.	28

TRANSP. PLAT.	
5	127
M.C.	4
TRK.	69
TLR.	14
PIST.	9
RIFL.	123
A.R.'s	15

EACH CO.

CO. HQ.	
2	25
P.C.	1
M.C.	2
TRI.	1
TRKS.	2
PIST.	5
RIFL.	19
S.M.G.	3

WEAP. PLAT.	
1	40
P.C.	3
TRKS.	1
PIST.	29
RIFL	12
L.M.G.	2
60-mm	3

RIFLE PLAT.	
1	58
P.C.	4
TRKS.	1
PIST	4
RIFL	53
A.R.'s	2

RIFLE PLAT.	
1	58
P.C.	4
TRKS.	1
PIST.	4
RIFL.	53
A.R.'s	2

RIFLE PLAT.	
1	58
P.C.	4
TRKS.	1
PIST.	4
RIFL.	53
A.R.'s	2

CO. HQ.	
2	31
M.C.	2
TRI.	1
TRKS.	3
PIST.	5
RIFL.	25
S.M.G.	3

CAL. .30 M.G. PLAT.	
1	44
P.C.	4
TRK.	1
PIST.	37
RIFL.	8
H.M.G.'s	4

CAL. .30 M.G. PLAT.	
1	44
P.C.	4
TRK.	1
PIST.	37
RIFL.	8
H.M.G.'s	4

CAL. .50 M.G. PLAT.	
1	43
P.C.	4
TRK.	1
PIST	36
RIFL.	8
CAL. .50 M.G.	4

81-mm M. PLAT.	
1	44
P.C.	4
TRK.	1
PIST.	37
RIFL.	8
81-mm MORT.	4

*Courtesy, *The Infantry Journal.*

General Hawkins' Notes

MARCHING AND INITIATIVE
For Open Warfare

MOST uninformed persons are willing to agree that it takes a long time to build a navy, but they do not understand why it should take so long to build a good army. The Germans started twenty years ago to build the fine army they now have. Forbidden by the Versailles Treaty to have an army of more than one hundred thousand men, they established numerous societies of thousands of young men who practiced marching on all the highways and byways in Germany. They had no arms, other than walking sticks, but carried knapsacks laden with clothing, food and other articles to bring the weight of the load up to something appreciable. Those packs were not as heavy as the soldier on the march has to carry, but they were enough to build up the young man's strength. The men were taught the proper stride in marching (something never properly understood or practiced in our army) and how to rest at halts. Skill at marching became a game with them. The marches were never for excessive distances but were increased in length very gradually. The proper care and hardening of the feet were learned. The health, stamina and resistance to fatigue of these young men were improved immeasurably.

When Germany threw off the shackles of the Versailles Treaty and commenced boldly to build her army to its present proportions, these men were ready and conditioned for service. After they joined the army they continued this marching practice with heavier loads. There was no let-up in marching, although the men had to learn the use of arms, tactics for small units, and the other items of basic training for the soldier. Even though thousands of these men were assigned to mechanized units and motorized units, and to antiaircraft and antitank units, engineers, signal troops, etc., they were required to keep in condition for marching on foot.

Thus, we were able to hear of the extraordinary marches made during this war by the German Infantry, and the resistance to fatigue shown by her soldiers of all arms.

With us, the tale was different. As it became more and more apparent that many large units of infantry, as well as other arms, were going to be motorized, the practice of marching on foot, never popular in our service, was neglected. Everybody except the mounted soldier wanted to ride in a motor vehicle. There has been no enthusiasm in our infantry for hardening the soldiers to long marches on foot. Specious arguments were used to show that it was unnecessary. Every officer ought to know that all infantry divisions cannot be motorized, and that even motorized units must be able to detruck and proceed on foot across country for considerable distances to gain deployment and battle positions, to say nothing of the physical fitness that is necessary during the conduct of the battle, the crawling on the ground, the use of cover for advance, and other physical strains and hardships.

Calisthenics may be sufficient for school girls, but for soldiers there is no way other than marching to make them fit for military campaigns.

Our new army should be required to march by companies or battalions five miles per day four times a week commencing within ten days of the induction into service. Skill in marching should be taught in those short marches. After four months of this, the marches should be made ten miles per day twice a week, and this should be continued throughout the soldier's period of service. Occasionally, longer marches should be practiced. Maneuvers should supply those occasions, and there should and would then be no such disgraceful exhibitions of weakness and inability to resist fatigue as have sometimes appeared in our maneuvers.

I learned recently of a certain battalion, in which the men had had three months service, undertaking a march of ten miles. Almost every one had blistered feet. One-third of the men fell out and were unable to complete the march except in an ambulance. The commanding officer simply did not know his business. Five miles, or even less, per day of proper instruction for two and one-half months would have made a single ten mile march a very easy affair.

All troops of every army, whether foot troops or motorized, should have this training. Even in the cavalry it must not be forgotten that the troops in campaign must be able to march on foot, leading the horses, for many miles a day if they are to accomplish their tasks without wearing out both the horses and the men.

In marching, the foot should be carried forward and planted on the heel. The knee should not stiffen but be flexed forward so that the weight of the body is carried by rolling the foot from the heel to the toe. With the knee still bent forward the weight is now on the toe and the body is carried forward easily by the backward

thrust of the toe. The arms are swung freely. This is not at all like the stiff knee marching we sometimes see with troops on parade where, for sake of appearance in rigid lines, the body is held too erect instead of being inclined forward as it should be.

Much skill can be shown in conducting a march. The rate of march should be fixed according to the conditions. Some marching in unison should be alternated with marching at route step in the platoons. Marching across country in more or less deployed formations or small platoon columns should be practiced by battalions. If liable to attack by hostile aircraft, this marching in deployed small columns would be very useful.

Finally, the high condition of men thus trained would pay in any case.

Another matter of training is more complex. It is the tactical training of all troops to meet and fight the enemy in all sorts of mixed formations and confused situations which occur in open warfare. Unlike the war of positions which we experienced in the last war, and for which the French army seems to have been trained when it entered the present war, a war of swift movement in the open will require our troops to meet attacks coming not only from the front and flank but from all directions. No longer will there be sectors and zones of action kept inviolate with the enemy always in front. Division, brigade and regimental command posts will have to be kept very close to the unit reserves. Even corps and army command posts will have to be protected and kept very mobile.

With hostile mechanized and motorized troops running wild, in among our communications, and hostile infantry and artillery pressing us from the front and flank, we must have some mobile battalions and squadrons kept in rear of the front lines and trained to take the initiative into their own hands and attack the enemy without orders from superior commanders. Battalion commanders in any relative positions whatever must be given more freedom of action.

This applies to infantry, cavalry, artillery, engineers, antitank troops and antiaircraft troops, as well as mechanized or motorized troops.

We must not expect battles to be fought in perfect order. In fact, we must practice a certain disorder, or rather an apparent confusion in which we depend on our battalion and smaller unit commanders to keep their own commands in order. Small commands can bring order out of confusion, and battalion and company commanders can learn to coöperate with each other without orders from higher commanders. One battalion commander can go to the assistance of another. The higher commanders can learn to comprehend the situation and gradually gain control until the situation is cleared up. Plenty of battalions of antitank guns and the necessary training to develop initiative in battalion commanders might have made the campaign in France a very different affair.

Although we should attempt to keep control and order in all situations, we should be prepared to deal with confused situations, relying on the ability and initiative of our battalion or squadron commanders. If all battalions are in order, an army is in order, no matter how confused the relative positions of the battalions may be. But, although this is a good principle, control cannot be regained by higher commanders unless such situations are practiced until the higher commanders learn to remain undismayed and confident in the resource and initiative of the lower commanders.

A regimental commander should be able to gather up, so to speak, his battalions that are not heavily engaged and regain control. A brigade commander or division commander should be able to pick up some regiment, and from that locality ascertain by means of staff officers the whereabouts of other regiments, and thus regain control. *Bringing order out of confusion should be practiced by every division.*

Such a desirable state of affairs can never be gained if battalion or similar commanders are criticized or scolded for taking the initiative when they think it necessary. Even though they make mistakes they should know that the higher commander will understand. The judgment of the battalion and squadron commanders must be improved by training in these deliberately made situations. No such stupid stereotyped phrases such as, "It is better to do something than to do nothing," should be used. It may often be better for a battalion commander to hold his battalion in readiness than to go into action. Judgment must be used; and if a mistake, either of action or of inaction is made, it should not be severely criticized if it was an honest mistake in judgment.

In other words, higher commanders must school themselves to give great latitude to their subordinates and to keep their hands off unless their intervention is clearly necessary.

In every grade of rank, judgment and initiative are necessary, but it is the battalion or squadron commander to whom we should give our particular attention and our generous confidence. And it will not suffice to establish these principles merely in theory. They must be practiced in tactical exercises in every command.

Find out who are the good *battalion commanders* in every branch of the service, and there will be no difficulty in the future in selecting our *general officers.*

***"I cannot help plead to my countrymen, at every opportunity, to cherish all that is manly and noble in the military profession, because Peace is enervating and no man is wise enough to foretell when soldiers may be in demand again."*—SHERMAN.**

C.R.T.C. At End of First Cycle*

By Lieutenant Colonel Wayland B. Augur and Lieutenant William P. Jones, Jr., Cavalry

THE first training period at the Cavalry Replacement Training Center has been completed. Five thousand odd selective service trainees from all parts of the nation have been sent out to the regiments. The training cadre at the present writing is being reoriented and reorganized to absorb a partial change in personnel. Meanwhile the new increment is arriving—more of them this time for we have been filled to near capacity. Training will be in full swing again by the time this article appears in print.

Graduation Exercises

At the end of the first training period, "graduation" exercises were held for the men who had completed their thirteen weeks' training. The stage was set on the western part of Republican Flats, near Milford Gate, on the rim-rocks. Spectators were thick as ants. Trainees of the first increment moved into place on the "parade ground." The 4th Squadron, reinforced, formed mounted; the 5th Squadron was mounted on scout cars, motorcycles and trucks; and the remaining six squadrons were on foot.

The troops were reviewed by General Chamberlin, following which each squadron gave a demonstration of some phase of the military instruction which it had received. For example, one squadron presented a dismounted drill; another, a mounted drill; Troop B of the 8th Squadron, the men of which were destined for assignment to the 67th and 68th Quartermaster Pack Trains (colored), had a packing contest.

Other demonstrations included a combined action problem involving six squadrons dismounted, one squadron mounted and one squadron in motor vehicles—the cavalry being reinforced by Battery "B" of the 16th Field Artillery, commanded by Captain Carl Darnell. One of the highlights of the exercises was a demonstration of calisthenics by the 1st Squadron. This drill was conducted with outer shirts removed and each man in his white undershirt showed up to perfection, making the massed drill most effective. The motors squadrons put on scout car, truck and motorcycle drills and special driving demonstrations.

Medals and plaques for individuals and organizational prizes for a small arms competitions were presented winners during the exercises. As a grand finale, members of the 8th Squadron (colored) filed onto the field from adjacent cover, at the double, and spelled out the letters "C.R.T.C.," followed by "U.S.A." A parade of the colors, massed singing of "America, I Love You," by the entire Command and the playing of the National Anthem brought the affair to an end.

Obvious Results

Although it is not generally considered good form for soldiers to brag about their achievements, we, here at the Center, cannot resist a word or two about the appearance of our men as they showed off their accomplishments. The precision and snap of the dismounted troops in review and drill could be favorably compared with the work of the Cadets of West Point or V.M.I. The smoothness of the mounted work; the almost geometrically perfect lines and well executed turns made an observer wonder if the men he saw drilling with such near perfection were *really* thirteen-week-old recruits.

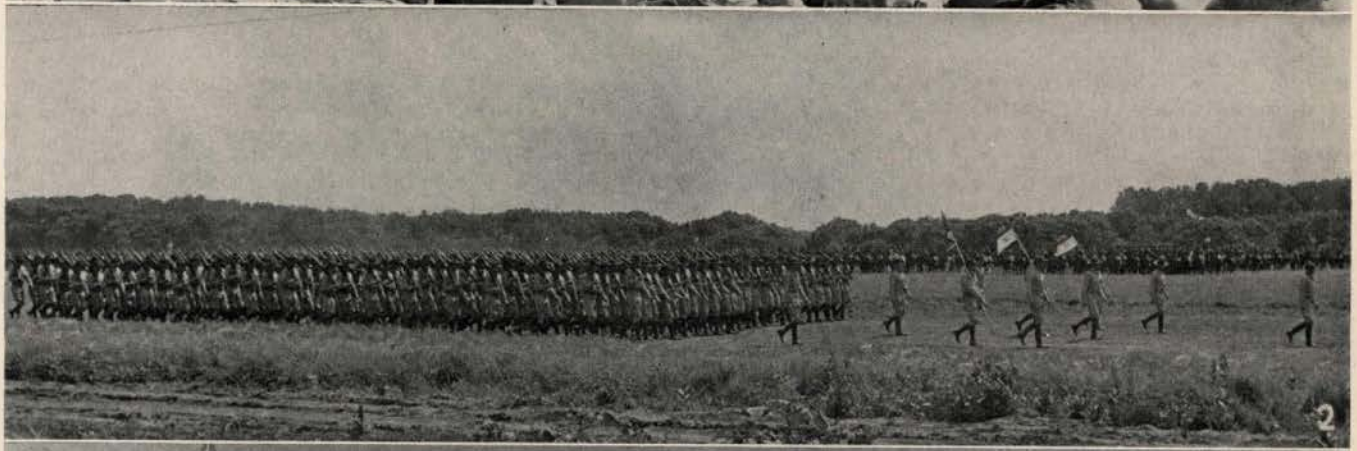
It was not only the C.R.T.C. personnel who were pleased. The rim-rocks were crowded with visitors; much of the military personnel of Fort Riley and Camp Funston saw the show. There were also officers from posts remote from here who had come for their quota of Replacement Center trained selectees. All were high in praise of what they saw.

General Chamberlin believes that the most significant and inspiring thing about the training of the first increment was the high morale and devotion to duty of the trainees. When men can come into the service, making the great sacrifices that so many of them did make, and jump into the swing and spirit of army life as quickly and as completely as did this group, one cannot help but have unbounded faith in the future of these United States! All did their work cheerfully. There was practically no complaining or lack of enthusiasm. And all this was accomplished in a raw, new camp which was only partially ready to receive selectees when they arrived. Obviously such conditions were only brought about by the enthusiasm and hard work of the officers and N.C.O's of the cadre.

When the training started, there were few recreational facilities, no Service Club, and a considerable shortage of many items of equipment and clothing. All that is changed now. The Service Club has been open for more than a month. A great quantity of athletic equipment is on hand.

For several weeks a serious dust situation existed. This was the result of removing all sod within the camp area to provide necessary grading and drainage. Not until near the close of the period was this dust situation solved by a liberal application of cavalry "atmosphere" in the form of bedding which had been used,

*All Division, Brigade and Regimental Commanders are requested to read the section on classification which is the *last section in this article.*



1—U.S.O. road show unit brings entertainment to Selective Service trainees. 2—First training squadron passes in review at "graduation" parade. There are approximately 900 men in this mass formation used for review only. 3—General Chamberlin addresses members of the second increment on Independence Day.

shaken out, dried, and spread throughout the camp over dust areas.

With all the creature discomforts that were prevalent during the first training period, the trainees took everything in their stride and the cadre was generally sorry when they were transferred to other posts. They had become fine soldiers. They had been taught that dust, rain, cold, heat, or good weather are all matters of a minor and inconsequential nature to good soldiers. Most "discomforts" exist only in an unoccupied mind and body.

Many interesting problems were presented in the assignment of replacements to their new units. No item is of greater concern to the commanders of the units which are to receive new men. *The method of classification and assignment is explained in the latter part of this article and should be carefully read by those who are expecting to receive trainees at the termination of the present cycle,* about October 1st.

Regular units getting Replacement Center trained selectees from the first increment are: 2d Div., Camp Funston; 2d Cav. Brig., Fort Bliss; 5th, 6th, 7th, 8th, 11th and 12th Regiments, Antitank Troop, Fort Bliss; 1st Reconnaissance Squadron, Fort Bliss; 2d Reconnaissance Squadron, Fort Sam Houston; 3d Armored Division, Camp Polk, and the 4th Armored Division, Pine Camp, N. Y.

Replacement Center selectees also have been sent to the following National Guard Regiments: 112th Cavalry at Fort Clark, 124th Cavalry at Fort Ringgold, 104th Cavalry at Indiantown Gap, Pa., 106th Cavalry at Camp Livingston, La.; 107th Cavalry, Camp Forrest, Tenn. Other organizations receiving replacements are the 524th M.P. Battalion at Camp Sibert, Nevada, and the 67th and 68th Quartermaster Pack Trains at Fort Jackson, S. C., and Fort Ord, California, respectively.

Organization and Training

There is in prospect an increase in the number of officers authorized at an early date to allow an extra second lieutenant to each training troop. This will make the number of officers per troop four instead of three. Through this addition, the training can be accomplished in a much more efficient manner and demands on the individual will be reduced to a more normal load. At present there is but one officer instructor to slightly over 100 trainees.

Approximately 220 members of the enlisted cadre were sent back to their regiments at the end of the first training period. Some proved unequal to their difficult tasks and some were returned as their services could be spared and they desired to rejoin their old units. They have been replaced by selectees of the first increment, who demonstrated capability for filling resultant vacancies in grades or specialists' ratings.

A proposed revision of Tables of Organization is being submitted by direction of the War Department, based on the experience gained and needs made apparent in the past months.

One important change contemplated is an additional echelon in the organization for training. A regimental unit consisting of a regimental commander and a small headquarters is necessary between the camp headquarters and each two authorized training squadrons. The present organization of dealing directly with eight squadrons has been found unwieldy. To correct this deficiency, and until approval of the War Department for a permanent change is obtained, the Chief of Cavalry is making additional regular army officers available. It is hoped that a total of four additional field officers will soon be available. Two, Lieutenant Colonel Thomas G. Hanson, Jr., and Lieutenant Colonel Guy D. Thompson already have reported for duty and have been designated Regimental Instructors. A moderate addition in enlisted strength has been found necessary in training troops, department detachments, and headquarters troop. It is expected that definite remedial action will be accomplished by the start of the fall cycle as a result of the proposed revision now being studied. Similar revisions are being accomplished in the replacement centers of the various branches of the service.

There will be no change in the prescribed basic training for the next increment. The master schedule as pertains to the basic subjects, has been found eminently satisfactory. Weapons training will be essentially the same and motors and horse changes will be discussed under their respective headings.

Fifteen dismounted obstacle courses are being constructed for use in connection with calisthenics. It is anticipated that this will help improve the men's agility and increase interest by adding zest to physical training.

Horsemanship Department

Perhaps the greatest single change in the organization for training has occurred in the Department of Horsemanship. This department was originally set up, based on the purely functional system in force at the Cavalry School. While this was found to be a satisfactory method it was impossible with the few instructors available in the Horsemanship Department to conduct efficient instruction for so large a unit as the C.R.T.C. Since an adequate supply of additional instructors is still not available, General Chamberlin has decided to combine the idea of departmentalized instruction insofar as the horsemanship instruction is concerned, with unit instruction. This serves the double purpose of lightening the load on the department instructors, providing an adequate number of instructors, and giving the troop officers increased experience and knowledge of horsemanship and horsemastership. It must be realized that to ride correctly and to care for and save the horse, is of paramount importance to a horse cavalryman. To pound the horse's back by using the old fashioned, obsolete, out of balance seat, is equivalent

to putting sand in the cavalryman's rifle or machine gun.

As a result of this decision a number of the horsemanship department officers and all of the enlisted instructors have been transferred to training squadrons. The officers who remain in the department will simply administer stables, coördinate training, compose schedules, and exercise general supervision over all mounted work. This method gives more instructors for both basic and horsemanship training.

There has been one marked change in the method of training in horsemanship. During the first cycle, the department operated on the "three men on a horse" plan, each animal being worked by three classes a day. This has been reduced now to two mounted periods daily per animal. The afternoon period is to be utilized for the care of animals and equipment; study of stable management, shoeing, packing saddles, dismounted instruction in many important related subjects; orientation for instructional personnel for the next day's mounted instruction; theoretical patrolling, mounted pistol instruction, etc. An additional allowance of animals and the authorization for construction of more stables has already been approved to meet the needs of the Horsemanship Department.

Two large riding pens have been constructed in the rear of the stables as training aids. Low obstacle jumping courses are being built to increase the security of the riders' seat, and their skill and confidence as horsemen.

A rest and remount stable has been established. Remounts originally unsuitable for recruit duty and those needing to be reclaimed as a result of initially poor riding by recruits are given further training. Other animals in poor flesh as a result of the hard work, are stabled separately for rest and special attention.

Motors

In common with the remainder of the C.R.T.C. personnel, Lieutenant Colonel Harold G. Holt, Chief of the Motors Department, feels that all things considered, the results achieved with the first increment have been generally satisfactory. There are certain things made evident by experience in the first cycle, that call for improvement. These are being cleared up as rapidly as possible and there is no question but what trainees completing the present cycle, will have received a better quality of instruction in motors than those of the first increment. For example, despite the great emphasis placed on maintenance, training in first echelon maintenance has been proven below par. We do not mean to state that the men sent out as vehicle drivers have been untrained in maintenance, but because of inexperienced instructors, green mechanics, and lack of equipment, they have not been trained entirely up to the standards which have been established for the C.R.T.C.

Now, however, the instructors have had three months' experience, the mechanics have learned a great deal in carrying out routine maintenance of the vehicles, and after much delay, a sufficient supply of tools is gradually being received.

The C.R.T.C. still does not have its full quota of motor vehicles. There are no motor tricycles, or their probable substitutes, bantams. The present authorized allowance of other types of vehicles is very inadequate and efforts are being made to increase the number in order to provide more hours of driving experience for each motor trainee.

For the summer increment, in addition to the more intensive training in maintenance, greater emphasis will be placed on the proper conduct of road marches and march discipline.

Seventy-two light tank drivers will be trained during the July-September period. They will be taught driving and first echelon maintenance just as is done with other vehicles. Specialist training in tanks and half-track vehicles will require six weeks and will be supplemented for these two groups of 36 men each, by a similar period of instruction with scout cars. Men receiving training in tank and motorcycle driving are hand picked for their adaptability and qualifications. Thus there will be four training "divisions" instead of the three in operation during the last increment. In addition to the scout car, truck and motorcycle sections, there has been added light tank instruction.

Weapons

The weapons department has kept a very complete record of all firing done by the first increment. While this is very interesting only broad generalities should be drawn until the data from at least two more increments are obtained. As was mentioned in the last issue of The Cavalry Journal, a marked increase in the percentage of the men qualified was obtained in each of the three successive weeks of M1 rifle firing. These men had all received identical preliminary training with the weapon, the only difference being that the men firing during the third period had had two weeks' more basic training than those firing the first period. However, the instructors had gained experience and the trainees were better disciplined and in better physical condition. These items undoubtedly had a great bearing on the results. All men fired on scheduled dates whether there was wind, rain, mud, or snow, and weather conditions also improved somewhat for each successive group.

Another generality noted is the fact that being left-handed seems to have little or no influence on a man's skill in firing the M1 rifle. Firing from either shoulder was optional. The most natural method was encouraged. A special record was kept on this matter during one week of firing. Out of 1,747 men, those who were shooting left-handed qualified 67.8%, while the right-handers qualified 70.7%.

While the M1 record for qualification for the whole

camp was 61.3%, some of the training platoons qualified as high as 98% of their men. Our platoons include 55 trainees, being approximately twice the size of a war strength cavalry platoon.

Combining functional and unit instruction, it is believed, will greatly improve records hereafter.

For the dismounted pistol record firing, the average for the first increment was only 59.3%. One training troop (221 men), with a qualification average of 79% shows a breakdown by platoons as follows:

1st platoon—100 % qualified.
2d platoon— 98.2% qualified.
3d platoon— 64 % qualified.
4th platoon— 52 % qualified.

On the range as elsewhere, *the quality of leadership inevitably displays itself.*

During the training with machine guns at 600 yards, firing at "B" targets, the average per cent hits out of the 25 rounds per man fired, was 45%.

The remainder of the weapons instruction included, in addition to a thorough course in mechanical training for all weapons, antitank and antiaircraft firing, a combat course on the 1,000-inch landscape target, machine gun firing on the field range at distances varying from 500 to 1,350 yards, a combat firing problem with the M1 rifle, instruction in the use of cover, and demonstrations with mortars and 37-mm. antitank guns. Trainees actually fired the light and heavy machine guns, the caliber .45 automatic mounted and dismounted and the M1 rifle.

Construction

The camp area has undergone considerable landscape beautification since the first buildings were occupied. Work has now begun on two chapels and two buildings that were authorized as officers' clubs, but which will be used as N.C.O. clubs, a branch of the Cavalry School Club having already been set up for officers in the camp area.

Construction of additional buildings and facilities at an estimated cost of $189,660, for the Cavalry Replacement Training Center also has been authorized. Included in the construction are 12 stables, 1 grain storage unit, 2 hay storage units, 4 blacksmith shops and stable guards' quarters, 9,600 feet of corral fence, and 2,400 feet of picket line.

Recreation

The Recreation and Morale Officer is assisted by a capable group of organizers who are, under his guidance, planning and supervising the recreational set-up for the new increment. The baseball team under the supervision of Lieutenant A. C. Hutcherson made an enviable record during the first training period. It has as its playing manager, Elmer Gideon, who as a civilian, was the property of the Washington Senators and who starred in four sports at the University of Michigan. Coörganizer of major sports with Gideon, is Benny Sheridan, former Notre Dame backfield ace. In the entertainment field are Alnardo Lombardo, well known in New York theatrical circles, and Jerry Calahan, a Fordham graduate who has also been prominent as an entertainer. These men, selectees of the first training increment, now have been taken into the training cadre. They are working on activities in their various fields that are calculated to do much to wholesomely occupy the leisure hours of members of the second increment.

An outdoor boxing platform has been constructed and bouts will be held weekly for the duration of the summer under the direction of Hayden Stuhlatz, better known as "Young Stuley." As a leading middleweight contender, Stuley fought eight world champions, defeating four outside title weights.

On June 3d, a Fort Riley boxing team, consisting of four men from the Replacement Center, and two from Camp Funston, went to Topeka for a match with Topeka and Kansas City fighters. This was part of a Military Day program at that city. Accompanying the team was a convoy of some 1,800 trainees from the Replacement Center who were engaged in a training march of 150 miles including both day and night driving. The affair was given with the assistance of leading Kansas State and Topeka City officials and included a military display of arms and equipment and a parade through the city. Incidentally, the Fort Riley boxers made a clean sweep, winning all the fights.

Classification

At the end of the first increment, final requisitions for replacements came in just two days before the first of the men were to be shipped out. In almost every case, the requisition as received, showed only the total number of men required, and gave no indication of the special qualifications, military or occupational, that were needed. With absolutely nothing concrete to go on, in most cases, the classification section and camp headquarters, made an effort to send out men as they thought they would be needed, trying to make a fair division of occupational specialists. A reasonable distribution of military specialists was made, based on tables of organization and the limited number of such specialists available. For example, replacements to horse units were selected from among those showing most progress or promise, as riders, and who had qualified with one or more weapons. Five per cent sent to horse units had received no training in riding but were selected for, and intended as, replacements for motorized elements of such units. Letters were sent with the replacements explaining the method of selection and it is hoped that final assignment of these men at their new unit was based on their classification and previous military training at this training center. Replacements sent to motorized units such as weapons troops, antitank troops, and to the armored force were selected from replacements trained in the motor squadrons at this camp. Not all individuals were given military qualification rating as to

horsemanship or as truck drivers, scout car drivers, motorcycle drivers merely because they had received such training. In the case of individuals receiving training in horse squadrons the trainee had to receive a rating of a least "fair" before entry was made on his classification card. Only about 35% of those receiving motor instruction were recommended as "truck drivers." This is not inconsistent with the needs of the service as only a portion of the soldiers in a motor outfit are required as drivers. There is no question as to the qualification of those who received specific ratings to function in such capacities. Individuals not given military specialists' qualifications, in most instances, will be able to drive or ride sufficiently well for basic assignment.

The Classification Section was not provided for in the initial table of organization and had to be developed from the unit at large after the start of camp. Very recently, its personnel has been doubled in size, making it possible for it, more properly, to take care of the problems confronting it. A recapitulation for each troop is being prepared, showing the total number of civilian occupational specialists, with a breakdown on general classification scores and educational qualifications.

In addition to the normal official channels of communication, it is the intention of the Classification Section to furnish the cavalry regiments, and other known receiving agencies, with information relative to specialists available as soon as these tabulations can be made. It would also be of advantage for the C.R.T.C. to have early information *direct from the regiments* concerning their specialists needs. The assignment of *loss* replacements to field units should be made on a basis of actual needs and this is possible only if that information is available. Of course it may be impossible to fill all requests. The C.R.T.C. has no specialist schools, so the specialists who can be sent to units depend on the occupational specializations found among members of each increment. From these, requisitions will be filled as completely as possible and if there are more requests for a specific specialty than can be filled, the men will be sent out proportionately.

The Commanding General, and all members of the C.R.T.C. instructional staff request that organizational commanders, who have received replacement center trained men, write in their comments, good or bad, on the quality of training that the men appear to have received. Our only purpose is to turn out soldiers who can satisfactorily take their places in the ranks of the regiments they join. Advice and comments from the organizations which these men join will be distinctly helpful.

As an example of the numerous occupational specialists, the following list is attached. It is an average distribution of the men received by each of the twenty-seven training troops. This particular troop is one of the horse troops. A motor troop would show about four times as many truck drivers, but otherwise would be similar.

TROOP B, 1ST TRAINING SQUADRON

RECAPITULATION OF OCCUPATIONAL SPECIALISTS AS RECEIVED FROM RECEPTION CENTERS

No.	Occupations	From Fort Devens, Mass.	From Camp Shelby, Miss.	From Camp Upton, New York	From Fort Meade, Maryland	Total
014	Auto. Mech., General			1		1
017	Baker				1	1
021	Bandsman	1			2	3
022	Barber				6	6
027	Blaster and Powderman				1	1
037	Butcher				1	1
049	Cargador			1		1
052	Chief Clerk			1		1
055	Clerk, General	1			4	5
056	Clerk, Postal or Mail				1	1
060	Cook	2		1	2	5
084	Fireman, Stationary	1				1
093	Horse Trainer	4			1	5
094	Horseshoer			1		1
124	Mess Sergeant				1	1
129	Molder				1	1
144	Painter, General				1	1
161	Pigeon Fancier			1		1
168	Printer, General				1	1
169	Printing Press Op.	2				2
170	Punch and Shear Op.				1	1
176	Radio Op., Amateur	1				1
186	Receiving and Shipping Cl.			2	2	4
200	Sewing Machine Op.				1	1
203	Shipping Packer				1	1
204	Shoe Repairer				5	5
210	Stable Sergeant				1	1
212	Statistician				1	1
214	Stone Mason	1				1
235	Teamster	6	1		4	11
245	Truck Driver	2			10	12
247	Typist				1	1
269	Cashier	1				1
283	Athletic Director				2	2
521	Basic	28	5	47	60	140
	TOTALS	50	6	55	112	223

RECAPITULATION OF ARMY GENERAL CLASSIFICATION TEST AS RECEIVED FROM RECEPTION CENTERS

Grades	I	II	III	IV	V	Totals
Fort Devens, Mass.	3	21	8	11	7	50
Camp Shelby, Miss.	0	1	3	2	0	6
Camp Upton, New York	11	19	18	6	1	55
Fort Meade, Maryland	11	23	44	26	8	112
TOTALS	25	64	73	45	16	223

RECAPITULATION OF EDUCATION AS RECEIVED FROM RECEPTION CENTERS

	Completed College	Completed High Sch.	Completed Grammar	Trade School	Some Grammar	Illiterate	Totals
Camp Shelby, Miss.	0	2	2	0	2	0	6
Camp Upton, New York	3	24	23	1	4	0	55
Fort Meade, Maryland	4	31	52	6	19	0	112
Fort Devens, Mass.	1	14	25	2	7	1	50
TOTALS	8	71	102	9	32	1	223

Cavalry Snow Trooping (H&M)

By Captain R. J. Quinn, Jr., 4th Cavalry

EDITOR'S NOTE: The recent landing of American troops in Iceland lends added interest to this subject.

* * *

A VAGUE rumor concerning the formation of a Snow Troop had been floating about Fort Meade, South Dakota. One of the Junior Officers had heard it via an orderly who had learned of it from a Stable Sergeant that it would consist of an outfit which would camp out all winter, apparently there would be no other duties but skiing and skating. Naturally, all the Junior Officers were secretly hoping for a whack at it, should the rumor prove true. On December tenth, yours truly received a cryptic message to report to the Commanding Officer at 11:45 AM. As I hurried down the walk, I had the usual qualms, and kept asking myself "Wonder what I've done now?—Or rather, what have I forgotten to do?" Concealing my trepidation as best I could, I reported to the Colonel and heaved a sigh of relief as he told me to sit down—that meant he wasn't angry anyway. After an interminable paper ruffling delay, he finally looked up with a typical, "Well, young man—!" and there it was. I stumbled out with a very voluminous file of papers, a mixed feeling of elation and confusion, and a vague worry as to whether frostbite hurt much or not.

ORGANIZATION

After some deliberation, a plan for testing was worked out and submitted for approval. The period of December 15th to January 15th was designated as a conditioning and preparatory period. On January 15th the real testing period began. The organization consisted of 112 men and 5 officers. It was designated officially as the Composite Troop, 4th Cavalry and was organized as follows:

Troop Headquarters ..... 1 Officer, 10 EM.
1 C-R car w/radio; 2 2½-ton trucks (Cargo and Kitchen),
1 2½-ton truck with snow plow.
Reconnaissance Platoon ... 1 Officer, 33 EM.
4 Scout cars, 2 with radio.
13 Motorcycles.
Rifle Platoon ..... 1 Officer, 27 EM.
28 Horses.
LMG Squad ..... 8 EM.
12 Horses, 2 LMG's.
Antitank Section ..... 15 EM.
2 Scout Cars, 1 w/radio, 2 37-mm. Guns.
Maintenance Section ..... 6 EM.
1 2½-ton wrecker, 1 ½-ton pickup, 1 C-R car.
Sled and Plow Section ... 6 EM.
Horse Plow and team.
Portée Section ..... Supply Officer, 7 EM.
5 Semi-trailers.
Medical Detachment ..... Medical Officer, 3 EM.

CONDUCT AND SCOPE OF TESTING

Conduct of tests, scope, and data are outlined and were carried on as shown in the following:

a. Platoon Leaders (1) Clothing (2) Sleeping Bags (3) Sleeping Conditions (4) Other Equipment	To be rotated among the men and checked weekly or by trip. Platoon Leader coördinates and keeps data.
b. Medical Officer (1) Kitchen and Crew (2) Foods and Menus (3) Stoves and Cooking (4) Medical Tests (5) Photographs	To test and report on. To experiment with foods, preparation, storage, etc. To conduct all tests of a Medical nature, and to take pictures for the report.
c. Supply Officer (1) Weapons and ammunition (2) Supply replenishment	To conduct tests and report on.
d. CO Reconnaissance Platoon (1) Engine Covers (2) Engine Heaters (3) Starting (4) Truck Plow (5) Care of Motors (6) Capabilities of Wheeled Vehicles	To conduct tests and report on.
e. CO Rifle Platoon (1) Horses & Horse drawn vehicles (2) Shoeing, Feeding, Shelter (3) Care of animals (4) Portée Trailers	To conduct tests and report on.
f. Troop Commander (1) Tentage (2) Tent Heaters (3) Caterpillar Units (4) Traction Devices (5) Snowshoes and skis (6) Tactics and Technique (7) Miscellaneous	To conduct tests and report on.

Preparation

From the above list, it can readily be seen that the troop had a very large job in front of it. On December 15th, the organization assembled for the first time. Since quarters were not available, the men stayed in their respective barracks when not actually with "Snow Troop," as it was called. The next month or two were trying ones for the rest of the Regiment; what with losing Cadres, and the simultaneous arrival of Selectees and remounts plus the loss of the men assigned to our group.

The first step taken in preparation was the sizing of the men for clothing and getting their medical histories. Cases of previous severe frostbite were rejected. Letters were written all over the country in search of information and catalogues. The Officers spent much care in ordering special clothing and equipment. This matter had to be greatly expedited due to the expected severe cold which usually arrives at any time after December first.

Conditioning was begun at once. Men and animals progressed by easy stages, marching successively longer distances, and staying out in the open for longer intervals. Organization was completed and platoon problems were held to enable the personnel to get acquainted with one another. The troop bivouacked on the Reservation one night each week. Improvised bed rolls and Issue Clothing were used. Personnel were given lectures and demonstrations on health, sanitation, first aid, and camping as affected by cold and snow. The practice bivouacs served to develop the Troop's camping technique as well as the resistance of personnel to cold.

A warning system was devised at this time. The campsites had been picked for water, etc., after consulting the weather bureau for the coldest and snowiest spots in the vicinity, based on the trends for the last ten years. CCC camps, Forest Rangers, and private citizens were enlisted as aides who were to call when conditions near their respective localities looked favorable. In addition, the local Radio Station at Rapid City, South Dakota, published a special bulletin for the Snow Troop daily. The warning system was designed to enable the Troop to get out quickly and meet any favorable conditions. Four campsites were picked on the open prairie where wind and maximum cold could be expected. Four other campsites were selected deep in the Black Hills where maximum snow could be expected.

Testing Period

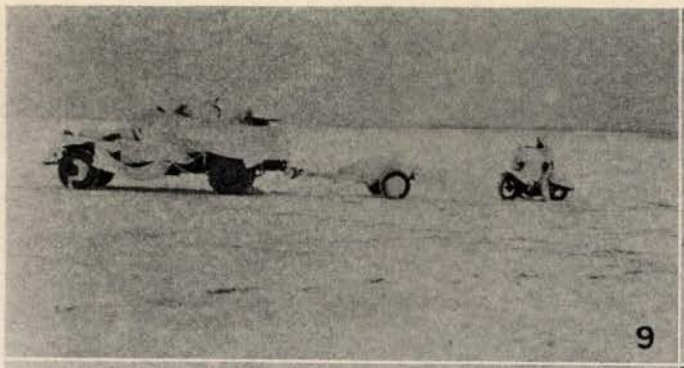
Special clothing and equipment began to arrive about January first, and trickled in throughout the test period as new needs developed. The Sleeping Bags arrived about January seventh. On the sixteenth the Broadcast sounded favorable, so the Troop marched to the Belle Fourche River and set up an overnight bivouac on the shelterless banks thereof in a 25 to 30 mile per hour gale. It was 18 degrees above zero and without snow. Some difficulty was encountered in rigging the canvas horse shelters because of the wind. Pyramidal tents were used by most of the troop, however all types of issue tents were tested. The troop had a night problem in Reconnaissance, and returned to the Post the next morning. The minimum temperature was only 13 degrees above, the Weather Man having disappointed us.

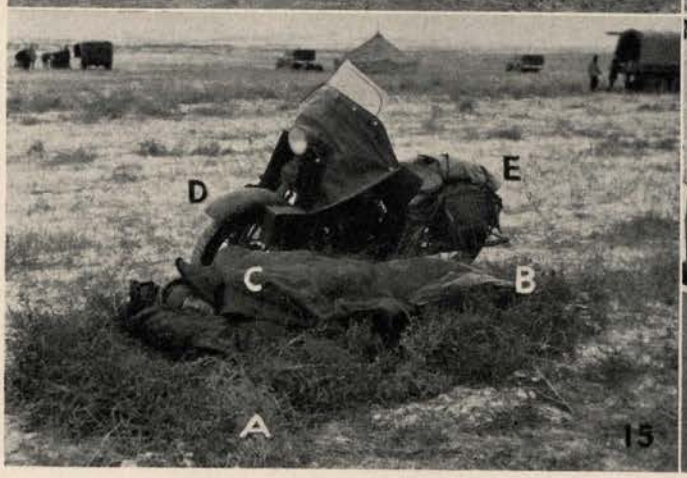
The next few days were spent on troop problems, seeking to develop tactics and technique suitable for the basis of a Training Circular required by the Directive. On the 23rd the Weather Forecast proved favorable, so the troop marched to Orman Dam near Belle Fourche, South Dakota. The temperature was 5 degrees above zero when the troop arrived to set up an unprotected and scattered camp on the shore of the lake. There was about one inch of snow. The surface of the lake was covered with an 18 inch layer of ice. This afforded our first opportunity to test watering through the ice. Several test holes were chopped and tried out. The final solution selected as the most efficient, was a square hole about 2 feet wide at the top and sloping inward and downward to a 6 inch hole at the bottom. The edges of the hole were hacked to provide a rough approach for a distance about 2 feet wide about the edges of the hole. The separate holes were chopped at some distance apart in order to spread the weight. Each hole accommodated about four horses. In spite of the thickness of the ice (18 inches), the weight of four horses gathered about one hole caused the water to bubble up through the small hole in the bottom and fill the basin to the brim.

The temperature dropped to 2 degrees below during the first night. Tests were run on tent heaters, engine heaters and sleeping bags. We were especially interested in a type dubbed the "Mummy Case." Several men slept in the open on a bed of Russian Thistle or "Tumble Weed." This item is ever present on the prairies during the winter and provides a good bed if the user is protected from the small, sharp spines. All of us were surprised to learn that a "Paloose" would raise the temperature of a tightly closed and banked double pup tent 25 degrees with two or more occupants. A "Paloose" consisted of nothing more than a No. 10 can with the lid cut off and laid on its side. Several holes were punched in the sides of the can and an issue wax candle placed upright therein. The following morning, engines were tested for starting. Later in the morning, camouflage tests were conducted in a light snow fall. It developed that a mottled effect about 80% white was best against the prairie's treeless background, which is occasionally broken by weeds, bushes, or bare steep slopes. The mottling should be done in large, irregular figures rather than in small patterns.

Uniforms, heaters, folding sleds, and many other items were tested throughout the day. The temperature hovered about zero, and at nightfall, the cooks discovered that our thermos boxes had allowed all the canned goods and potatoes to freeze. These boxes were

1—Patrol testing camouflage at Hanna, South Dakota. 2—Composite Troop putting on chains preparatory to entering unplowed roads in Spearfish Canyon. Old 4th Cavalrymen will recognize this terrain as Cheyenne Crossing. The temperature here was about zero, elevation 5,000 feet, snow 12 inches on the average. 3—Testing plows and sled trains at Hanna. 4—Scout car testing its snow negotiating ability. Our cars averaged about 15 miles per hour in snow up to 18 inches. Over that depth they are doubtful. 5—Dismounted patrol testing snow shoes at Rattlesnake Gulch, Wyoming. 6—A loaded G.M.C. semi-trailer stalled in 16 inches of soft snow in spite of the addition of traction bands. Note snow depth on author who is examining the bands and standing in the rut made. 7—Testing HMG firing at 10 degrees at Rattlesnake Gulch: elevation 6,000 feet. 8—Testing 37-mm. gun mounted on runners.





9—Testing camouflage at Orman Dam, South Dakota. 10—Truck testing half-track traction bands and successfully negotiating 30 inches of snow at 3 miles per hour. These bands caused the rear wheels to float on a 6-inch layer of hard snow, this snow consisted of a 20-inch layer of soft, new snow, on top of about 10 inches of old, hard snow. Note snow depth on author who is standing in ruts back of truck. 11—Mounted trooper demonstrating a cantle roll consisting of a "Mummy Case" sleeping bag, blanket, shelter half and usual pole, pins, and rope. He is also demonstrating our method of carrying snow shoes. He is wearing canvas trousers over his breeches (an essential item) and an airplane cloth parka. 12—Reveille at 10 degrees below zero. Note sleeping bag tent in foreground. Silkaline forestry tent in rear. 13—One section of the sectionalized squad tent demonstrating its adaptability as a one man "pup tent." Note aluminum telescoping pole, all around closure, and sod cloth for banking. 14—Demonstrating 5 section squad tent formed by joining 5 identical sections of the type shown in 13. This shelters a squad with stove easily. 15—Testing a sleeping bag at 5 degrees on a bed of "Tumble Weed," Orman Dam. 16—Demonstrating the interior arrangement of a squad horse shelter. Forage, saddles, and kerosene stove go on side away from horses.

17—Testing camouflage, Hanna, South Dakota. Note patrol in clearing above man's head in foreground. 18—Demonstrating watering through ice on a beaver dam at Hanna. 19—Testing evacuation of wounded on toboggans. This method proved to be very comfortable. Man on light rope in the rear acts as a brake and steadies load on side hills. This method proved to be a satisfactory way for the squad or patrol to carry its impediments when detached. 20—Maintenance as usual at 5 below zero. Note blow torch heating device in box below cycle. 21—Troop medical officer demonstrating his special medical chest. 22—Most practical type of uniform found for open vehicle personnel. Dismounted man is wearing a light cloth parka lined with Alpaca. His face is protected by a woolen face mask with goggles. He is wearing canvas trousers over breeches, felt boots, and rubber arctic overshoes, four buckles high. The mittens are not recommended. We found the gauntlet type to be better.

constructed of wood and consisted of an outer and inner box separated by a layer of sawdust and straw. We found that they would keep articles from freezing for about 12 hours without addition of heat.

The temperature dropped to 5 below zero in the evening with a 10 mile an hour wind. A night problem was conducted in which the Rifle Platoon provided security for the camp. The Reconnaissance Platoon established a separate camp across the lake and successfully penetrated the Outposts and Patrols about 1:30 A.M. It was observed during this problem that men had to be relieved at not more than 30 minute intervals in order to allow them to move about or go back to a hidden shelter with artificial heat. Especially at night, when the outposts must remain motionless and depend largely on their ears, the men chill rapidly. Also, weapons left exposed in sub-zero temperatures acquire a coating of rime which is definitely not helpful. Great care had to be exercised in care of weapons. If brought near heat for cleaning, they sweated from condensation for several minutes.

On the morning of the 25th camp was broken. The steel pins proved to be a great improvement over the wooden ones formerly used for the tentage. Normally, we broke 50% of the wooden ones in attempting to pull them from frozen ground. The march to the post was marred by one case of frostbite acquired by a man riding in a Semi-trailer in spite of our 10 minute halt every hour for warm-up of personnel. This man had contracted frostbitten feet as a youth and suffered a recurrence. The N.C.O. in charge of the squad removed the man's boots and placed his feet between two horses until the next halt where he could be turned over to the Medical Detachment. A checkup on colds proved that the Medical Officer's Sodium Bicarbonate tablets were beneficial. His test was conducted with a view to determine if an Alkaline system would prevent colds. At this time the men all agreed that it is the wind which

is the worst hindrance and discomfort in sub-zero operations.

On the 27th, the troop received word that there was 18 inches of snow in Rattlesnake Gulch, Wyoming, one of our campsites in the Black Hills. The troop arrived at the campsite about 3:00 P.M. after a slow trip over mountainous going and in considerable fresh snow. The last few miles were especially difficult. However, the Scout Cars smashed right through some 18 inches of powdery snow. Part of the trail was plowed by our plow truck before the Semi-trailers entered. It was dark by the time camp was pitched and all were ready for bed. The thermometer did not go below zero during the night. In the morning the troop broke camp and moved to a new campsite still in the Gulch but high up on the slopes of Cement Ridge. This camp was at an elevation of about 6,000 feet and partly sheltered by groves of Pine, Birch, and Aspen.

In spite of our altitude the temperature did not get below minus 2 degrees. Tests were conducted on the snow maneuverability of vehicles, snow plowing, camouflage, caterpillar units for plowing and cargo carrying, snowshoes, and horse marching in snow. It was noted that the mottled effect of camouflage mentioned previously, held good for forest work also. The troop stayed at this campsite for 2 days and experienced a "Chinook" thaw. This provided an excellent test for our uniforms. The canvas trousers proved to be a very good protection. The Medical Officer reported that the specially constructed box for his kit was a definite success. He prevented his liquid drugs from freezing by using all such items with an alcohol or glycerine base. He had experienced previous trouble with his hypodermic syringes and needles on an accident involving an injection wherein the contents had crystallized before he could make the injection, hence, had made up a sterile and insulated kit.

The troop returned to the Post without incident, and waited on the unusual weather for another cold snap to occur. During this period, the troop was inspected by General Allen and Major Hine from Fort Riley as well as a Board of Officers reporting on tests in the 2nd Army. The troop received several very valuable suggestions from the Board. Colonel Jos. L. Ready, Infantry Board was especially helpful with data and suggestions.

The weather man was very uncoöperative until February 19th. A series of tactical problems were conducted at this time to further our data for the Training Circulars required. On the 19th, the troop was notified of a 12 inch snowfall at Hanna, South Dakota, a campsite in the National Forest high up in the hills. The troop had no difficulty getting to this campsite and had an opportunity to test dehydrated foods for the first time. It was found that a great saving in bulk was accomplished. For instance, 7½ pounds of potato shreds carried in two small paper bags fed 90 men (the taste was excellent by the way). Eggs were allowed to freeze and were carried that way. Peeling and cooking the frozen eggs was as amusing as it was satisfactory. The troops stayed at this camp two days during which tests were conducted on sleds, sled trains, plows, tentage, etc. On the second day the Post S-2 visited the camp with the press representatives to take pictures of a demonstration which we staged especially for their benefit. The troop broke camp about 6:00 P.M. and conducted a night march over some 50 odd miles of mountainous roads and trails without unusual incident, arriving at the Post about 10:00 P.M.

The next and last opportunity for a test trip occurred on March 10, 1941; the interim having been utilized in testing various small items not requiring snow or cold. The tenth brought a snowstorm and the troop left in it for its previous campsite in Rattlesnake Gulch. The troop traveled rather slowly in this storm and arrived at the campsite about dusk after a rather difficult trip. 24 inches of snow was found at the entrance to the Gulch. Camp was pitched upon arrival with the thermometer at zero and in a fairly heavy fall of snow. The temperature did not go down appreciably during the night, but in the morning, we shook camp out of 3 inches of fresh snow. The camp looked very well camouflaged at this point, the tents and vehicles resembling snow mounds.

Camp was rearranged, a trench was dug for the chow line, and tests were begun on traction devices, 37-mm. gun runners, hasty base mounts for machine guns, and many other items which had long awaited a good snowfall. Snow fell all day and provided excellent testing conditions for all types of equipment. The horses apparently had no difficulty in the snow at any time. Their marching rate had to be cut down to about 4 or 5 miles per hour in snow over 14 inches deep (average). The Reconnaissance Platoon tested their snow plowing characteristics and clothing. They found that the Scout Car is an extremely cold vehicle. All of the personnel are exposed to the wind and snow which are very difficult to face without protection. When snow is falling, it stings like shot at speeds over 20 miles per hour. We found that a woolen face mask equipped with tinted goggles was indispensable for the face. For the body, we found a very good solution in a light weight Parka lined with Alpaca. At this camp we had many more types of dehydrated foods ranging from potatoes to applesauce. All were good.

The troop stayed at this camp for 3 days and experienced continuous snowfall until the last day. The temperature dropped to 10 degrees below on the first morning and to 15 degrees below on the second. Weapons were left outside at all times and were tested at various hours. Strangely enough, they all fired readily with ordinary application of the usual oil. We had anticipated great trouble but experienced very little. We did find that the Heavy Machine Gun operated better when wiped dry and given a coating of spindle oil. Crankcase oil was used successfully in the jackets. Silk tentage

was tested and found to be satisfactory. Sectionalized tents of the squad type were experimented with. The troop developed several different kinds. The Troop Commander designed one of a type which he believes will bear future thought toward adoption. This tent was composed of five like sections. The idea was to replace each trooper's shelter half with a section of the tent be he mounted or mechanized. The section in itself was designed to provide an individual shelter or pup tent complete with collapsible poles and pins. The sections were further capable of being joined together forming successively larger shelters, until the 5 sections were in place. The 5 sections made a squad tent which could accommodate a squad of 8 men and a stove. One of the sections had to be equipped with a stove pipe vent.

The troop left Rattlesnake Gulch on March 13th. The weather had cleared, and the road to Spearfish Canyon had been partially plowed, so no difficulty was encountered. The troop marched 60 miles to Owl Creek for an overnight bivouac. This campsite was 15 miles north of Belle Fourche on a very barren expanse of prairie. The melting snow had turned the gumbo rather slick in spots. This provided our drivers with a little slick ice and mud driving. The wind rose during the afternoon to gale proportions. Considerable difficulty was encountered with the Horse Shelters, but otherwise, the wind was not uncomfortable through our special clothing. The temperature did not go below zero this night, hence camp was broken at daylight, and the troop returned to the Post.

The minimum requirements having been fulfilled, the troop was disbanded on March 15th. Before turning in their special clothing and equipment, the men were given questionnaires to fill out. This formed a large part of the argument in the Board's discussions and recommendations.

Report

The easy part of the detail had been completed, and now the Board was confronted with the task of converting their experiences to paper. The field covered was a very wide one, hence the report was divided into sections and assigned to members to write. The Diary had been kept from day to day and provided the necessary details. Final recommendations as to clothing and equipment were decided upon by voting on the separate items. Opinion in most cases was unanimous. A pictorial record had been kept which further assisted in writing the report. This was included in the report to better illustrate the important points. Five very voluminous copies were submitted to the Commanding Officer and each one of the Officers concerned heaved a vast sigh of relief as they were finally placed in the mail.

The men and Officers detailed on this duty showed great interest and enthusiasm. It was new and interesting work, and gave free rein to everyone's ingenuity. Although the weather was the mildest in years, we did find snow and temperatures of sufficient severity to make our Test of value—we hope. The troop spent 16 nights and 21 days in the field. We had no cases of severe sickness, one case of frostbite, and one accident in which a motorcyclist slipped on the ice and dislocated a collar bone. *What is important, I think, is the fact that we found that the horse got there all of the time, sometimes vehicles did not.*

* * *

Additional Notes

By Lieutenant A. W. Bruneau, 4th Cavalry

The following are some extracts from the diary of a rifle platoon leader during the period of the 4th Cavalry Snow Test.

Watering Through Ice

In operations in deep snow and extreme cold it will often be impracticable to water horses other than through ice. On ice four to five inches thick, care must be taken in breaking through the ice and the amount of weight placed on it. On ice of this thickness holes about two feet in diameter should be widely separated so that the ice will not be weakened and the weight of the horses will not be concentrated in any one area. In cutting the hole, a basin should be chipped in the ice and then a small hole punched through. The pressure of the ice on the surface of the water will cause the water to gush up through the puncture, filling the basin to the level of the ice and making it easier for the horses to drink. It will improve the footing to chip the area around the hole in the ice. The horse has difficulty in reaching the water and has to bend and sometimes kneel in order to drink. Snow on the ice improves the footing if it adheres to the ice but if the snow is loose the footing is very poor. Unshod horses have considerable difficulty in watering on clear ice, while shod horses particularly those that have been shod with borium treated shoes have much less difficulty. At the first watering few horses will drink, but as thirst increases and the animals observe the others drinking and gain confidence, all will drink.

Horse Shelters

The shelters used were designed to protect the horses from drifting snow and the icy blasts common to the open country of South Dakota. The shelter was six and one-half feet high and one hundred and twenty feet long. This would hold a platoon of horses. There would also be space for saddle equipment and forage in the shelter. After some testing in which the horses were placed on both sides of the picket line, pitched inside the shelter, it was decided that it was a better plan to place the horses on the one side of the picket line so that the horses have their tails into the wind. The horses are crowded in this shelter but this helps to prevent dissipation of the animal body heat and it prevents the horses from lying down. After a hard day's

march if a horse lies down at night in the snow, the animal is very likely to be stiff the next morning. No heat of an artificial source was used in these tests. The temperature ranged as low as 15 degrees without any discomfort to the horses. Horse covers were used at night, during stormy weather, and to cool out overheated animals. Corn was fed at the rate of three pounds per day per animal. The shelter was improvised by sewing two latrine screens together to get the proper length and adding panels from a large wall fly in order to get the proper height. In the windy open country the pitching of the shelter in a thirty mile an hour wind is a considerable problem. A sheltered spot should be selected to pitch the shelter. When operating with portée trailers, the trailers can be used to form a windbreak for the camp and the shelter. A further type of shelter was improvised by tying the horses to the lee side of a portée trailer and erecting a canvas windbreak in rear of the animals.

Bits

The snaffle bit only was used because it was not to be worn to protect the hands. The bridling was simfeasible to use the curb bit because heavy mittens had plified. The bridles were kept in the tents which were heated by stoves so that when it came time to bridle it was not necessary to warm the bits before placing them in the horses' mouths.

Marching

Snow and extreme cold effects marching efficiency. Of the two, snow is the greater hindrance. Trot periods while marching in snow of eight to ten inches must be of short duration. A four-five, trot-walk schedule will keep horses from overheating. Under these conditions the horse has a heavy coat and sudden changes in temperatures must be carefully watched in marching. At a depth of 18 to 20 inches of snow, work is best done at the walk. Short periods of rest or lead should introduce at the half hour. Changing of lead horses frequently will help to relieve the strain of the fatiguing work of breaking trail. The type of snow has a considerable effect on marching. Loose, powdery snow makes poor footing. Old or set snow makes good footing. For continuous operation in deep snow horses are better left unshod. When marching at severe temperatures, feet should be removed from the stirrups at the walk so that circulation may be increased. Stirrups should be long. Falls are frequent in snow covered terrain where holes and ditches are hidden and the footing is often poor, hence the rider must be able to disengage his feet quickly.

Care and Cleaning of Arms

Extra care and vigilance is necessary in the care of arms. All arms become covered with condensed moisture when brought near heat or taken away from it. This appears as a coating of white rime in extreme temperatures. Up to fifteen degrees below zero a light coating of the issue oil will enable weapons to fire. In case sticking does occur, the oil can be lightened with kerosene on the moving parts. In temperatures lower than stated above the weapons must be wiped thoroughly dry and a thin coating of spirit and graphite or of spindle oil applied. Water in jackets of machine guns can be replaced with number ten crankcase oil. In this connection the packing must be watched closely and checked frequently. Automatic arms should be cleaned near a fire daily and allowed to cool slowly. Guns remaining outside should be covered.

An ill-disciplined army lacks mobility. Prompt and entire obedience is the mainspring of military success. Marching makes the greatest demands on the subordination of the men and the exertions of the officers. . . . Something more than enthusiasm is required to enable a mass of men to overcome the difficulties of bad weather and bad roads, or the sufferings of fatigue and hunger.—HENDERSON.

Horse Cavalry Regiment (Reinforced)

--Prepares to Meet a Mechanized Attack

*By Major Don E. Carleton, Cavalry**

NINE PM of 11th June found a Cavalry Regiment (Reinforced) at Horse Camp in the mouth of Grapevine Canyon, in the southwestern edge of the Sacremento Mountains. The regiment had just completed a hard week of maneuvers in the mountains and arrived at Horse Camp at dark after a march of twenty-four miles down through the precipitous, rocky course of Grapevine Canyon.

The regimental staff and squadron commanders are assembled in the commander's tent and the Colonel is speaking:

THE COLONEL: "Gentlemen, we know that at dark tonight, an enemy force consisting of at least one tank troop, two armored car or scout car troops and one bantam car troop moved into Alamogordo from the north. Our mission is to seize Orogrande (24 miles southwest) and to hold that town until the arrival of the Division at dark tomorrow.

"We have attached to the regiment, the weapons troop of the Brigade, a platoon of Engineers, scout car platoon of the Brigade Headquarters' Troop, and one battery of 105-mm. howitzers. Reconnaissance airplanes are on call at daylight.

"Our men and animals are very tired after a hard week in the mountains and must have rest. So, tonight, mounted patrols will be held to the minimum necessary for local protection. However, the scout car platoons of the Regiment and Brigade Headquarters Troop will be available for reconnaissance before and after daylight. We will march on Orogrande at 6 AM tomorrow.

"Lieutenant S-2, the essential elements of enemy information are: Where is the enemy as of 6 AM? Will he attempt to delay our movement or will he attack? Has he any supporting forces in the area? Please prepare your reconnaissance plan and be prepared to discuss it with me shortly.

"Major S-3, in crossing this open country between here and Orogrande, I believe we should move in line of squadrons; each squadron in the 'V' formation. This will shorten our flanks and facilitate any sudden change of direction. Will you please consult with Captains of Brigade Weapons Troop, and Artillery, and Lieutenant Engineers, and be prepared to present a march plan with their recommendations for the antitank protection of the regiment?

"Captain Supply, we will feed breakfast at 3 AM and the trains (less Combat trucks) will remain concealed here in this canyon until called for.

"Colonel Ex, will you please warn the outpost of the march time and inform the support, at the mouth of the canyon, that they will stand relieved when passed through by the advance guard?"

LATER—LIEUTENANT S-2: "Sir, I am ready with a reconnaissance plan:

"1. Send one section of scout cars at once in the direction of Alamogordo to gain contact with the enemy reported there and to keep us informed of any movement during the night.

"2. One section marching at 4 AM to reconnoiter the country east of the railroad, Culp Canyon, and the approaches to Orogrande from the South and East.

"3. One section, marching at 4 AM, to reconnoiter the country west of the railroad for a distance of three miles and the approaches to Orogrande from the west. In the event that the enemy should move to Orogrande tonight, this section will assist the first section in reporting all movements, paying particular attention to the tank troop and any reinforcements the enemy may receive.

"4. One section to precede the regiment, on the route of march, by four miles and to report any enemy encountered. This section to march at 5 AM.

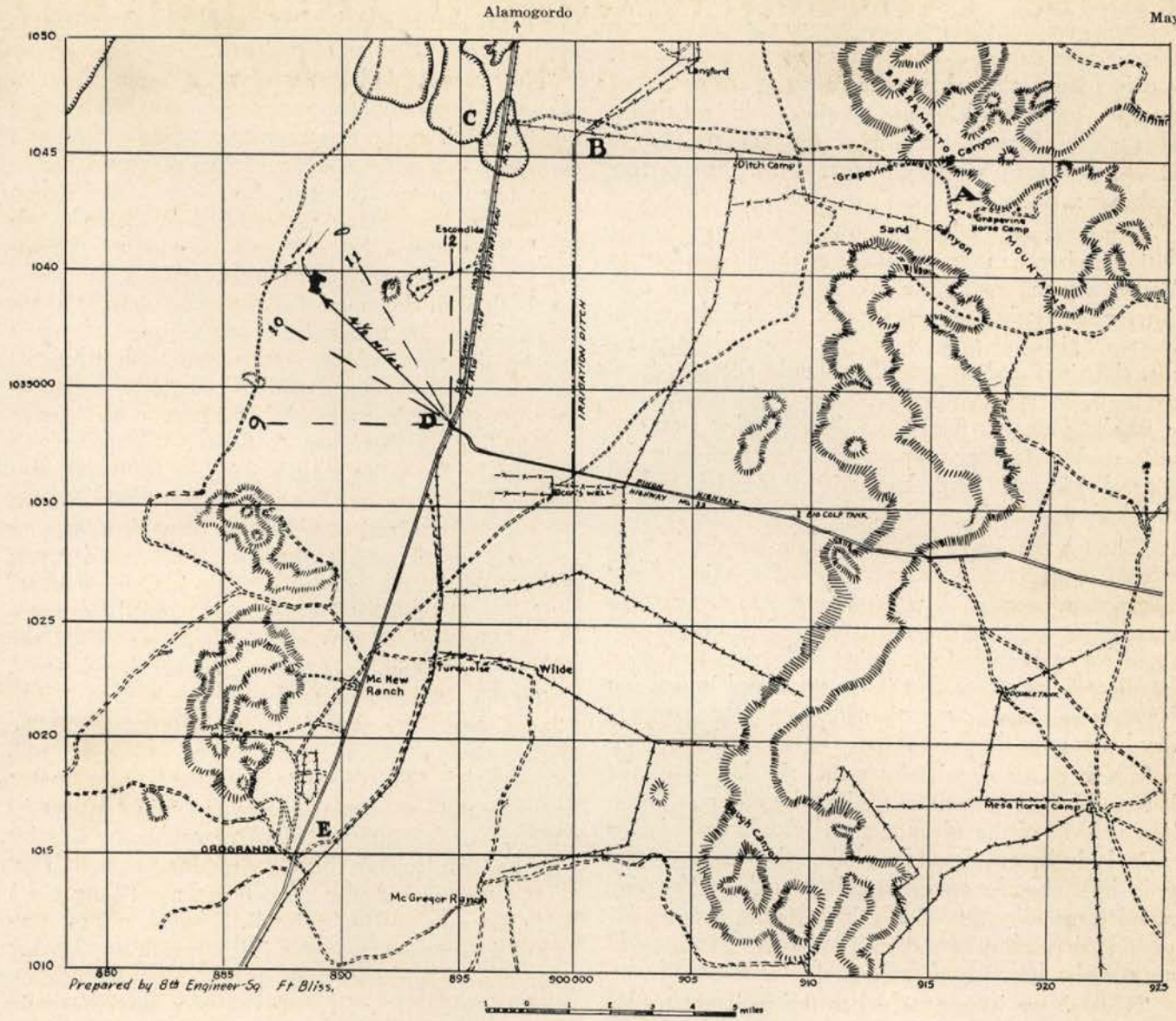
"5. To request air reconnaissance at dawn in the area of Orogrande, Highway 54, Alamogordo, a zone 20 miles wide. Principal air mission to report location and direction of movement of enemy tank troop."

COLONEL: "I think your plan is OK, Lieutenant, and you will have orders issued at once to carry it out. Be sure and warn all sections moving during darkness to proceed with caution and not be ambushed. The enemy is reported to have established road-blocks between here and Alamogordo on the main roads."

MAJOR S-3: "Colonel, before completing my plan, may I discuss it with you? The country between here and Orogrande, except for some low ridges and sand dunes, is open and flat. It will be very difficult for anything to surprise us during the march in the morning. However, there are two defiles through which we must pass, this one here about four miles out and the railroad about twelve miles to the West."

The COLONEL: "Don't be too sure about the enemy being unable to effect surprise. It is possible that he now knows our present location and has been able to guess our route of march for tomorrow. In which case, it may be possible for him to avoid our patrols tonight and to move to a position from which he could launch an attack against our flank or rear sometime during the march. Remember, we are confronted with a Mechanized force and they can, if they choose, hide in the sand dunes with vehicles well cam-

*Antitank Troop, 1st Cavalry Division, Fort Bliss, Texas.



ouflaged a mile or two off our flanks. For this reason, reconnaissance to the front and flanks must be intensified as soon as the march begins and as for these two defiles, reconnaissance must have reached the second before the regiment starts through the first, and must be at least two miles beyond, before the regiment starts to pass the second."

MAJOR S-3: "Yes, sir, I will incorporate that in the plan. Also, the artillery will be in position to fire well beyond each defile before the regiment starts through and the Engineers are prepared to place road-blocks North and South of the place where the regiment will enter Highway 54."

The COLONEL: "That is good."

MAJOR S-3: "Captain Antitank recommends that one 37-mm. antitank platoon march between the advance guard and the main body and one between the main body and the rear guard. The artillery to follow the main body closely, by bounds. Captain Antitank also requests permission to use voice radio for the control of the antitank elements during the march. He also desires to supplement our reconnaissance with some reconnaissance of his own to the front and flanks which will operate within his own net."

The COLONEL: "I see no objection to that. I particularly like the plan of keeping the antitank platoons together at the front and rear of the column where they can be quickly employed in great depth, once the enemy intentions are known. Captain Brigade Weapons Troop, will you explain for the benefit of all, the details of your plan for the antitank defense of the regiment tomorrow?"

CAPTAIN BRIGADE WEAPONS TROOP: "Gentlemen, the problem tomorrow is quite different from the one we had in the mountains. The absence of defiles, the impossibility of canalizing any mechanized effort, the fact that this mechanized force has mobility superior to ours on roads and the equal of ours across this open country, makes it necessary that we receive warning in sufficient time to enable us to go into action in the most favorable position to meet an attack. There is a tremendous fire power in this regiment at this time, but to be at all effective, it must have time to get into action in a position with a good field of fire. If

antitank guns and artillery have only a short field of fire there is great danger of some tanks getting through, and if only a few tanks overrun the guns and artillery, they may get into our led horses and effectively immobilize the regiment for some time. Here is a proposed plan to make it as difficult as possible for the enemy to interfere with our mission.

"Our scout cars and the reconnaissance cars from the antitank platoons must cover the country from four to five miles to the front and flanks throughout the march. They must work in close coöperation with the reconnaissance airplanes to get contact quickly with anything that the air may discover. This should allow us from twelve to fifteen minutes' warning. Mounted patrols must also cover the flanks to a distance of at least one mile, as there is always danger that the enemy may lie concealed in some favorable position, for him, and be over-looked by our scout cars.

"Though not shown on the map, the terrain through which we march tomorrow consists of a series of low ridges running generally at right angles to our route of march. These ridges are from twelve hundred to two thousand yards apart. Occupation of the ridges will give excellent fields of fire, but if we are forced into action between the ridges, our antitank guns will be at a great disadvantage as the field of fire will be very limited.

"These ridges should determine the length of the bounds of the regiment as well as the advance guard. The support of the advance guard should precede the main body by one bound and the advance party precede the support by one bound. This will give the commander considerable latitude in selecting a defensive position depending on how far away the enemy tanks are and the direction of their attack when located.

"Though we have attached to the regiment twelve 37-mm. antitank guns and one Battery of 105 howitzers, we still do not have sufficient antitank guns to be able to set up a dependable, all around defense for a unit as large as this regiment. For this reason we have placed one platoon of 37-mm. antitank guns between the advance guard and the main body and one platoon between the artillery and the rear guard. The artillery to follow the main body by bounds, prepared for action at all times. This keeps our antitank defense guns well in hand so that their fire can be thrown in any direction and the guns quickly placed in the necessary depth as soon as the enemy attack has been located. The idea here, is that the greatest speed in deployment and occupation of position can be obtained if all our antitank defense guns must move *forward* to their positions. They simply fan out by section and move straight to their selected positions. If they were distributed throughout the column there would be a loss of control; if they were all held together near the center of the column, some guns would have to move to the rear and some forward; if they were all at the rear of the column, the guns that go to the forward positions would have so far to go that the section leaders would not have time to make the best selection of positions.

"Now about this business of radio communication. We have all found that radio communication using regular C.W. in the clear, not to mention coding and decoding, was much too slow to be of any value in these fast moving situations. So we use voice, when possible, and use what we call the 'clock code system.' This system has the advantage of not requiring a map, it is easily and quickly learned, yet could not be broken down by the enemy in time to be of value. There are many points on our route of march and on the route of the reconnaissance detachments that can be easily remembered and would be noticed as they are passed in route. We pick some of these at random and number them A, B, etc. We try to keep them under five miles apart as it is easy for the average person to fairly accurately estimate up to that distance. For tomorrow this bivouac will be point A; this point on our route of march where we cross the drainage ditch is B, and the railroad crossing is C; here where Highway 33 joins Highway 54 is D and the town of Orogrande is E. Points are similarly placed on the routes of the scout car reconnaissance detachments. Using the clock system, twelve o'clock is True North. Simply then the system is this: a reference point, a clock direction and an estimated or scaled distance. (See sketch.) On voice radio using the S.O.I. alphabet names, a reconnaissance detachment might report its position like this, 'Station 2 *Jig Tear* to Affirm Negative 9 my position Dog ten thirty dash four and a half. That is all!' That would place that detachment four and a half miles northwest of point B. Though not as accurate as the coördinate system, it is so much simpler that there is less chance for wide errors."

The COLONEL: "Thank you very much, Captain Weapons Troop, and now gentlemen one thing more; let me remind you again that our mission tomorrow is to reach Orogrande and hold that place until relieved. We are not going to seek out and attack this mechanized enemy as such an action would interfere with our mission. However, if the enemy decides to attack us we will seize the most favorable position available and defend until he has committed his tank troop. Caution all your men that they will not fire on the tanks, but will leave them to the 37-mm. antitank guns and the artillery. As soon as they go into position to meet the attack they will dig in and conceal themselves. The tank attack will no doubt be followed by the enemy in bantam cars and scout cars; then our .30 and .50 caliber machine guns will open on these cars and stop them, whereupon all our front line troops should counterattack. If the junior officers and noncommissioned officers clearly understand this plan, gentlemen, and properly time the counterattack, the enemy will be unable to prevent our accomplishing our mission tomorrow. Led horses must be brought well to the rear under the protection of the antitank guns and the artillery."

91st Reconnaissance Squadron*

By Captain R. W. Porter, Jr., Cavalry

THE 91st Reconnaissance Squadron is a new outfit. It was activated as the 1st Reconnaissance Squadron at Fort Bliss by cadres from A Troop, 1st Reconnaissance Squadron, and from the Horse Regiments of the 1st Cavalry Division. Training of selectees was completed the last week in March. Then on May 14th the Squadron was redesignated the 91st Reconnaissance Squadron.

The Squadron consists of a Squadron Headquarters Detachment, of two Scout Car Reconnaissance Troops (A and B); of a Bantam Troop (C Troop); and an Armored Troop (Light Tank) (D Troop). The strength of the Squadron is six hundred sixty-four enlisted men and thirty-six officers.

Training

The initial shakedown cruise for the Squadron was planned for June 9th to 12th, 1941. Plans initially called for ground reconnaissance of routes, bivouac sites, watering points in the Sacramento Mountains and for air-ground liaison exercises with 120th Observation Squadron. Since the 8th Cavalry was also planning a ten-day trip to the same area, General Swift combined the training of the two units. Some interesting exercises resulted. It is the purpose of this article to tell of these exercises from the viewpoint of the Reconnaissance Squadron. (See map, page 59.)

The squadron moved to Alamogordo, New Mexico, under orders from the Division Commander late in the afternoon of June 9th. It was known a hostile Horse Cavalry Regiment had entered the Sacramento Mountains, and at dark, was still marching west near Mayhill. At midnight, friendly air reconnaissance found the regimen bivouacked near Weed.

About this time orders were received to contact, harass and delay this regiment pending the arrival of the 1st Cavalry Division at Orogrande during the afternoon of June 12th.

Reconnaissance Instructions were formulated, orders were issued assigning reconnaissance zones and the reconnaissance elements left Alamogordo at 4:00 AM.

Contact was gained with the 8th Cavalry in rugged, mountainous country and the location of the hostile force was constantly known to the Squadron Commander. This contact was made in spite of hostile road blocks placed by the 1st Cavalry Division AT Troop, 2d Brigade Weapons Troop and AT guns of the 82d FA, AT Platoon, which were attached to 8th Cavalry for this exercise.

There was excellent air-ground liaison on this day. Friendly airplanes had a decided superiority in the air and the 120th Observation Squadron not only kept the hostile column under surveillance during the entire morning but kept our patrols located. This helped a great deal in the evaluation of information.

The exercise was particularly interesting for the reconnaissance patrols. They were working in heavily wooded, well watered, mountainous terrain, and had to act most cautiously to prevent surprise and ambush. There were numerous road blocks to be reduced and blown bridges to be repaired. Many small actions developed in which cars were lost by both sides and several 37-mm. AT guns were captured. Radio Communication was particularly good for mountainous country on this day. Reports were received regularly from all but one reconnaissance detachment. This detachment was quite close to the Squadron at all times but their radio signals were blanketed by a high intervening mountain.

The Squadron bivouacked for the night at Cloudcroft. The hostile force went into bivouac at the junction of Scott Abel Creek and the Sacramento River Canyon.

Patrols kept the hostile force under observation during the following day, when they moved down the Sacramento River six miles, and then dropped off into the Tularosa Basin by the Grapevine Canyon Trail. This trail is tortuous and drops forty-five hundred feet in about three miles. Because of the rugged mountain terrain it was impossible to do more than keep the hostile force under observation. Mechanized patrols were definitely at a disadvantage with the more mobile horse patrols.

The hostile Cavalry at dark was in bivouac at the mouth of Grapevine Canyon.

At three PM on this afternoon, June 11th, the mission of the Squadron was again given in orders from the Division. Orders were received to harass and delay the hostile force, preventing their reaching Orogrande before 1:00 PM. At this time the Squadron, less A and D Troops, was at the old bivouac of the hostile force in the Sacramento River Valley. D Troop was at Mescalero, while A Troop was still at Cloudcroft, covering the main East-West road through the Sacramento Mountains.

Orders were issued for A and D Troops to go into concealed bivouacs at Alamogordo until further orders, to keep the roads through Alamogordo under surveillance, and to be prepared for movement to the South on an hour's notice. The Squadron less two troops moved down the Sacramento River Valley to the Pinon Highway. This move was over rough terrain and was made possible by the work of the 8th Engineer Platoon attached to the Advance Guard. They did ex-

*1st Cavalry Division, Fort Bliss, Texas.

cellent work and made many washed out sections of the road passable. This movement down the Sacramento was particularly trying for the motorcycle riders. The road was in the stream for distances as great as one-half mile at a time. The water was of varying depth and approached eighteen inches in places; the bottom was rocky and slippery. This made motorcycle riding hazardous and very tiring.

At five-thirty PM the troops reached the mesa country below the Sacramento Mountains and moved West toward Orogrande.

As dusk closed in the air observer reported the hostile Cavalry still in bivouac at the mouth of Grapevine Canyon.

Orders were issued for the Squadron to assemble at Orogrande. The movement there without lights was uneventful. The elements rejoining from Alamogordo located the enemy motor bivouac near the Orogrande-Alamogordo Highway but this bivouac was so well protected by antitank guns that it was not feasible to attack them.

At daylight, June 12th, movements of the hostile force were reported by air and ground reconnaissance agencies. The hostile Cavalry force was subjected to a damaging air attack while breaking camp and again while moving through the narrow mouth of Grapevine Canyon by aviation attached to the Reconnaissance Squadron. This delayed their march initially.

Later in the morning reports from the air indicated that the hostile force was making particularly slow progress. Knowing that mechanized elements were near, the movements of the 8th Cavalry were carefully planned and coördinated so that antitank weapons were always in position to cover the advance of the regiment. As a result, although they had marched at 6:30 AM, the hostile regiment was but twelve miles from their Grapevine Canyon bivouac at 11:00 AM.

Hostile air activity increased during the morning until at 10:00 AM, friendly aviation was driven from the air. The Squadron then acted upon reports received from ground elements only. This left the Squadron with much more obscure reports of the hostile movements and dispositions than were received when friendly aviation was keeping the hostile force under observation.

Finally at ten-thirty AM orders were received to attack the hostile regiment at once. This attack was to furnish a diversion while the Cavalry Division moved into Orogrande. Reconnaissance Patrols not in contact were assembled and an attack was launched on the hostile position shortly after eleven o'clock by C and D Troops. The attack was supported by the machine guns of A and B Troops. When this attack went home the problem was stopped.

COMMENTS

While intended primarily to make elements of the Division constantly aware of the danger of mechanized attack, the exercise on this day gave the 91st Reconnaissance Squadron its first real experience in combating antitank guns and in using tanks to assault a hostile position. Although results were not conclusive the troops gained much experience with road blocks and their reduction. They learned to cover the advance of the heavy elements of the Command with the fire of riflemen and machine gunners. Communications and air-ground liaison were well tested and the squadron had its first experience in attacking a Horse Cavalry force. It was found that 37-mm. AT guns were hard to locate in the "bondocks" of this area and that Horse Cavalry, properly led, makes a poor target for a mechanized attack. Horse Cavalry is capable of dispersing so quickly in this terrain that there is great danger of a tank attack being launched in the air.

Thought was given to the supply problem throughout the exercise. The Division Quartermaster established an advanced distributing point at Alamogordo. Supplies, both Class I and III, reached the distributing point and were transferred to Squadron vehicles under the cover of darkness. Then the scout car escort for the trains, returned the truck train safely to the Squadron bivouac in the mountains.

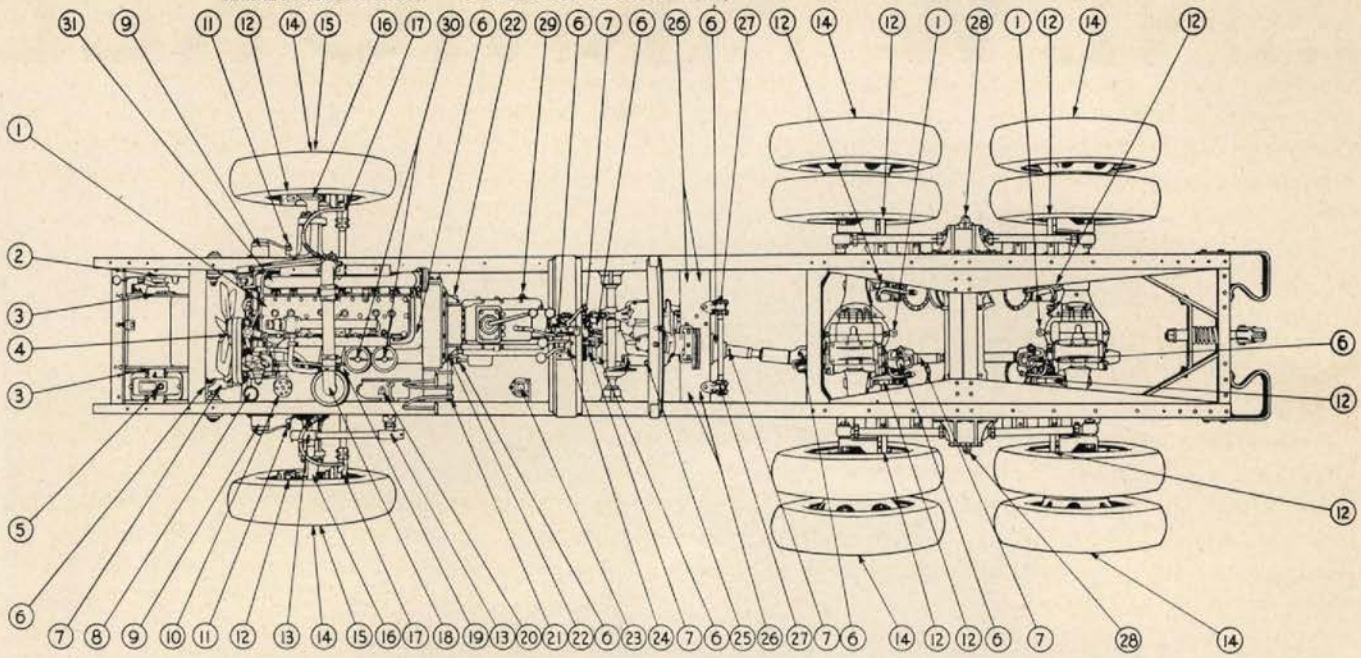
Maintenance was stressed constantly and there were few vehicle casualties. Drivers were carefully watched and many men who had never driven in the mountains won their spurs before the problem ended.

The 8th Cavalry had their first brush with a mechanized force. Although the force was small it harassed and delayed the 8th Cavalry. This exercise has stimulated discussion and thought as to the best way to meet a combined mechanized and air attack and has furthered the training of the 1st Cavalry Division.

The Cavalry Journal will carry full coverage of the 1941 Cavalry Maneuvers. It is requested that qualified staff officers be designated by unit commanders to prepare this material and that maps and photographs *suitable for publication* be included with contributions.

Lubrication Chart for a 6x6 Truck Showing Trend in Automotive Lubrication

SERIAL Nos. 9670001-9670998 U. S. ARMY Nos. W417678 to W418653; W001310 to W001331 CONTRACT No. W-398-QM-8270



GENERAL LUBRICATION SCHEDULE

Ref. No.	Description	Type Fitting	No. of Fittings	Capacity	Lubricant	Grade Summer	Grade Winter	Mileage	Remarks
1.	Axles (Differential)	Plug	3	Ft. axle 12 pts. Re. axles 6 pts. ea.	Gear Oil	S.A.E. 140	S.A.E. 90	5000 to 10,000	Check oil level every 1000 miles and add as required.
2.	Winch Clutch	Zerk	1		Fibre Grease	No. 2	No. 1	1000	
3.	Winch Drum Spindle	Zerk	3	3 oz.	Fibre Grease	No. 2	No. 1	1000	
4.	Fan Hub	Zerk	1	5 oz.	Fibre Grease	No. 2	No. 2	1000	
5.	Winch Gear Case	Plug	1	3½ Pts.	Gear Oil	S.A.E. 140	S.A.E. 90	5000	Check every 2000 miles and add as required.
6.	Universal Joints	Zerk	10		Gear Oil	S.A.E. 140	S.A.E. 90	2500	
7.	Slip Joints	Zerk	5		Gear Oil	S.A.E. 140	S.A.E. 90	2500	
8.	Engine Crankcase	Filler Cap	1	16 qts.	Engine Oil	S.A.E. 30	S.A.E. 20	500	Check daily and keep between 2/4 and 4/4 on gauge.
9.	Shock Absorber Body	Plug	2		Houdaille Fluid #1404				Check each month. Fill to level. Do not use substitute fluid.
10.	Tachometer Adapter	Cup	1	½ oz.	Fibre Grease	No. 2	No. 1	1000	
10.	Distributor Shaft	Oiler	1	2 drops	Engine Oil	S.A.E. 30	S.A.E. 20	1000	
10.	Breaker Cam				Petrolatum			5000	Wipe only a small quantity of grease on cam.
11.	Shock Absorber Link	Zerk	4	4 oz.	Fibre Grease	No. 2	No. 1	1000	
12.	Brake Camshafts	Zerk	12	¾ lbs.	Water Pump Grease	Waterproof Lubricant		1000	
13.	Drag Link	Zerk	2	2 oz.	Fibre Grease	No. 2	No. 1	1000	
14.	Wheel Bearings (Front & rear)			3 lbs.	Hard Fibre Grease	No. 3	No. 3	5000	Inspect every 2500 miles.
15.	Front Axle Univ. Joint	Plug	2	2 lbs.	Fibre Grease	No. 2	No. 1	500	Do not fail to inspect and lubricate this joint.
16.	King Pin	Zerk	2	2 oz.	Fibre Grease	No. 2	No. 1	1000	
17.	Tie Rod	Zerk	2	2 oz.	Fibre Grease	No. 2	No. 1	1000	
18.	Air Cleaner			3 Pints	Engine Oil	S.A.E. 30	S.A.E. 20	500	Change oil with each crankcase change.
19.	Water Pump	Cup	2	1 oz.	Water Pump Grease	Waterproof Lubricant		100	Turn down grease cups slightly from time to time.
20.	Steering Gear Housing	Plug	1	5 lbs.	Gear Oil	S.A.E. 250	S.A.E. 140	5000	Under extreme conditions lubricate oftener. Do not use grease.
21.	Pedal Support	Zerk	1	½ oz.	Fibre Grease	No. 2	No. 1	1000	
22.	Clutch Release Shaft	Zerk	2	1 oz.	Fibre Grease	No. 2	No. 1	1000	
23.	Brake Valve	Zerk	1	½ oz.	Fibre Grease	No. 2	No. 1	1000	
24.	Operating Levers	Zerk	5	2 oz.	Fibre Grease	No. 2	No. 1	1000	
25.	Transfer Case	Plug	1	5 pints	Gear Oil	S.A.E. 140	S.A.E. 90	5000	Check level every 1000 miles and add as needed.
26.	Hand Brake Shoe Pins	Zerk	4	2 oz.	Fibre Grease	No. 2	No. 1	1000	
27.	Hand Brake Cross Shaft	Zerk	2	1 oz.	Fibre Grease	No. 2	No. 1	1000	
28.	Rear Axle Rocker Beam	Plug	2	1 pt.	Engine Oil	S.A.E. 60	S.A.E. 20	500	Do not fail to lubricate.
29.	Transmission	Plug	1	24 pts.	Gear Oil	S.A.E. 140	S.A.E. 90	5000	Check level every 1000 miles and add as required.
30.	Oil Filters							5000 to 10,000	Renew cartridge when oil becomes dirty.
31.	Generator	Oiler	2	5 drops	Engine Oil	S.A.E. 30	S.A.E. 20	5000	
	Accelerator Shaft	Oiler	2	2 drops	Engine Oil	S.A.E. 30	S.A.E. 20	1000	
	Throttle Rod	Oiler	2	2 drops	Engine Oil	S.A.E. 30	S.A.E. 20	1000	

TABLE I (P. & C. FORM) REVISED 4/11/40

Automotive Greases:	General Lubricants, Fibre Type				Waterproof Lubrican
Grade	No. 3 (Hard)	No. 2 (Medium)	No. 1 (Soft)	No. 0 (Semi-Fluid)	Water Pump
Penetration, A.S.T.M. (Unworked)	190–250	280–360	350–450	—	60–100
Soap Content, % Total	13–18	6–14	4–8	1.5–4	25–32
Type of Soap	Soda (1)	Soda (1)	Soda (1)	Soda (1)	Calcium
Moisture, % (Max.)	1	1	1	1	2
Melting Point, °F., A.S.T.M. (Min.)	315				200
Corrosion, A.S.T.M.	Nil	Nil	Nil	Nil	Nil
Free Fatty Acid or Alkali, % Max.	0.4	0.4	0.4	0.4	0.4
Mineral Oil Viscosity at 100 °F, S.U.S. (Min.) Viscosity at 210 °F, S.U.S. (Min.)	120	120	120	120	100–300
Foreign Matter, % Max.		0.1	0.1	0.1	0.1

(1) Sodium or Sodium and Aluminum.

Chart furnished by courtesy of *The Army Motors*, Holabird QM Depot, Baltimore, Maryland.

...NEW ARMORED

THE NEW LIGHT TANK, M-3.

Primarily a combat vehicle, used by light tank regiments, light GHQ tank battalions, and reconnaissance companies. Has low trailer idler which puts more track surface on the ground, affording greater traction and a steadier gun platform. Mufflers are on inside instead of out where they formerly threw a light at night. Thicker armor around the engine, and front armor plate around transmission is cast instead of rolled. Weight increased from 12 to 14 tons. "Bustle" in back. No increase of horsepower or gear ratio. Same armament. Welded turret. Pioneer tools now carried over engine compartment instead of on side, decreasing necessary clearance.

FORCE VEHICLES

THE NEW CAR, HALF TRACK, M-2.

Used mainly as a prime mover for 105-mm. howitzers by the Field Artillery regiments (armored) and Field Artillery battalions. Is also an excellent cross-country personnel carrier. Part of the vehicular equipment of reconnaissance companies, light and medium armored regiments, Infantry regiments, and Engineer battalions. Auxiliary uses are for command car, light maintenance, and as wire layer. Maximum payload 3,600 lbs.; towed load 4,500 lbs.; maximum safe speed 45 m.p.h. Equipped with one caliber .50 and two caliber .30 machine guns, machine gun rail, radio, ammunition chest for 30 rounds of 105-mm. ammunition, front wheel drive, nose ditch roller, self-sealing gasoline tank, rubber tired bogie wheels, volute spring suspension, electric brake system, and tactical driving lights. Seats ten men including driver. Has higher ground clearance than previous model, same continuous band rubber track.

REMOUNTS
For a Mountain Division

*By Colonel Edwin N. Hardy**

IN view of the possibility of activating one or more Mountain Divisions, The CAVALRY JOURNAL has requested a discussion of the plan of the United States Army Remount Service for procuring, training and issuing animals meeting the particular requirements of such Divisions. There is set forth herein a brief discussion with reference to the matter.

In a recent issue of The CAVALRY JOURNAL there appeared an article by a German officer which indicated that the German Remount Service provided for supplying its Mountain Divisions with animals which were actually born and reared in the mountains, the idea being that such animals would prove to be of better service than those selected from indiscriminate localities. Undoubtedly such a plan has its advantages, but it is not considered necessary any more than for airplane pilots to be selected from men who were born and reared in the sky.

It seems to be a fact that both men and animals, irrespective of their environment, can be counted upon, if normal, for efficient service in mountainous areas. Of course, as we reach the higher elevations where the supply of oxygen decreases, the heart and lungs have to adjust themselves to the changed conditions. The normal animal body, however, is so regulated that this adjustment offers no serious obstacle, especially if a sufficient training period is arranged for prior to any major effort. Experience in mountainous country is advantageous for both man and beast if they are to be used in such terrain, not only for physical reasons but in order to permit them to adjust themselves in other ways. Usually people and animals who have never been in the mountains feel confused, uneasy, and even frightened during their first experiences with them. The main thing to be considered, both for man and beast, is to arrange for a gradual training period so that they may become accustomed to the physical effort and psychological adjustment required at high elevations and in rugged, mountainous country.

We all know of people, and probably animals, who have been born and reared in the lowlands and who have been able to operate with a high degree of efficiency in mountainous regions of high elevation. The reverse of this, I believe, is also true. Therefore, while it is admitted that there is an advantage in obtaining animals for a Mountain Division which were born and

*Chief of Remount Division, Office of the Quartermaster General.

reared in mountainous country, no great obstacle would have to be overcome if they were procured from other regions. In saying this it should not be understood that we advise attempting the extremes by selecting horses raised in the everglades of Florida for operations in the Rocky Mountains, but we do believe that horses purchased in Tennessee, Missouri, Texas, California, or other normal localities can be successfully trained and developed for use in mountainous country of high elevation.

An organization of a Mountain Division might include the following:

1 Cavalry Rifle Troop. (Squadron or regiment)
3 Infantry Regiments. (Pk)
Division artillery (Hq and Hq Battery and 4 Battalions 75-mm. how. pack)
1 Engineer Battalion (Pk and Motor) (3 Pk Companies)
1 Signal Co (Pk)
1 Medical Battalion (Pk and Motor) (3 Collecting Co's (Pk) & 1 Vet Co)
1 QM Battalion (Hq Co, 2 Truck Co's & 4 Pk Co's)
1 Remount Squadron, capacity 1,600 animals (attached)

Such a Division at least, would require approximately 8,000 animals—7,000 mules and 1,000 horses. The mules required are principally pack mules, while the horses required are divided between pack horses and riding horses, with a greater number of the latter. The purpose of such a Mountain Division would be to provide for a force which is possessed of heavy and varied fire power and the particular mobility required to carry this fire power in terrain which cannot be negotiated by mechanized and motorized units. While we speak of it as a Mountain Division, it would be supposed to operate anywhere a man on foot can go—whether in marshy areas, on the plains, or in steep, rugged mountainous country of high elevations.

Since 7,000 of the approximately 8,000 animals of such a Mountain Division would be mules, the main consideration in supplying animals to such a Division must be given to mules. The majority of the mules in the United States are raised at elevations of less than 5,000 feet, the great mule-producing states being for the most part in regions of moderate elevation. However, there are being raised throughout the northwest, particularly in Wyoming, Colorado and Nebraska, an increasing number of mules at elevations of approximately 5,000 feet, or more. This section, therefore, would be favored in procuring mules for a Mountain Division, although it would not be particularly disturbing if a large number of the mules would have to be procured in states of lower elevation such as Missouri, Kansas, Tennessee and Georgia. The mule has proven himself a most adaptable creature able to withstand extreme changes of temperature and elevation, but like any other animal, must be carefully conditioned for extraordinary physical effort.

Rocky Mountain dude ranch. They had to leave their automobile behind

As to horses for a Mountain Division, it would be our plan to secure them from the northwest country in such states as Colorado, Wyoming, Montana, Idaho, etc. Many of the horses from these states are raised at elevations of approximately 5,000 feet, and most of them have acquired experience in negotiating rugged mountainous country of high elevation.

As to type, the mules should fulfill our present specifications for good pack mules. Any variation towards lightness and depth of girth should be avoided, but still we should not err on the heavy side to such an extent as to accept mules that are not active and clever-footed.

The horses for a Mountain Division, as a general rule, could be of a "chunkier" type than our normal conception of a good riding horse for Cavalry, but just the same he should be well-bred—at least ½ Thoroughbred. The horses; as well as mules, should have exceptionally good depth through the heart so as to insure plenty of heart and lung capacity. They should be particularly strong-backed, short-coupled, with strong massive hindquarters, and of course should have good, straight, strong, active feet and legs. As to gaits, the riding horse for a Mountain Division should not be too long-gaited. If a horse is inclined to be too long-gaited he probably will soon adjust himself after a few days' experience in the mountains to a shorter gait; if not he will not be suitable for mountain units. Above all, an animal to be used in the mountains should have an appropriate disposition. He must be generous, but at the same time he must be level-headed. If he is too impetuous in his work, he will not last long in the mountains. Much of the attitude of an animal toward mountain work would of course come from experience. Animals raised in the mountains would have this decided initial advantage over those raised in other localities. There is no more pitiful sight than to witness the efforts of a Thoroughbred horse raised and raced in flat country trying to negotiate for the first time a rugged, mountainous trail.

The pack horse for a Mountain Division could very

1—Horse pack train in the Rocky Mountains. Note large number of animals controlled by one rider. 2—Mountain trout planting expedition. Each animal carried two planting "cans" which averaged about 1,500 small trout. 3—Coarse types of riding and pack horses used in some Rocky Mountain regions. Such horses are slow but keep well under mountain conditions and can work all day. 4—"Wrangler" John points out a scenic highlight to the trout-planting party. 5—Nothing but man or beast can attain this high spot. 6—Excellent type of pack mule with artillery load.

well be somewhat coarser, heavier and "chunkier" than the riding horse. Dude-ranching and other activities throughout our western country require the use of a large number of excellent pack horses. The breeding of such horses I estimate to be a combination of western pony (often with some Indian pony blood), some draft blood, and in late years, more and more, some Thoroughbred breeding. It is there that the Remount Service would endeavor to find pack and riding horses for a Mountain Division.

On account of the approximately 5,000-ft. elevation of our Robinson Quartermaster Depot (Remount), at Ft. Robinson, Nebraska, and the existence of rugged terrain of considerable elevation, animals destined for the use of a Mountain Division would be processed, conditioned and trained at that depot. It would be the plan of the Remount Service to give considerably more training to animals destined for a Mountain Division than is usually given to those for ordinary issue. We would work these animals on a gradually progressive scale up and down rugged steep trails so that by the time they were issued, they would calmly accept work on mountain trails and would be hardened and conditioned physically for such work.

Radio Equipment for Horse Cavalry

By Major John Hughes Stodter, Cavalry★

THE tempo of warfare has quickened. Motors and radio have made possible the Blitzkrieg. The effect of the gasoline motor in providing the fastest transportation ever seen for men and animals, weapons and supplies, is well known; but it is less well understood that the ability of leaders to direct and coördinate such swift moving elements depends largely upon communication.

Fortunately communication has more than kept pace with transportation, for, by means of radio, each leader should be able to keep in continuous touch with all principal elements of his command, whether moving or halted, near or far.

The high, cross-country mobility, fluidity and fire power of horse cavalry insure its place in modern warfare. But unless its means and agencies of communication are equal to or better than those of motorized elements, the performance of horse cavalry missions is handicapped from the start.

Unfortunately our present radio equipment falls short of that needed to fight a lightning war. In the first place there is not enough of it. Information of the war in Europe indicates that even the smallest patrols and combat groups are often equipped with highly portable short range voice radio sets providing instantaneous and continuous communication, while our own troops, platoons, and patrols of horse cavalry, whether mounted or dismounted, must still rely on the messenger. Although he may be considered more reliable in the long run, the run may be too long. Fifteen or twenty minutes spent by a messenger in getting the message from sender to addressee may mean the loss of the opportunity offered in the information or orders he carries. If his message is written, there is the delay time of writing; if oral, there is the probability of error in the messenger's delivery. The answer is radio.

Not only does horse cavalry need a small short range set for troops and smaller elements, but the pack and vehicular radio sets employed by squadrons and higher echelons should be redesigned for modern war. The pack set (SCR 203) as issued does not provide continuous communication on the march, as it is impracticable to transmit from it while moving, and at the trot, even reception is difficult. Other objections to this set are that it is hard on pack horses as it is top heavy and overweight; also, it requires too large a crew.

The vehicular sets used in our scout cars and command reconnaissance vehicles or regiments and higher echelons are better than the pack set and can provide continuous communication; however, they can be improved in many respects. They need more crystal controlled channels, as the difficulty of getting a net of three or more sets on frequency and keeping it there is very great. The sets should be lightened and simplified. At present they require highly trained specialists to put and keep the sets in operation due to the fact that they are very critical to tune and complicated to operate and service.

Certainly, the problem of modernizing our radio equipment has long been studied; suitable types have been recommended by The Cavalry Board and are being designed by the Signal Corps. But until this new equipment can be approved and gotten into production, horse cavalry must make the utmost use of every type of radio equipment available in training for modern war.

Walkie Talkie

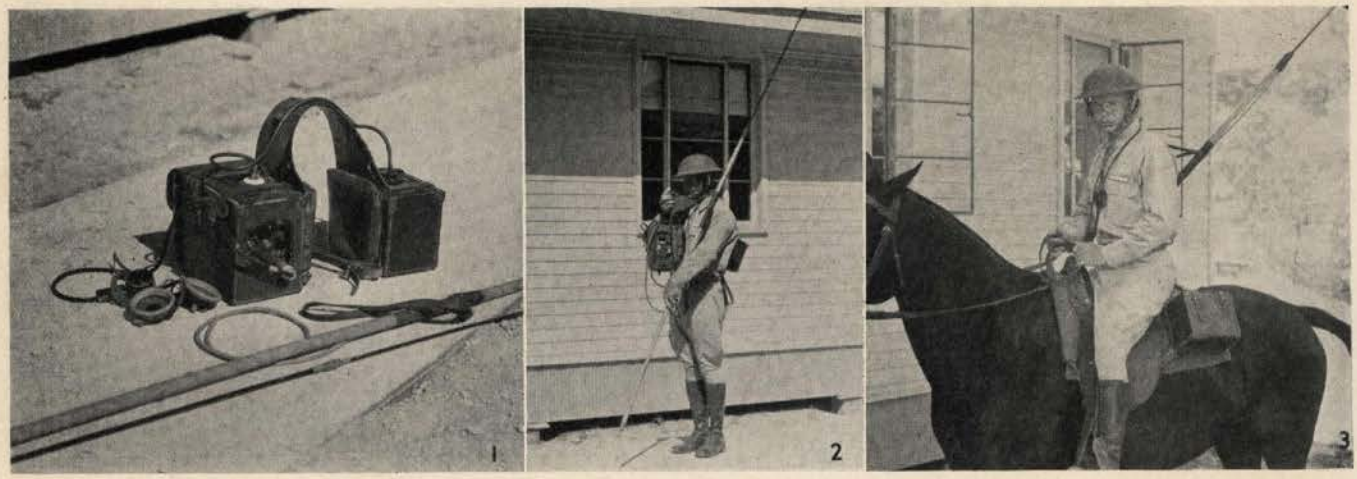
There is a set, the SCR 194, familiarly known as the "walkie talkie," which nearly fulfills the requirements for a short range portable set for small cavalry units. This set is not an authorized issue to Cavalry, but it should be obtainable and a little work and ingenuity will fit it for cavalry use, either on horse or vehicle.

Vehicular installation is provided for in the equipment issued with this set and is comparatively easy on the ¼-ton, 4 x 4 bantam and with slight variations in mounting and securing the set, it can be installed in any car, including commercial vehicles. For this purpose the light, aluminum, tubular antenna which comes with the set is impractical due to weakness and insufficient flexibility and it is replaced by the three top sections of the standard steel scout car antenna, mounted on a special base attached to the vehicle. This base is an article of issue and is designed to permit swinging of the antenna forward or backward when striking obstacles. The antenna is connected to the set by a lead-in wire which permits the set to be located anywhere in the vehicle. Wherever located the set should be strapped or clamped down to prevent its damage, when traveling over rough ground. Vehicular installation of the SCR 194 is fully described in the Signal Corps' technical regulations on this set (TR 1210-52).

The operation of the SCR 194, "walkie talkie," set for continuous operation on a trooper's mount is not provided for and requires a good deal of improvisation. The following method has proved practicable in local tests by the Communications Department of The Cavalry School:

In order to carry the set on the trooper's mount, a pair of special saddlebags was made by the saddler (see photograph fig. 1). The regular saddlebags may be enlarged instead, as a temporary measure, but the special boxes of stronger leather fitted to the two halves of the set and lined with felt make a much more satis-

★Instructor, Department of Communications, The Cavalry School.



1—A close-up of the complete equipment for mounted operation of the SCR 194. The battery box is on the right, set box on the left with opening in front bare to permit access to dials, switches, and plugs. To left of set box lie headphones and microphone. The antenna pole is in front with top three sections removed and lying beside it. The antenna lead-in wire is taped to the pole well down to prevent excessive swing, which affects the tuning of the set. 2—Dismounted operation of the mounted rig. Operator carries set boxes over right shoulder. Right hand holds microphone to transmit. Antenna pole is carried over left shoulder or as convenient. 3—Near side view showing battery box. Note trooper has both hands free. Antenna will pass easily under overhanging branches.

factory carrier for extended use. The sides of the carrier boxes that are next to the horse are equipped with leather covered hair pads. On the boxes shown, these pads are believed to be too small and too thick. Larger, thinner pads extending an inch beyond the edges of the box would better distribute the weight. The present carrier has some rolling motion at the trot which would be corrected by larger pads; however the boxes do not flop or pound even at the trot, while at other gaits they ride practically motionless.

For the antenna, three sections and a half of the standard tubular steel scout car antenna were used. The last four inches of the half section, at the bottom, was let into the end of a wooden pole six feet long and secured by a small bolt drilled horizontally through the pole and antenna. This bolt with nut and washer also served as the connection for the antenna lead-in wire to the set box where it was secured by a wing nut on a bolt screwed into the antenna recess. Needless to say the connections of the lead-in wire at the antenna and set box must be secure to insure successful operation. By means of the ordinary guidon lance bucket on the stirrup and a leather arm loop on the shaft, this antenna can be carried like a guidon while the trooper is mounted. A precaution to observe is to have the wooden pole long enough to come well above the trooper's hand so that he does not touch the antenna itself. When the set is to be put into operation dismounted, the antenna lead may be disconnected at the set and the regular light aluminum antenna used if it is impracticable to carry forward the longer, mounted antenna pole.

For continuous mounted operation the operator wears the headphones under his helmet and carries the microphone hung around his neck on a strap which goes around the microphone case. It may be tucked inside the shirt to prevent bouncing around at fast gaits. Here is where a throat or "contact" microphone would be valuable since both the operator's hands would be left free. Such microphones, so far tested, have not provided sufficiently clear modulation for practical military use. The common chest microphone used by telephone switchboard operators offers a good substitute, but has the objection of requiring a rewiring job on the microphone cord circuit.

Needless to say the horse used to transport this set should be a good one. He should be strong, easy gaited and easily controlled.

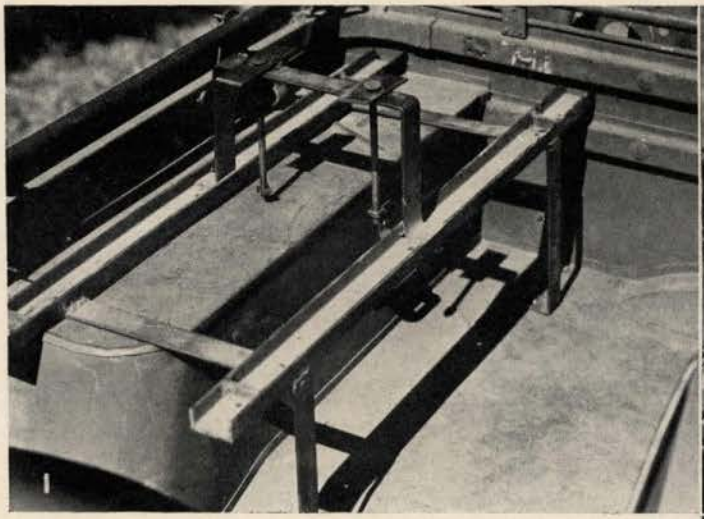
Since the trooper who operates this set will generally be with the CP of his element, his own saddlebags and cantle roll can generally be shifted to a CP car or to one of the extra mounts. Pommel pockets or a pommel roll could be employed on his own saddle to carry his essentials.

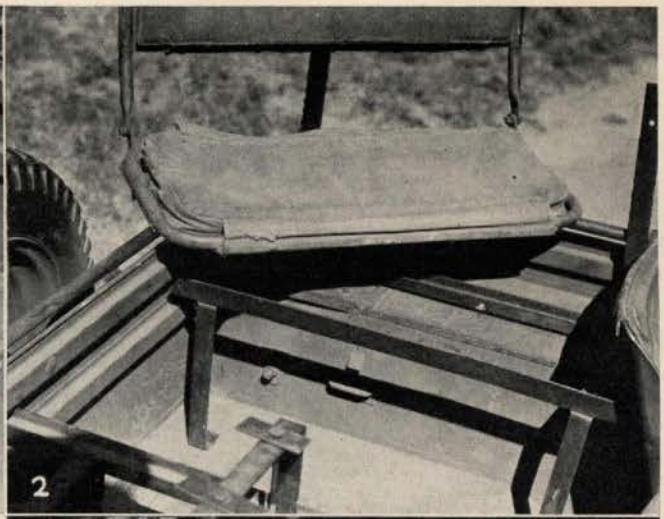
The complete set including leather carrier boxes, antenna pole, headphones and microphone weighs 34½ pounds. The parts of the set which replace the saddlebags and cantle roll on the horse; namely, the leather carrier boxes holding the set box and battery, weigh 29¼ pounds. The weight of the field equipment which this radio set in its carrier boxes replaces is as follows:

Saddlebags filled (including reserve ration)	20 lbs.	14.5 oz.
Cantle roll	9 lbs.	4 oz.
Canteen filled	3 lbs.	11 oz.
	33 lbs.	13.5 oz.

Capabilities

With "walkie talkie" sets mounted as described, instant communication can be made available continu-





1—Interior of rear deck of Ford Bantam showing construction of base on which pack radio set is secured. Short pieces of strap iron shown on riser in center of frame are turned and lifted to rest across top parallel bars of pack frame. Frame is then tightened down on base by turning up the nuts on the long bolts as shown. Nuts should be wing nuts to permit tightening by hand. 2—Interior of rear deck of modified Ford Bantam with seat temporarily lifted out of recess to show construction. 3—Pack radio set (SCR 203) mounted on Ford Bantam. 4—Right side view of Ford Bantam carrying the cavalry pack radio set (SCR 203) and crew. Radio section chief is shown operating key. Two rear men are assistant operators and turn generator. Either may act as key operator relieving car commander, or one operator may proceed mounted to assist in leading horses of section.

ously between reconnaissance or counterreconnaissance patrols and their detachment command posts, between troop and squadron CP's, between a maneuvering force and its fire support, and many other combinations.

One of the uses that suggests itself is between forward observers and the mortar platoons of regiments to permit prompt delivery and correction of fire.

March control is facilitated by the employment of these radio sets, also their use with security elements will provide timely warning and prevent surprise of our columns, bivouacs, or concentrations by hostile mechanized or air attacks.

These capabilities cannot of course always be realized completely. Range of operation will vary somewhat with weather conditions, but more due to the effect of "mask"; that is, intervening hills, woods, buildings, etc. While the ultra high frequency employed has the advantage of requiring the minimum weight of equipment for the results achieved, it is also true that the closer our radio carrier waves approach the extreme high frequency of light waves, the more they act like light, sometimes casting "radio shadows" because the rays are absorbed or reflected by intervening objects. As a result two "walkie talkie" sets on opposite sides of a hill may be temporarily out of communication with one another until one or the other moves. Usually this only necessitates a short move, often as little as five yards, and does not usually mean that the sets must be actually on line of sight with one another. However, it should be remembered that line of sight operation does give maximum radio performance when ultra high frequency radio sets are used.

In tests conducted by members of the Communications Department of The Cavalry School, a base station was established under trees in a ravine near the

school buildings and the mounted set sent out on a circuitous route of about four miles on trails involving high and low ground, intervening hills, woods and buildings. Continuous communication was easily maintained in spite of the fact that at no time were the two sets on line of sight with one another. However on this test, the maximum air-line distance between the two sets was never more than two miles. The rated range of this set is five miles, subject of course to conditions of weather and terrain. The mounted set was operated at all gaits with uniformly good results and even jumped over a three-foot obstacle while transmitting.

For dismounted action the set in its carriers may be quickly removed from the horse and slung over the trooper's shoulder just as saddlebags are often carried (see photo). The mounted antenna may be carried forward, or the lighter, telescoping, aluminum antenna, if brought along, may be used.

The use of short-range voice radio by mounted units is not new. Similar tests have been made over five years ago. Horse artillery and some cavalry units have employed similar equipment in the past, but the need for such radio equipment was never before so acute as it has become today.

The problem of adapting the present issue pack radio set SCR 203 to modern warfare is fairly simple. To provide for continuous operation on the march, it was only necessary to mount the set in an accompanying motor vehicle.

Radio for Bantams

The Ford ¼-ton bantam car was employed as the vehicle most likely to be available and the most suitable to accompany squadron, regimental, and brigade command posts on the march.

By means of channel iron, a frame was made (see fig. 2) on which the set, still on its pack frame, would rest on one side of the car. Then by moving the rear seat to the opposite side with the help of more channel iron (see photo), it was found that the set could be easily operated and the generator turned en route.

The problem of fastening the set tightly to the car was solved, as shown in the photograph, using a couple of long bolts with wing nuts through short pieces of strap iron which are turned to engage the top parallel bars of the pack frame and tightened down with the wing nuts.

Only the two heavy, bottom sections of the tubular steel antenna are normally used when operating mounted and the same is true in the vehicle. In either case more sections, though desirable, were found to be impracticable due to the rigidly mounted inflexible antenna base, which resulted in quickly snapping off a larger antenna from the motion of the horse or vehicle alone, or by encountering some overhead obstruction. The need of a longer, more flexible antenna and a flexible base mount is obvious.

One solution would be to install on the vehicle the same type of flexible antenna base as is found on the scout car, but this is a rather large cumbersome mount for a small vehicle and it would be difficult to install and maintain.

Another solution is to use the vehicular base mount described above for the SCR 194 with the three top antenna sections which are quite light and flexible. This should be mounted at or near the rear of the car on the side on which the set rests, and as high as possible.

With any such mounting the advantages of carrying the pack radio set normally in a bantam car are obvious.

Continuous communication under favorable conditions for operating is provided for.

A pack horse is relieved of this heavy load on the march. If needed, he may be led along, carrying only the pack saddle so that the set on its frame may be quickly transferred to the horse, at any time.

The bantam car may carry additional communication equipment, such as panels, pyrotechnics, signal lamps, flags, etc., for which no transportation is available with the mounted radio squad unless the already heavy pack is loaded down further.

The car may have many other uses such as carrying or drawing an antitank gun or antiair machine gun ready for instant operation.

By using an easily procurable commercial-type vibrator in connection with the 6-volt storage battery of the vehicle, power can be supplied to the set when vehicular mounted without the use of the hand generator. This would enable a single operator to handle the set as is the case in radio-equipped scout cars or tanks.

The employment of the short range voice set for small units mounted or dismounted and the vehicular transportation, except in emergencies, of the pack radio set will provide our horse cavalry with the continuous instantaneous communication which it must have to make the most of its special abilities in a lightning war.

Note: Credit is due to 1st Lieutenant A. W. Turner, Cavalry; Master Sergeant Joseph P. Frank; Pfc. Sp. 1cl. John E. Schrengohst and Pfc. Sp. 4cl. Gates G. Ross of the Communications Department of The Cavalry School for work in the mounted operation of the SCR 194.

The installation of the radio pack set (SCR 203) in the Ford bantam is the work of Captain Lawrence B. Schlanser, Commanding Headquarters Troop, 3d Cavalry Brigade, assisted by Staff Sergeant Thomas H. Clark of that troop and Sergeant Burl T. Griffin of the Communications Department of The Cavalry School.

Please show your copy of this issue to a non-subscriber.

The Cavalry School Department of Motors

By Major Albert Whipple Morse, Jr., Cavalry

WITH the advent of the motor in the Army, the Cavalry promptly motorized all its cargo transportation. In addition to cargo motor transportation the Cavalry has many types of messenger, weapons, and personnel carriers and mechanized types of vehicles. This motorization and mechanization is general in all Cavalry organizations.

In order to provide key motor officers and noncommissioned officers and trained mechanics, The Cavalry School, heart of the Cavalry service, opened a motors school, where, under central control and with the ablest personnel obtainable, motor specialists are trained.

From the initial motors class of nine officers who graduated on September 28, 1940, from a one-month course designed to equip them as regimental motors officers, The Cavalry School has greatly extended the scope of its motors instruction.

There are four motors courses in operation at the School. Each of the classes extends over a period of three months.

Twenty officers are enrolled in the No. Five Advanced Motors Class which started June 16. There are 34 men in Enlisted Class No. 3 which opened May 12, and 30 in Enlisted Class No. 4 which started June 16. Another class for enlisted men began July 14.

Officers are taught the administration of motors operation, and are given sufficient actual training to enable them to know when the mechanical phase is properly done. Enlisted men are taught to be first class mechanics.

The instruction is divided into three phases. During the first month the work is devoted to chassis units, such as the differential, transmission and front axle. The second month concerns the engine and the parts which function with it, such as the carburetor, generator, starting motor, cooling system and oiling system.

In the third month, the student spends his time on scheduled maintenance operation, covering daily, weekly, monthly, and semi-annual inspections, and the student is trained to actually make these inspections. Also, in the third month attention is given to vehicular tune-up and trouble solving.

The Army motor maintenance system is divided into four echelons, which in a general way can be said to cover, consecutively, driver maintenance in echelon one, preventative maintenance in echelon two, unit repairs in echelon three, and overhaul and rebuild in echelon four.

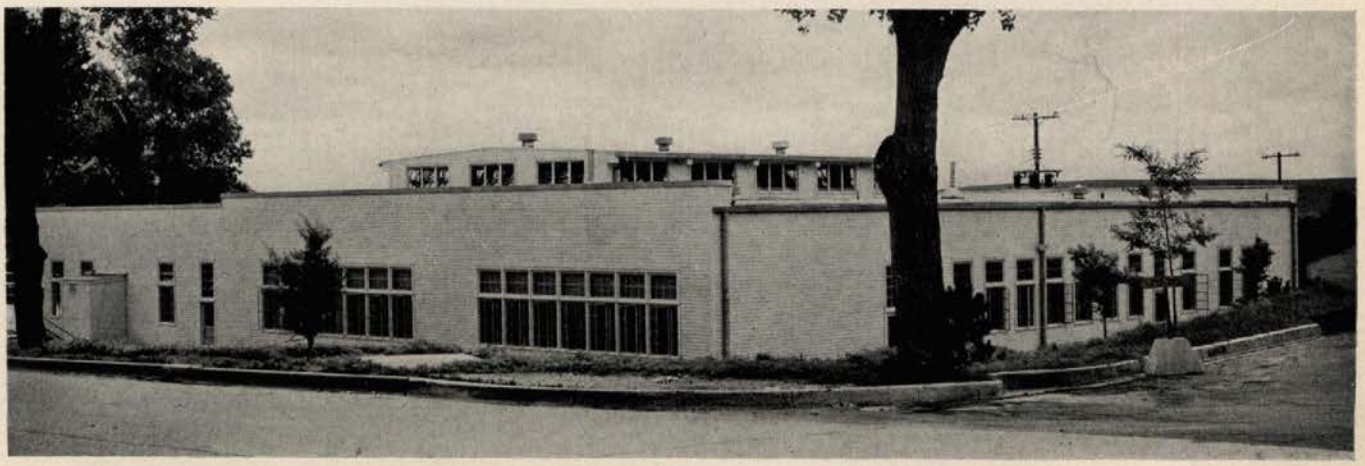
Motors instruction at The Cavalry School goes beyond the second echelon, but does not entirely cover the third echelon. The School can be said to confine itself to purely preventative maintenance.

The Motors Department does no repair work for any organization. It is entirely instructional in its scope and operation, and disassembles and reassembles vehicles for the benefit of the students.

There is enough equipment in the department to maintain in running condition the vehicles of a Horse Regiment and of a Reconnaissance Squadron.

The new Department of Motors building is built in accordance with plans generally used in modern motor maintenance establishments. Included are classrooms for theoretical instruction, well-equipped shops, offices for instructors, ample space for vehicles being worked upon, and accommodations for the students which include individual lockers for clothing and tools. This modern building and equipment greatly facilitate the conduct of instruction.

Captain N. A. Loeb is Chief of the Department of Motors, and Lieutenant R. C. Freihube is Administrative and Supply Officer. Captain E. C. Dunn is in charge of the Officers' Class, and is assisted by Lieutenant G. A. Ralls. Captain A. J. Longley is in charge of the enlisted classes, and is assisted by Lieutenant F. C. Healy in the first month's phase, by Lieutenant H. T. Nelson in the second month of instruction, and by Lieutenant C. E. Bartholomew in the third phase of instruction during the third month.



New school building, Department of Motors, The Cavalry School

The Kitchen Truck (H&M)*

By Major James H. Phillips, G.S.C.

EXPERIENCES gained in the 1940 maneuvers showed it was necessary to make some improvements in the kitchen trucks of the 6th Cavalry. The general plan was to outfit the truck so that cooking could be conveniently done while the truck was in motion; that the required kitchen supplies and rations could be so carried that they would be accessible, and leave room for the kitchen personnel to ride comfortably. Nothing was to be attached permanently to the bed of the truck thereby making it possible to use any cargo truck as a kitchen truck and by removing equipment making the truck available as a cargo truck.

All the mess sergeants of the regiment were consulted as to ideas and suggestions. It was felt that since this truck is their workshop, the best ideas would come from them. As each piece of equipment was constructed it was shown to the mess sergeants for their approval. The kitchen truck is therefore the result of the ideas and suggestions of these men.

The first item, was to build a suitable place for the carrying of the rations. The cabinet shown will carry two days' field rations. The cabinet is made from salvaged cot frames and plywood. The shelves can be removed for cleaning. As shown in the picture, the milk cans and G.I. cans fit under the cabinet. The top of the cabinet can be used for the cook's personal equipment. The cabinet is carried in the front of the truck and is held in place by two U bolts.

The second item, is the table which is used when serving or when preparing the food in bivouac. This table is carried under the bed of the truck. It is held in place by the towing hook.

The third item, is the small folding table used inside the truck. It makes a convenient place for the cooks to

place hot pans. When not in use the table folds up against the side of the truck.

The fourth item constructed, is the bracket to carry the fire extinguisher.

The idea being that there should be a place for everything, it was decided to get as much equipment as practicable out of the cook's way and to keep the floor of the truck clear. This meant that the tent poles had to be carried on the outside of the truck. The ridge pole is hinged and carried in between the cab and the cargo body and is strapped in place. The upright for the kitchen fly and water bag are strapped to the right side of the truck. Some troops have had brackets made for these uprights.

The kitchen fly is folded and placed underneath the tarpaulin. From this position it can be pulled out to be used, as shown in the picture, or can be taken out for use as a regular kitchen fly.

The seats have been placed on the outside of the truck. In bivouac these can be lowered and make a handy shelf to place such articles as bread, condiments, etc. The bows have been raised to permit the cooks to stand upright.

*6th Cavalry (Horse-Mechanized), Corps Reconnaissance Regiment.

NOTE: Specifications for the construction of the kitchen table, cabinet, ice-box, serving table and fire extinguisher bracket will be furnished upon request to the Commanding Officer, 6th Cavalry, Fort Oglethorpe, Ga.

Supply of a Horse Regiment

By S-4

Editor's Note: This is the fourth of a series of articles on this subject.

WE left S-4 in the last issue of The CAVALRY JOURNAL with some well-laid plans to care for the supply of his regiment that afternoon and night (Wednesday). He has two truck-loads of ammunition on the way up; has made arrangements for getting kitchen trucks forward to mess locations for the evening meal; has selected the point where he wants supplies delivered by Division that night; and made preliminary arrangements to organize convoys to go after those supplies.

As is usual with well-laid plans they are not much more than made before something happens to blow them up; if not completely then to shock them slightly. Sometimes it's the enemy, sometimes what just seems to be Lady Luck doing her worst. And usually when she decides to frown she picks her time carefully.

The first intimation our S-4 had that all was not going well was when the guide stationed at the windmill to conduct the two ammunition trucks bringing up extra ammunition to the present location of the trains reported with only one of the trucks following. There had been a slight but perfectly plausible accident on the return trip of the two trucks. A bridge over a small ravine which S-4 remembered very well now, but which he had not recalled when sending the trucks back for ammunition and warned the drivers, had let the second truck through with its load. The drivers had been careful enough; they had crossed the bridge twice before, but this time their loads were heavier. The first truck had crossed all right but the second proved too much. It now lay on its side in the ravine and its load with it. The driver of the first truck had noticed that the second was not following; had stopped his own truck under cover and investigated. The driver of the second truck had been quite badly bruised so the wrecked truck had been left with the two men riding the truck normally, and the driver had come along on the first truck.

S-4 has an immediate problem on his hands. First he sends the injured driver up to the regimental aid station for attention of the surgeon. He wants to salvage the wrecked truck if he can, and he must get the ammunition up as soon as possible. Men and trucks are needed. What trucks are available? Luck is with him here; one of the Special Weapons Troop combat "ammunition" trucks reports in to the park empty of ammunition; it still has its load of supplies and baggage, but the troop commander has "stocked" his gun positions with all the ammunition on that particular truck and sent it back for a reload. The first thing S-4 does is direct that the supplies and baggage remaining on this truck be transferred to the kitchen truck of Special Weapons Troop. Men are next. All men normally riding the trucks are busy with their regular troop assignments. The maintenance officer is informed that he will have charge, and S-4 proceeds to the CP to get some men for help. He needs only a few to salvage and reload the ammunition, and lend some help to the maintenance crew. The regimental commander gives him six men from the reserve troop and four from headquarters troop. S-4 brings the six back with him in his command truck, and gets the four from headquarters troop rear echelon near the truck park. As soon as they are assembled the maintenance officer, with his maintenance truck and the extra truck, leaves to do his job. *Note:* Probably S-4 "could" have gotten all ten men from headquarters troop, but it is written that some come from the reserve troop to illustrate how details of this nature may be made from reserves, and thus deplete their strength.

S-4 now has one truck load of ammunition, and being duplicate loaded at the Army Depot in compliance with his written request he has some extra ammunition for all calibers. What should he do with it? Word has gotten back that there has been some firing along the river line, but so far nothing like a real scrap has materialized. He has one rifle troop ammunition truck in the park, but the remaining two ammunition trucks for the Machine-Gun Troop and the Special Weapons Troop have been released to troops and are forward. These two trucks will probably be well back from the river line, most likely near the reserve. S-4 leaves the rifle troop ammunition truck in the park and conducts the loaded truck forward. When he reaches the CP he learns there from the troop commanders the location of the trucks of Machine-Gun and Special Weapons Troops. Moving to those trucks he directs the transfer of appropriate ammunition to each, then releases the truck with its remaining load of rifle and machine-gun ammunition to the commander of the 2d Squadron, who will have his own S-4 handle the truck from then on. At this time S-4 advises the squadron commander of the accident to one of the rifle troop trucks, and that when the transferred load arrives it will be divided between the one truck now in the park and the one sent back for the load; the two will be sent forward to him, the Special Weapons Troop truck to remain with the squadron as a replacement for the wrecked truck until further orders.

While "up front" S-4 noticed some scattered groups of led horses and saw with satisfaction that all them

were being grazed by the horseholders, except for one group which was being watered in a small stream. The stable and file closer sergeants of the regiment were well trained and were not letting this chance slip. And one other feature was noticeable by its absence, and different from the time when the regiment was "green"; not a horseholder or any other man was sitting, rather lounging, on his horse while halted. All good signs, and always noticeable where well-trained cavalry troops are operating.

Before leaving to return to the train park S-4 reports to the regimental commander to inform him fully as to his own situation and plans, and to receive any further instructions the regimental commander may wish to give him. He assures the regimental commander that, barring the loss of several of his trucks, he will be able to handle his end of the situation satisfactorily. Regiment has received no further instructions as yet from Division; so no change in plans is contemplated. The division reconnaissance squadron has reported two strong bodies of motorized enemy troops approaching the river, preceded by strong mechanized reconnaissance. Some of these detachments had reached the river line, but had withdrawn when fired upon. The reconnaissance squadron planned to continue its operations on the enemy side of the river until forced to withdraw, when it would recross well to the flanks of the regiment. Just as S-4 was leaving the command post, G-3 with another staff officer of the division arrived by motor to learn the situation at first hand. Waiting until he had heard enough to indicate no change in plan was brought up by these officers, S-4 left.

Upon arriving back at the train park, S-4 first checked up to see if the maintenance officer had sent any message. He had not, so he then checked up on the kitchen crews to see that they were preparing the evening meal, that none of the bright kitchen equipment was exposed to overhead observation, and that the drivers had taken all possible measures to conceal their trucks. One kitchen crew was just about to light a wood fire to heat water for coffee, and save gasoline. Strong language dissuaded them effectively. S-4 then explained the situation as he now understood it to the regimental supply sergeant and the commander of headquarters troop.

By this time it has become evident that the enemy is more active up front. Two flights of enemy observation planes have been operating well up, evidently reconnoitering the river line and fairly deep on our own side of the river. And what sounded like a couple of shell bursts had been heard. S-4 is a bit worried about his ammunition truck, but feels that his train park need cause him no concern because it is so well concealed. Our favorite child is always the one to give us trouble; so it is with S-4. One of the assistant cooks had trouble starting one of the gasoline range burners and had flooded it with gas, result, a sharply blazing fire just at the wrong moment. And to smother the fire the bright boy used the nearest thing he could lay his hands on: a blanket. It was too late to prevent a nice smoke plume for all to see, and S-4 prayed no enemy air observer had caught it in his eye. It was not long before he knew he was wrong, though. First a single shell landed near the woods in which the train was parked, and not much later several fell in the woods. The area must have looked like an excellent spot for reserve troops from the air and the enemy observer was just taking a chance.

The trucks were well scattered and under good cover. To move them would insure their being observed, so S-4 decides to stick it out. Certainly the enemy won't waste much fire on an area if he cannot see any results. But Lady Luck frowns again. A "lucky hit" lands near one of the headquarters troop kitchens, kills one of the cooks, injures three men, just about finishes the kitchen, and damages the truck severely. The troop commander is on the job and the troop aid men take care of the injured men. The maintenance officer had left four mechanics in the park and these men wanted to work on the truck at once, but it looked as though it would be beyond them to get it into operating condition. S-4 directed the supply sergeant to rustle up a four-man detail from the other troops while he looked around for a suitable spot in which to bury the soldier who had been killed. When the detail was ready he designated the spot to the supply sergeant, who in turn showed it to the NCO in charge of the detail. S-4 then sent a radio message to the command post reporting the incident and requested that the chaplain be sent back as soon as convenient. He wants to get the unpleasant incident over with just as soon as possible, and it is not good for such reminders of what war really is to be visible any longer than necessary.

A little later the maintenance officer arrives with the transferred load of ammunition, and reports that he cannot with his equipment get the wrecked truck out of the ravine; that a wrecker truck only can do the job. He reports further that the bridge is not usable, and that no detour is possible in the immediate vicinity. To make matters worse he reports after a thorough inspection of the headquarters troop truck that he will be unable to repair it, and that it will have to be towed to the rear. This means the loss of two trucks, and this seriously affects S-4's plans to haul supplies that night. S-4 decides to tow the damaged truck out with the convoy that night and turn it over to the quartermaster convoy bringing up supplies for further movement to the rear. What should be done about the wrecked truck in the ravine? S-4 feels his obligation to conserve government property, and he would not be warranted in abandoning the truck without further effort. Also the fact that the bridge is out is information which higher commanders should have. Accordingly S-4 sends a message through command radio channels to Division giving the location and information of the

bridge and requests that a wrecker truck be sent to get the truck out of the ravine. When Division receives the message they will probably send engineers to repair the bridge if it is needed for future use, and a wrecker truck to salvage the regimental truck.

The supply sergeant has been busy since the ammunition arrived and has split the load, half of it being transferred to the rifle troop ammunition truck still in the park. When this is done the two trucks in charge of the truckmaster are sent forward to be released to the squadron commander as previously arranged by S-4. S-4 now feels that he has enough ammunition in the hands of the troops to meet all possible needs for the day, and remembering the 1st Squadron he hopes they are as well off.

It was not much later when S-4 received a message from the CP that the 1st Squadron had reported the destruction of one of their trucks by artillery fire. It would have been easy for S-4 to have left the Squadron S-4 to his own devices as to how he would report with five trucks to haul supplies at 9:30 PM. Visualizing the situation, though, he knows that with only six trucks at his disposal the squadron S-4 will be hard put to comply with his orders, and to do so may work a real hardship on some of the troops who are right now in combat and need any help that can be given them. Lending a helping hand he gets off a message to the 1st Squadron to send a convoy of four trucks for supplies at 9:30 PM.

Time has passed and it is close to the time when the evening meal should be sent up to the reserve, machine-gun, special weapons and headquarters troops. Later the meals will be sent up for the troops that are on the river line. Why should this be done when all troops marched with one meal (supper) on the ration packs? Our regimental commander and S-4 both believe in feeding their troops the best way possible. Meals prepared in the regular kitchen will be more tasty and nourishing than those prepared with the "buzzy-kot" in some location where water may be available in small quantity, or not at all. The meal on the ration packs is a safety factor; if the trucks cannot get up, then it should be used. To use it, however, will require wood fires, easily observed from overhead, and as a result men ordinarily will not eat until well after dark. So in this regiment the trucks are used unless some condition makes it absolutely impossible. S-4 has his supply sergeant warn the mess sergeants to start getting ready to go forward with him when he, S-4, returns for them; also that each kitchen truck will take up enough grain for one feed for the horses, and that the headquarters troop combat truck will go forward at the same time with its load of gasoline for the scout-car and motorcycle platoons. S-4 then leaves for the command post taking the transportation officer with him.

When they reach the CP they first learn whether there has been any change in the location of the troops, and by contacting the regimental commander that he does not wish to change any plans about messing the men. S-4 takes this opportunity to inform the regimental commander that he is sending up grain for one feed by the kitchen trucks and gasoline for the scout cars and motorcycles. He recommends that the troops keep one meal on the ration packs (breakfast) and the morning feed of grain on the saddles. Needless to say the regimental commander agrees; by doing this the morning meal is assured to men and horses in practically any situation, without regard to where the trucks may be. But if it is at all possible this regiment will serve the HOT breakfast to which the men are entitled from the truck messes.

The enemy had made no determined attack on the river lines; their operations have been confined to reconnaissance and feeling out the situation. They have used some artillery fire and during the afternoon their air observation has been pretty active. Judged by the time of day the regimental commander believes they do not intend to try to force a crossing today. The situation in the 1st Squadron sector is similar. No new orders have been received from the Division; the regiment is due to be relieved some time that night, but at what time the regimental commander has no idea as yet.

Again S-4 thinks of the 1st Squadron, and before he returns to the train park he sends a message to insure compliance in that squadron with the regimental commander's wishes as to the morning meal and grain being carried on the packs and saddles. Before leaving the CP he contacts S-3 and tells him the plan with regard to these details and asks him to have it communicated to troop commanders at the first opportunity. Returning to the train park S-4 has the mess sergeants assembled and issues instructions to them about the morning meal and grain feed, these instructions to be relayed to the troop commanders at the mess locations. He cautions the mess sergeants that all trucks will be back in the train park not later than 8:00 PM, at which time they will report for further instructions. Before starting the trucks forward in charge of the transportation officer he cautions him that all vehicles will operate with lights extinguished after dark.

Not long after the departure of the transportation officer with the kitchen trucks S-4 receives a message to report to the CP. He loses no time in starting, but before leaving he tells the supply sergeant that the kitchen trucks of the two river line rifle troops with extra grain as for the others will be ready to move forward at 6:30. Arriving at the CP, S-4 receives news that will require him to change his plans in many respects. Instructions have been received from Division via a staff liaison officer designating a point different from the one recommended by him where supplies will be turned over to him; the time of delivery has been set back to 11:00 PM; certain roads cannot be used beyond a given line (needed for divisional columns on

the way up); and vehicles will operate with lights extinguished to a line approximately ten miles from the river. The orders to the regiment have also been changed: it is not to be relieved as originally planned; instead it will remain in position and its sector will be taken over by the brigade of which it is a part at 1:00 AM. Evidently G-3 or the division commander realized it would be better to have troops familiar with the terrain in position to meet an early attack tomorrow morning than to relieve them with troops who would not have this advantage, and also that there would be much less confusion. The brigade commander was due to arrive in about one hour, and shortly after that S-4 could anticipate being in possession of more complete plans based on his directions and orders.

S-4 spends the time before the arrival of the brigade commander in considering the changed situation and making new plans. It is evident that a real fight will be on tap for the morning, and they must be well fed and have plenty of ammunition. The point designated for delivery of supplies by division is about twenty miles to the rear and the restriction on certain roads is going to make it harder to move the supplies. There are enough roads still available for use so that the problem can be solved, but it does seem to him that Division could have pushed the supplies farther forward if they had tried. But orders are just that. Looking over his map he selects unrestricted roads for his own routes, and for the convoy of the 1st Squadron. Because of the distance to the truckhead and the restriction on lights, he estimates that he cannot be back in the regimental area with supplies prior to 2:00 AM, and at that must encounter no unforeseen delays. Where should his plan be changed, if at all?

Some of the factors affecting his plan are:

All trucks except ammunition trucks will have to be well to the rear before daylight.

All troops should be resupplied with ammunition during the night and all ammunition trucks should have prescribed loads of ammunition in addition.

All troops should have a hot meal for breakfast, served from truck messes if possible.

All troops should have two meals and two feeds of grain (noon and evening) in their possession by morning. Where should they be carried?

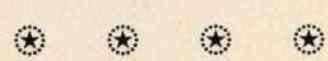
All combat vehicles should be completely serviced with gas and oil tonight, and an additional filling for them should be on the truck train by morning.

The regiment is short three trucks now. Notwithstanding, it must be served with a flexible, mobile and adequate supply tomorrow.

The more S-4 ponders the situation and problem, the more he foresees that this night he will have little use for that excellent sleeping bag he purchased from the Book Department of The Cavalry School just before this war started.

The General

"The general must know how to get his men their rations and every other kind of stores needed for war. He must have imagination to originate plans, practical sense and energy to carry them through. He must be observant, untiring, shrewd; kindly and cruel; simple and crafty; a watchman and a robber; lavish and miserly; generous and stingy; rash and conservative. . . . He should also, as a matter of course, know his tactics; for a disorderly mob is no more an army than a heap of building materials is a house."—This definition of a general was coined by Socrates two dozen centuries ago.



A general should avoid putting his army into quarters of refreshment, so long as he has the opportunity of collecting magazines of provisions and forage, and thus supplying the wants of his soldiers.—NAPOLEON.

An Old Friend Goes Home

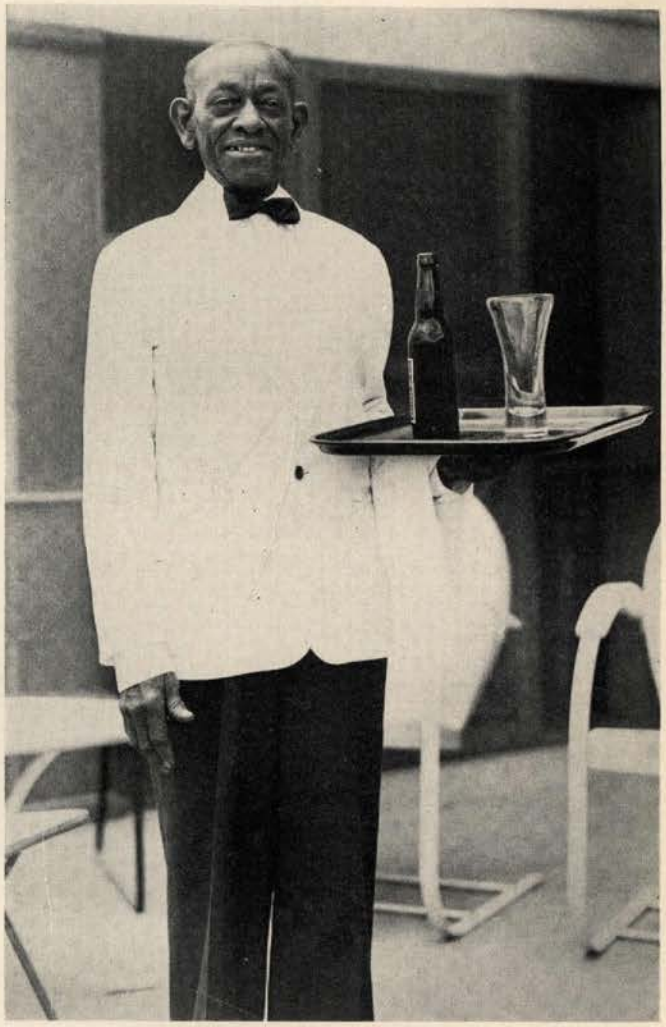
*By Lieutenant Colonel John C. Macdonald, Cavalry**

CAVALRY officers throughout the Army will be interested to know that an old and faithful figure in the life of The Cavalry School for the past forty years has been retired from active service. Mr. Sam Henson, whose picture accompanies this article, first came to Fort Riley as a mess boy in 1903 at the estimated age of 25 years. It was said of Sam that he never forgot an officer's name and frequently in the later years of his service at Riley when Generals and older Colonels of another day visited the Post, Sam respectively recalled their names and incidents pertaining to the days of their youth. When the old Club was abandoned shortly after the World War, Sam became steward of the officers' mess at Arnold Hall, and for over 20 years, assisted by Miss Lizzie, catered to the needs of permanent personnel, instructors and students alike. There is many an officer in the Cavalry service whose education and etiquette were improved by Sam's kindly admonition, not only as to the time meals were served but as to what could be expected for particular meals, the ideas of the young officer to the contrary notwithstanding.

When Godfrey Court, known as the old East Flats, was abolished in the 30's and the central building was retained as The Cavalry School Club, Mr. Sam, by right of inheritance, became the Club Steward. Faithfully, for close to ten years, he supervised the meals and the service and watched over the younger waiters and taught them how to serve and care for guests at the mess, dinner parties and dances.

The ravages of time have made their marks on Sam and this year it was determined that, because of physical handicaps incident to old age, he was not able to continue in his usual cheerful, efficient manner to take care of the many responsibilities that devolve on a Club Steward. Officers, returning to Riley, noted Sam's failing physical condition, but also noted that his spirit and cordial willingness to be of service remained undimmed.

The Board of Governors, recognizing Sam's long years of service and his failing health, decided justly that it was time to retire him from active service, and to such peace and quiet as he might find for the remainder of his days. The action of the Board gave Sam the privilege of retiring with full pay for the remainder of his life and of remaining around the Club as long as he saw fit to do so in the capacity of major-domo and official greeter of officers old and new to whom he had endeared himself over long years of service, or the privilege of going to his home in Washington. Sam appeared before the Board of Governors, expressed his deep appreciation for the kindness shown him by Cavalry officers for close to forty years and particularly for



Sam Henson

the kindly action of the Board of Governors in offering him retirement for his remaining days. He chose as he stated, "With your permission, gentlemen, I will go back to my home in Washington to live out my declining days with my brother. The doctors tell me it will not be long but I have the feeling that my older brother and I can live out our days in happy reminiscences of our services to those who have made our lives so full and so worthwhile."

When it came time for Sam to leave, a generous contribution from the officers of the Post gave Sam his ticket home and an ample bit of pocket change to buy incidentals en route.

Officers throughout the Cavalry service will remember Sam with a feeling of kindness and respect as one who represented the highest ideals of his race and as one who gave his life to enhance the happiness of others.

His address in retirement is: Care of Frank Henson, 312 M Street, Southwest, Washington, D. C.

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*Secretary, The Cavalry School, Fort Riley, Kansas.

Altitude 3,000 feet.

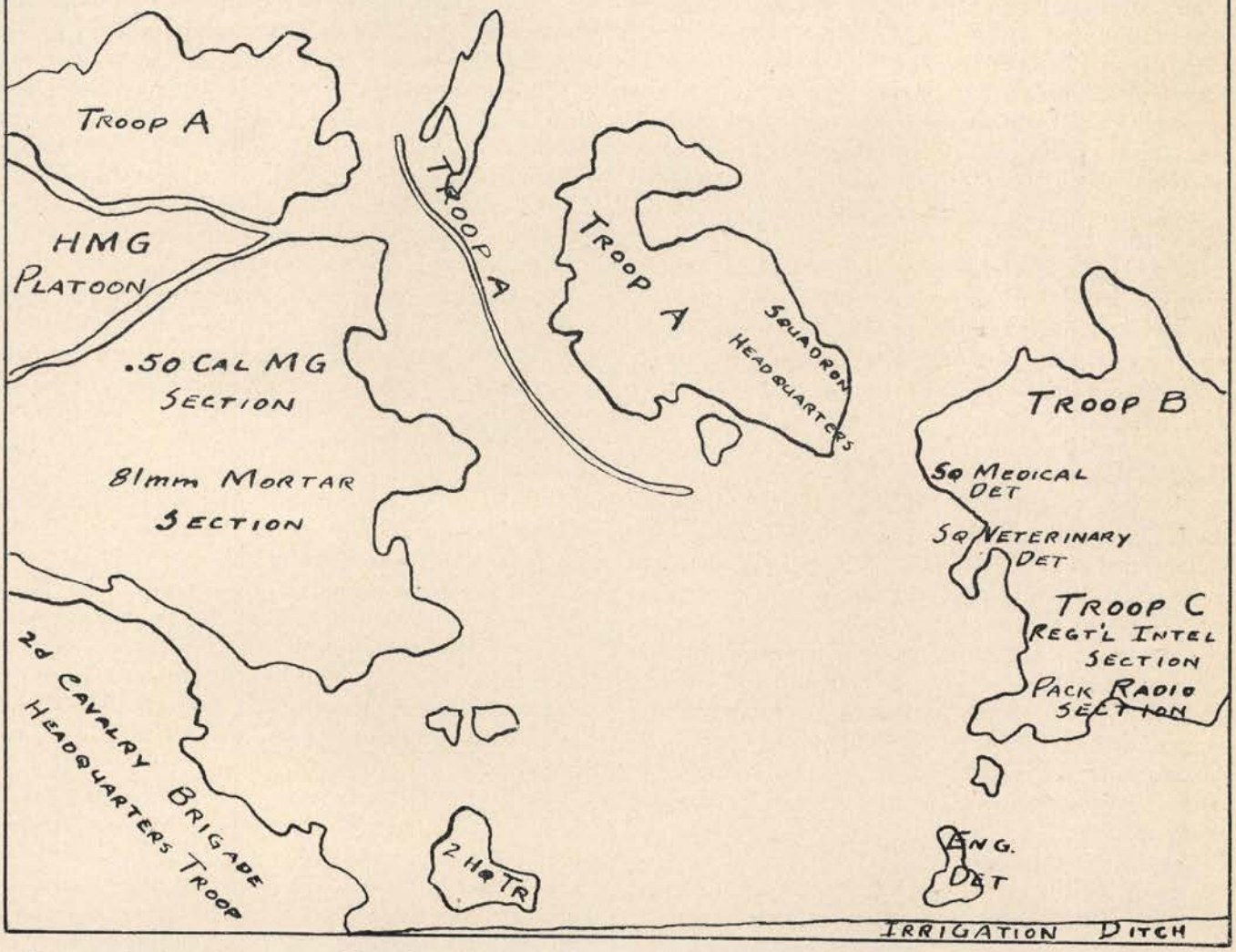
Cavalry Camouflage—

CONCEALED BIVOUAC FIRST SQUADRON, EIGHTH CAVALRY (REINFORCED)

APRIL 21, 1941

(OVERLAY)

SOCORRO MILITARY RESERVATION



Peace and quiet reign yet, statistics show the following:

Organization	*Off. and Men*	*Horses*	*Vehicles*
Squadron Headquarters	14	15	1
Troop A	74	76	2
Troop B	78	79	2
Sq. Medical Det.	9	8	1
Sq. Veterinary Det.	4	5	1
Troop C	80	80	2
Regt'l Intel. Section and Pack Radio Section	20	12	4
Engineer's Det.	5	0	1
HMG Platoon	31	39	0
.50 Cal. Section and 81-mm. Mortar Section	41	50	2
2d Cav. Brig. Hq. Troop	62	30	11
Totals	418	394	27

Good-Bye, Imperial

By Major W. J. Bradley, 11th Cavalry

THE 11th U. S. Cavalry will be leaving its temporary Camp Seeley base in the Imperial Valley as this issue of The CAVALRY JOURNAL rolls off the presses.

How a relatively small group of officers trained some 700 recruits in a bleak temporary camp where the daily temperature ranged from 100 degrees to 135 degrees, is now a small, but action-packed chapter in the history of the 11th U. S. Cavalry.

The first group of recruits, almost entirely from Chicago and Milwaukee, left their Camp Grant reception center during a blizzard on February 27th and arrived here during a rainstorm on March 1st. The army, remember, was not their choice; they had been pressed into service. The cavalry was not their choice, and the Imperial Valley—almost the hottest inhabited place in the United States, grim and wind-swept—was certainly not their choice. About 90% of them had never mounted a Shetland pony in childhood, much less a horse in manhood.

Appeal to the competitive spirit of these middle westerners met with instant response. The apparent ease with which their officers managed their horses, and the evident pleasure they derived from their mounts, contributed much to winning the recruits over to horsemanship. Too, the training films helped show the necessity for sound training methods and brought home to the men the rôle of modern cavalry in war.

The basic period proved that any man, with proper guidance, could make a good horseman. The 502 men who arrived at Camp Seeley on March 1st, augmented by 144 recruits from Fort MacArthur who checked in with us on May 24th provided a polyglot cross section of Americana. Tiny young recruits of Japanese origin tented with 250 pound selectees of Polish and German extraction. Lawyers, draftsmen, engineers, laborers and journalists marched side by side on the drill field. Chinese and Jew, agnostic and believer, butcher and banker, athlete and artist, learned to care for and ride horses.

Once their apprehension was overcome, they took rare pride in demonstrating that calmness and patience, together with courage and mental alertness, make a man master of his mount. Thirteen weeks after these new recruits arrived at Seeley, eleven of them began training a new contingent of prospective horsemen.

Introducing recruits to horses was not our only problem. We had 500 remounts who had never seen uniforms or recruits. Teaching horsemanship to conscripted men was a new experience to our officers. If the recruits voiced their disapproval of their mounts, the horses certainly expressed their antipathy to the army, its officers and recruits. They jumped out of stock cars and over corral fences, kicking up their heels and whinnying as they fled into the wide uncharted desert. As recruits faltered, slacked and erred, their mounts bucked, kicked and bit. The sun was merciless by day and the hot wind ripped and tore by night. Water was hard to get, harder to prepare for use. The only available maps to this locale, archaic and illegible, all widely differed. There were no stable facilities, no firing ranges. There were rains that made the adobe underfoot into tenuous plaster. If ever there was a conspiracy among the elements, this seemed to be it.

The transformation of unenthusiastic civilians into disciplined soldiers and desert land into training camp was dramatic. Soft, rounded thighs, accustomed to upholstered auto seats, became hard and lean in the McClellan saddle. Sagging waistlines melted. Drooping shoulders lifted. Eyes became clearer, voices deeper, steps firmer.

Stirrups and quarter straps were conscripted to duty as head stalls. Tow ropes from the motor pool were drafted as halter shanks. A muddy crossing in an irrigation ditch is now a horse swimming pool. A brush covered abandoned rice field served as drill grounds. A dried river bed was converted to a rifle range. An old barley field between two irrigation ditches was promoted to a pistol course rating. And our combat range was an old oyster bed, bequeathed us when the Atlantic abandoned this region some 60,000,000 years ago.

Today we have close to 700 men who have been turned to duty. That pasty, night club pallor has given way to a ruddy bronze. Their dismounted drill is steady, rhythmic, powerful. Their horsemanship and marksmanship does them credit. They look like soldiers. They march and maneuver like soldiers. You can trust these men.

There is no magic in this yarn—nothing but work and more work; a coöperation and an aptitude on the part of the selectees, the like of which has not been seen by the writer in many a year. There were, admittedly, moments when those selectees would have traded their right arms for an ounce of water. Certainly, officers often thought that the recruits' lack of coördination would drive them mad. The unendurable moments were many. But all that is a thing of the past. They've joined their troops and are now taking their places in the team.

What has happened in Camp Seeley must be hap-

pening all over the country in this era of quick training. But, to those of us that have watched it here, in the rigor of this desert climate under the most trying conditions, it has provided thrilling testimony that the young men of America are made of good, tough stuff. They have backbone, and they are fighters. We who have seen them leave trails of perspiration as they crawled on their bellies in floury sand, and gripped rifles made fiery hot by a 120° sun, feel that these young men have inherited their proper share of the blood that ran through the veins of our men at Valley Forge, at Gettysburg, and at the Argonne.

We now look ahead to a new camp. Camp Lockett is about sixty miles southwest of Camp Seeley. It's 3,500 feet above sea level, compared to Seeley's 52 feet below. The horses and men who trained in Seeley's fiery desert, with its gorges, gulches, mesquite, and rattlesnakes, will now maneuver in a rugged, woody brush country. The thermometer will often drop below freezing. Men who ate six to eight salt tablets to make up for the salt lost in perspiration will suddenly find themselves in a mountain paradise where nights are cool and the air is really clear. There'll be trees and green grass again and natural water.

That they will make this sudden change, acclimate themselves to Camp Lockett as suddenly and gracefully as they adapted their civilian lives to the lives of soldiers six months ago, is more than a foregone and indubitable conclusion. These men are soldiers now—Cavalry soldiers.

Modified Rifle Technique

By Major W. J. Bradley, 11th Cavalry and Lieutenant Charles E. Fife, 11th Cavalry

THE value of the Butts manual is recognized throughout the world by all dismounted organizations. The Eleventh Cavalry has modified the manual and included it in its training program.

The proximity of the Eleventh Cavalry to important air plants in the vicinity of San Diego and Los Angeles and the actual calling out of U. S. Troops on strike duty at the North American Aviation Company brought home to our regimental commander, Colonel Harold M. Rayner, the absolute need for some form of rifle manual to emulate the infantry for use in civil disturbances. As Cavalrymen, we have always thought of our horses as being the best weapon for use in riots or strikes. But due to the lack of transportation for a large number of horses, it appears that should we be called for strike or riot duty, we would be trucked to the scene of the disturbance and arrive as a dismounted unit. We would therefore have to act and use the tactics of the infantry. We are no longer armed with the trusty saber, neither do we have the bayonet. It is therefore essential that our men be taught to use the rifle as a blocking and thrusting weapon, to use it effectively and to develop a confidence in their ability.

One of the most repeated comments of observers of the action at North American Aviation Company was the fact that the 15th Infantrymen were calm and sure of themselves from the start to the finish. In forcing the crowd back the men did not hesitate and they gave the impression that they would not hesitate to make full use of their rifles and bayonets to carry out their instructions and orders.

The Eleventh Cavalry has included in its recruit training the Butts manual modified and developed for the use of the cavalryman when he is dismounted.

The recruit detachment officer found a great eagerness and adaptability of the men to this type of combat training. After explaining the upward thrust as an uppercut to the chin, the upward side sweep as a right cross, and the back butt blow as a left jab, the men associated the drill and manual to boxing. It was very interesting to see the men's efforts in this new type of drill. The majority of the men were quite awkward and handled the guns very clumsily and slowly. However, there were a few in the group of 150 recruits who became very apt with the gun in a very short while. A quick check of these men showed that they had previously been engaged in some sort of boxing either amateur or professional. Using these leaders as examples to demonstrate the slow deliberate march, the thrusting point, the quick recovery and upward side blow, and the final butt blow, the men began to coördinate their movements to resemble those of the leaders. Finally even the meek and timid began to assume that fearless, unafraid, aggressive attitude necessary in action of this type.

We have in a comparatively short time developed within recruits an organized team completely familiar and trained in this new and important type of dismounted action. This training will be continued after the recruit training program has been completed, so that the entire regiment will be proficient in the use of the rifle for quelling civil disturbances.

Employment of Scout Cars in Civil Disturbances

CARDED

By Lieutenant Glenn C. Ames, 11th Cavalry

THE use of scout cars in establishing and maintaining order during a civil disturbance is probably a new one, but in these days of labor unrest in defense industries, as well as in other industries, it may be that other Army units will be called on to open or police a strike-bound defense manufacturing plant. The writer was in command of a scout car detachment from the 11th Cavalry that was ordered to Inglewood, California, for strike duty at the North American Aviation plant June 9th, and sets forth here an account of the activities of that detail in hopes that it may prove helpful to other Cavalry units should a like situation develop.

During the week-end of June 7th and 8th negotiations between the employers and employees of the North American Aviation Company at Inglewood, California, had failed to terminate in agreement as to continuance of work in the plant pending further negotiations. Newspapers reported that the striking workmen intended to prevent further operation until their demands were met. Shortly after 11:00 P.M. on June 8th the Commanding Officer of the 11th Cavalry received orders from Fourth Army directing him to dispatch at once six scout cars with full crews and equipment to Colonel J. E. Ladd, Commanding Officer of the 15th Infantry, who was then at Fort MacArthur, California. The writer was awakened at about 11:15 P.M. and was given this order and other instructions by the Commanding Officer. The scout car platoon, some members of the motorcycle platoon, and the motorcycle platoon leader, Lieutenant H. C. Thompson, were immediately alerted. A first check showed most of the non-coms absent, this being Sunday night; however, fortunately, all appeared before the detachment moved out. It was decided to take the four solo motorcycles in the platoon and also a cargo truck to carry sleeping bags, an extra supply of gasoline and oil, reserve ammunition, etc. The armament was augmented by the addition of an extra sub-machine gun per car. At 12:40 A.M. the detachment, consisting of 41 men and two officers, was ready to move out. A hot breakfast was now ready and was quickly stowed away so that at 1:05 A.M. the detachment cleared the South Gate of Camp Seeley.

The march to the outlying districts of Los Angeles was almost without event—the road was mostly straight and flat across the desert, traffic was slight at these hours; consequently the high rate of speed of 45 MPH was maintained for this distance. Nearly an hour's time was lost replenishing the gasoline supply of the motorcycles and scout cars. The cargo truck was far in the rear when the detachment reached Redlands, California; so a filling station attendant had to be routed from his bed there. The outlying districts of Los Angeles were reached at about 6:20 A.M., and the early morning suburban traffic was encountered. This proved to be a real problem as our speed was essential. The four solos were signalled to ride behind the lead scout car and were from there motioned forward to block through-streets and arterial highways. This system worked fairly well, but required daring and cool riding on the part of the cycle riders to head into these streams of traffic and to block them with no seconds lost. As soon as the last car had cleared the intersection they would overlap the other two solo riders and take another main intersection.

Prior to reaching Fort MacArthur the motorized column of the 15th Infantry was met proceeding north toward the North American plant. Colonel Ladd immediately dispatched a police squad-car to the lead scout car with a message to join the rear of his column, which was done.

Just immediately prior to our arrival at the strike-bound plant, many minor disorders had taken place. About 6,000 strikers, sympathizers and on-lookers were milling around the east and south side of the plant. All non-striking workers who attempted to reach the plant had been turned back, a long line of pickets with placards were marching across the entrance, tear gas had been used, rioting had broken out in several places. About 400 yards south of the plant the motorized column halted and the 2nd Battalion 15th Infantry, detrucked. A message was received from Colonel Ladd to join the head of the column. Then the Infantry with fixed bayonets moved north along the railroad tracks toward the plant. The scout cars moved north on the road, which was about 10 yards west of the railroad tracks in a closed column formation, with the lead car abreast of the infantry column so as to cover their right flank on the approach. The Provisional Battalion of the 3rd Coast Artillery moved on the plant from the west and north. Just as the plant entrance was reached an order was received to seize and guard an electric power station about 200 yards east of the plant—this station supplied the electricity to the plant. Three cars were left in reserve on the road and the first three scout cars and four solos pushed through the picket line and crowd and reached the power station. The cars were placed

in a semi-circle around the station facing the strikers with the solo riders dismounted with sub-machine guns on the flanks. The area was quickly cleared and no disturbance encountered. This guard was maintained for about 2 hours until an infantry platoon relieved us. Meanwhile, the plant entrances had been cleared and the strikers moved about 30 yards east. The other three scout cars joined and all cars went into reserve within the plant entrance.

Early in the afternoon it was decided to move the strikers still farther east so that all streets would be clear for traffic. A line of skirmishers with little interval moved slowly forward pushing the crowd back. The scout cars moved forward in a line formation with about 1 yard interval, immediately behind the infantry line. From time to time scout cars were detached and sent in rear of houses and garages nearby to prevent stragglers breaking through the line toward the plant. The remainder of the afternoon was spent in a constant patrol by sections of the nearby streets to the east so as to keep the streets cleared. The cars of sections were abreast and there was about a half-block distance between sections.

By this time the strike had suffered a severe set-back and interest in it decreased from then on. Many employees returned to work that night. That evening and the following early morning the scout car detachment was constantly occupied in convoying workers to and from their homes so as to prevent vindictive violence by reported "goon" squads. Several cars of workers all going to or near some particular residential area were grouped and one or two scout cars assigned to them for protective reasons.

By the next morning, June 10th all pickets had been moved to locations at least one mile from the aviation plant. Road blocks on seven key street approaches had been set up for the purpose of diverting all traffic from the plant area and to prevent pickets forming any nearer the plant. The mission of forming a visiting patrol to check all of these road blocks periodically was given the scout car detachment. These road blocks were in all directions from the plant and were all at least one mile away. Each section of scout cars was assigned a two hour shift on constant patrol. Report of any unusual circumstance was made by radio to the 15th Infantry C.P. This type of patrol was continued until June 14th. Additional patrols were occasionally sent out in the worker's residential districts to forestall any activity by "goon" squads.

From June 17th to the date of return to Camp Seeley, July 2, the detachment was attached to the 3rd Reconnaissance Troop and operated on an Interior Guard set-up alternating with the 3rd Reconnaissance Troop. A section of cars and their crews were kept in readiness to move out at any time if needed.

Conclusions

The writer believes certain conclusions may be drawn from these scout car activities:

Scout cars in domestic disturbances of this type are extremely useful. However, they are of importance only as a supplementary force, I believe. The trooper on his mount and the infantryman with his fixed bayonet are still necessary to actually disperse or hold in check a mob. Unless a sufficient number of scout cars were available to form a solid line to the front and flanks, members of the mob could infiltrate, and rounding them up with crews mounted in vehicles would be next to impossible. The chief value of the scout car in civil disturbances is the psychological effect it has on the mob. To individuals not accustomed to seeing military vehicles the sudden appearance of an armored vehicle bearing two .30 caliber and one .50 caliber machine guns and two sub-machine guns (these were held by the crews so as to be visible at all times) is a formidable sight. The complete lack of desire on the part of all the strikers to engage in any illegal activity while a section of scout cars was in the vicinity was very noticeable. Scout cars in a tight line formation moving slowly forward behind an advancing line of skirmishers caused a very quick withdrawal of pickets and strikers.

The scout car is very valuable while being used as a visiting patrol. It affords a mobile force of great fire power that is present at frequent intervals at all outposts and a means of rapid communication to the C.P. in case of a disturbance. Likewise the scout car serves very well in providing protection to workers to and from their homes.

The solo motorcyclist is useful chiefly as a messenger. He may be too quickly unseated by a member of the mob to be of great value in dispersals; this is true because of the slow rate of speed he must maintain while assisting in the advance.

It is suggested that each rifleman be equipped with a bayonet as an adjunct to the rifle butt to keep members of the mob from attempting to climb on the cars while they are stationary or moving slowly.

In such a civil disturbance full use of civilian police facilities should be made. Squad car two-way radio sets as well as the police squad cars themselves and also radio equipped traffic control police motorcycles are valuable to supplement your own system of communication.

It is also evident that in order to travel at high speeds across metropolitan areas a police escort is almost a necessity unless the solo motorcycles could be equipped with sirens.

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CAVALRY SELECTEE

--A Letter to His Draft Board

June 20, 1941,
Headquarters Troop,
11th U. S. Cavalry,
Imperial, Calif.

Mr. E. Z. Croxall, Chairman,
Local Draft Board 236,
Los Angeles, Calif.

Dear Old Draft Board:

Before you altogether forget that I was ever No. 870 in your files, I had better answer your kind letter asking how I like the army.

I guess I am a soldier now. They tell me I am. After leaving your office a few weeks ago things moved pretty fast. I was examined; finger-printed; queried; classified; probed; prayed over; sworn in; shipped to Fort Mac Arthur where I was fed; uniformed; vaccinated; given an intelligence test and another examination; mildly drilled; innoculated and shipped up here to Camp Seeley.

Boy, do I wish I had known the things I know now! How much easier it all would have been!

I expected the business! The full treatment! Getting pushed around, sleeping on hard cots, beans three times a day, drilling until I dropped, tough top sergeants and general purgatory.

There's no wonder why I, and all of the thirteen men, who left your office felt that way. We'd been scared. The know-it-alls who had served before clucked-clucked and pitied us. Everyone that knew we were going to be inducted into the army gave us a different way of evading the draft, from taking dope to pretending to have mental or physical incapabilities.

We heard of men fainting from pain when they stuck them with needles and we heard about men losing ten pounds a week from drilling.

So we went down town in a blue funk at 7 AM. None of us had slept the night before. Who sleeps when he celebrates a farewell from civilian life and a certain freedom, and prepares to get up in time to report at 6:30 in the morning? That's the time I usually went to bed.

We had said goodbye to our sweethearts and pals the night before. How helpless and awkward we were saying goodbye to mother that morning! And often enough, we all know, mother didn't stand up to it and let go with a few leaky tears. That didn't help our morale any.

Taking stock of each other in your office, we wondered which of these fellows might be our tent mate, maybe our commanding officer in our new life. All of us were neighbors, yet none of us knew the other's name.

On the train we didn't help each other. Some of us lamented the laws that took us from our work, our careers, our homes. Others foresaw the worst at the Main Street station.

Nothing happened down town. A uniformed man steno took our histories as we gave them; Doctors looked at our eyes, ears, noses and throats; examined our posture. Our fingerprints were taken. I've had tougher examinations from life insurance doctors. Really, the examinations given us after we got our first questionnaires, weeks ago, had been much stiffer. What I mean was that the worst was behind and we didn't know it. We were shaky, trembly.

A bus took us to Fort MacArthur where we stayed for two days before being sent here by train.

At the Fort we let ourselves get scared all over again. By being scared I don't mean one of us cried or slunk around. But did we let ourselves in for a bad time by believing the fellows that had been there a whole day already when they told us that vaccinations hurt. How they laid it on! Actually, it hurt less than pulling out a hair.

And yet, get this, after we were there a day we were pulling the same gags on the fellows that had just come in. And then we were listening with beating hearts to the men who had been there for two days. What's that crack about man's inhumanity to man?

Here's the pay-off. We like the army, although few realize it. Most of us have never had so much fun in our lives. When I was a young 'un the folks paid good money to send me to military school. In addition to that they paid for my uniform and sent me spending money. Never enough but that's another story. The point is that this army business has that school beat a million miles from Sunday. At the school I had to shine every corporal's shoes, clean every Captain's sword. Here no one can ask me to do any work but my own.

I've been the despair of shoe clerks all my life. These feet are something Darwin would have loved! Now, for the first time, I've got comfortable shoes, double-E, if you please. I'd pay $12.50 plus tax for these at home and love it. Here I get them free. I can wiggle my toes in my shoes . . . ecstacy!

The food is good, don't let anyone kid you. No anchovies, or champagne, or quail. But plenty of meat, plenty of vegetables, plenty of fruit, and all the milk you can drink. Sure, they don't give you napkins and I miss that. But a certain group of men pledged their lives, liberty, and sacred honor to bring about this here form of government so, me, I'll do without napkins.

I've never seen a man get a kick in the pants, or a slap in the face here, and I've seen that in grammar

school and high school. Officers are tough like football coaches. They simply insist that you do it the right way. If you don't you do it over again. But, boy oh boy, are you a simple minded farmer if you can't get it the way they explain it!

Take a rifle for instance. I saw soldiers drilling with their guns and I thought, here I go! Out! I can't do that, not me. But they took each step so patiently, so thoroughly, and showed you so many times, you just can't help but get it. Yup, even I can do a pretty snappy shoulder-arms, snap, click, bangity, bang.

As I crawled into bed, the night before I left for the army, I said a silent goodbye to sheets, pillows, mattresses, and springs. Another illusion! We all have beds, and the beds all have springs, and the springs all support mattresses in special mattress bags, and we have a sheet over the mattress and another under the blankets and their number is four, which is plenty.

Do I sound like a Pollyanna? There's lots about army life I could do without. They explain some things over and over again, until you get bored stupid. But when they explain other things over and over again and you still don't understand, you realize it is boring other fellows silly because they got it the first time.

I miss home, and mother and sweetheart, and typewriter, and dog, and icebox, and sleeping late, and the good old custom of shaking hands instead of saluting, and sweetheart, and voting, and phoning my friends to kill time, and mother's cooking, and making more dough than $21 a month, and the corner bar, and sweetheart.

But you can't deny the thrill of this thing. I am now associated with a pretty big outfit. A gent called Roosevelt is one of the top men in this concern. When I say "we" I speak of an organization whose assets run into the billions. We have pride. A tradition has been made for us that we really enjoy. The work started by George Washington and his crew, and perpetuated by men like Lincoln, is now our work and we daily contribute something to it. You don't have to be a flag waving patriot to get a spine tingling thrill, out of realizing that your daily stint, no matter how small, is helping to see "that this nation . . . shall not perish from the face of the earth."

Beefing seems to be an army tradition. We beef about the chow, the drills, the bugler, the uniforms, the climate, the ammunition. The best men seem to be the best beefers, but that's not just the army. Show me a shop or factory or store where the employees don't grumble behind the bosses' backs. I always did, working in a drug store or anyplace else. That's human nature. So we grumble about everything in the army; but let a sailor or a marine start tearing down the army, and watch us fight!

And don't think for a minute I got it particularly easy. In infantry you take care of yourself and your gun. In the Coast Artillery you take care of yourself and your cannon. But in this here Cavalry you take care of your horse, his hoofs, blanket, bridle, saddle, your rifle and pistol, and in your spare time, yourself. It's hot here, often 120 and the way they watch to see the sun doesn't get too much for us is like a sanatarium watching its patients.

In a way it's like a game. The rules are explained over and over again. You all have the same chance. Plenty of time. And you go to it, play the game, and learn a new one next day.

So they tell me we're soldiers. We have uniforms and a military haircut. We know how to salute, get on and off a horse, trot, gallop, make a bed, clean and twirl a rifle, get up for reveille, grumble about orders, appreciate a letter from mother, talk about our civilian careers, drink from a canteen, and click our heels. We guess we must be soldiers. But we feel just like they've let us play in their game.

You asked me how I liked the army and I'm telling you I like it. If I had known what I know now ten years ago I'd be a veteran in the army today. I get a bigger kick out of a bottle of soda pop in the Post Exchange than I used to get from a Martini at the Brown Derby. I've made more friends in the last two weeks than I did in any two years. My complexion has never been better, my appetite heartier, or my body tougher. I sleep good. I have no worries about money, rent, business competition, things to do tomorrow. I'm spending my $21 a month on pipe tobacco, candy bars, and laundry. Anything else I want I wangle from the supply sergeant.

The sun bids me good morning and stays with me all day. The gentle moon and her attendant stars are overhead when I open my eyes in bed. There is much to do. And there is companionship in the doing of it. Life is good.

Cordially,

PRIVATE EUGENE GACH,
Formerly No. 870.

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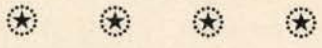


DEADLINE DATE NEXT ISSUE, SEPTEMBER 1ST

Motorcycle Platoon in Dismounted Attack

By Lieutenant Tom E. Matlack, 4th Cavalry

THE motorcycle troop must be capable of accomplishing a wide variety of missions, one of the most important of which is the prompt reduction of road blocks and other isolated points of resistance. This requires that full and efficient use must be made of organic arms and vehicles.

Normally this will be a platoon mission, so consider first the organization and equipment of that unit.

One officer and thirty-six men are formed into a platoon headquarters and two sections. The platoon headquarters includes one scout car radio equipped, carrying two thirty caliber water cooled machine guns and a fifty caliber machine gun. The crew, besides the platoon leader, are a car commander, driver, radio operator, gunner and rifleman. Also in platoon headquarters are a corporal and three intelligence scouts and the platoon sergeant, all mounted on solo motorcycles and armed with sub-machine guns. Each section is composed of two rifle squads led by a sergeant who is mounted on a solo motorcycle and armed with a sub-machine gun. The squad is composed of a corporal and three privates armed with rifles and two drivers armed with sub-machine guns. The squad rides in two tricycles, sidecar motorcycles or bantams.

A summary of the arms shows one .50 and two .30 caliber machine guns, sixteen sub-machine guns and seventeen rifles, besides pistols.

When the platoon is dismounted, the vehicles, other than the scout car, will of necessity be immobile. Therefore, the platoon must take cover before it is dismounted. One man per squad with a sub-machine gun should be left as vehicle guard.

In order to dismount both .30 caliber machine guns and employ them in the attack, one rifle squad is designated "the machine gun squad." After dismounting and leaving one man as a vehicle guard there are four men in this squad besides the corporal. With the gunner and rifleman from the scout car crew as "the number ones" for each gun and the four members of his squad as "number two" and "number three" the corporal of the machine gun squad forms two gun crews. This still leaves the radio operator, driver and car commander in the scout car, allowing it to function as a command post and for the car commander to employ the .50 caliber gun mounted on the car. There is also a sub-machine gun still in the car.

Where the terrain and the situation permit, the guns remain on the scout car for the dismounted approach and the car follows the machine gun squad by bounds. When the guns are emplaced the scout car should move behind the nearest mask in rear of the gun position. In placing his car the car commander selects a position where he can supply ammunition to the dismounted guns, where messengers from the platoon leader can locate him, and where he can employ the fifty caliber gun in the most probable direction for hostile mechanized attack.

To illustrate this employment take the following simple, tactical problem.

The 1st Platoon of troop E, a scout car platoon on a route reconnaissance mission has been stopped by a road block covered by an infantry platoon with an antitank

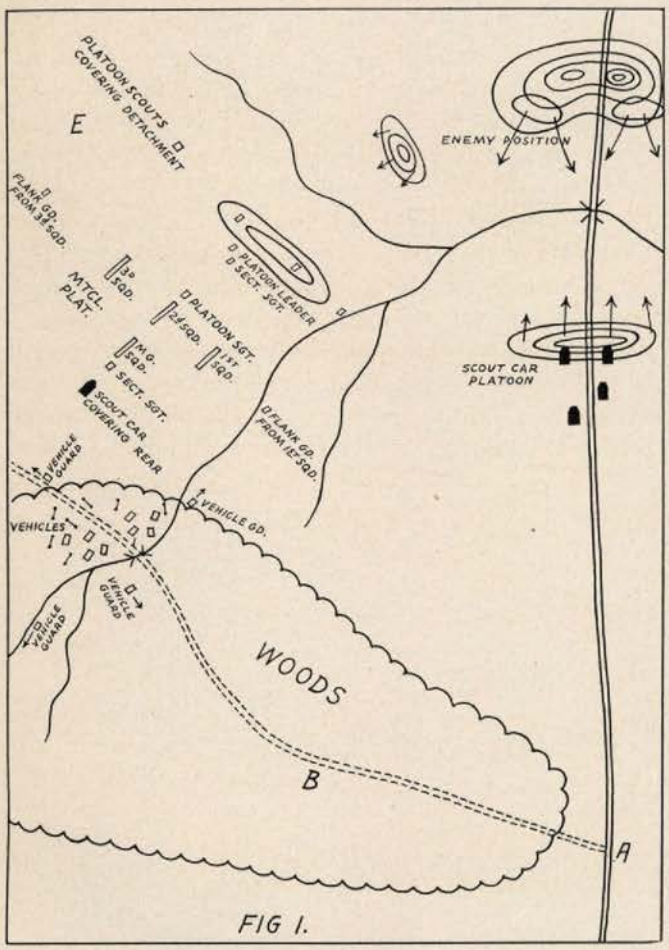


FIG 1.

gun attached. The 1st Platoon of troop G, a motorcycle platoon, has been sent rapidly forward to reinforce the scout car platoon. The platoon leader of the motorcycle platoon mounted on a motorcycle and with one scout moves forward at high speed leaving his platoon sergeant to bring the platoon forward. Upon arriving at the location of the scout car platoon he dispatches the scout to the rear to have the platoon sergeant hold the platoon at the road junction at A, Figure 1. He reports to the platoon leader of the scout car platoon who describes the situation and assigns him the mission of attacking the enemy right. They make plans for coordination of their attack and for radio communication. The motorcycle platoon leader returns to his platoon, puts out a point of two motorcycle scouts and moves forward on trail B covering the advance of the scouts with the scout car. Upon reaching the edge of the woods he signals "dismount" "action front," and immediately dismounts himself and runs forward to a point where he can pick the first objective for his covering detachment. The scout car remains where it can move forward, but all other vehicles are quickly put under cover. The scouts join the platoon leader and are immediately dispatched to the first objective as a covering detachment. The platoon sergeant forms the platoon in approach formation and moves it forward keeping contact with the platoon leader. The scout car follows the machine gun squad by bounds. The platoon leader moves the scouts forward by bounds until contact is made with the enemy right. After making his own P.R. he assembles the squad leaders and gives his attack order. The machine gun squad is to emplace on hill C, Figure 2, and deliver fire on the outpost at D and then the enemy right. The first squad will attack D and then the enemy right. The second squad is to move to the left of the enemy outpost at D supporting the movement of the first squad and then attack the enemy rear. The platoon leader will follow the first squad with the third squad in reserve. The machine gun squad is to displace forward to D when that point is taken. The scout car moves behind the mask of hill C and sights its fifty caliber gun to cover the area toward E. As the assault echelon reaches the covering detachment each scout of the covering detachment joins the squad whose advance is nearest him. This is also true of the scout

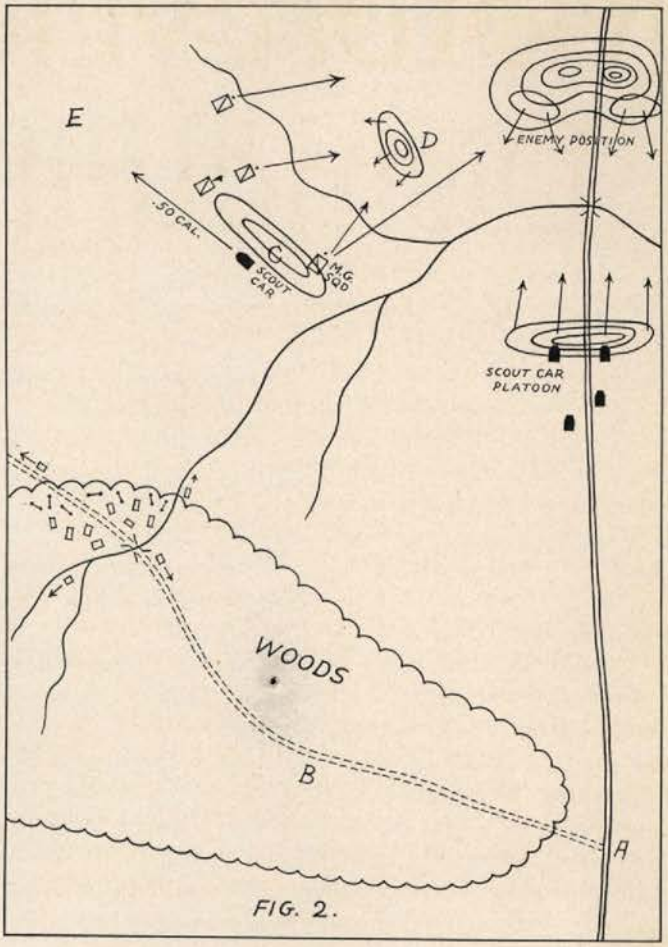


FIG. 2.

nearest the machine gun squad. This will give each squad three rifles and two submachine guns besides the rifle carried by the corporal. The men with submachine guns are used on the flanks of the squads and conserve their ammunition until the assault.

After the assault the machine guns may be brought forward rapidly on the scout car to organize the position.

By employing his unit in the above manner the platoon leader has obtained maximum use of all his weapons. In addition, he has had radio communication in order to coördinate his attack with the scout car platoon and he has had close ammunition supply for his machine guns and good antimechanized defense.

"The Cavalry Board invites any individual, whether or not a cavalryman, to submit for consideration constructive suggestions or ideas relating to new equipment, improvement of standard equipment, or to any problem or project under study by the Board. The Board will also welcome suggestions as to new problems that may properly be considered. Communications should be addressed to the President, Cavalry Board, Fort Riley, Kansas."

Mobile Corps Headquarters in the Field

A DEFINITE and revolutionary step toward the good of mobility was recently taken when Major General Walter K. Wilson, Commanding the III Army Corps, ordered his headquarters to take the field in trailers and to leave all heavy tentage behind.

This was made possible through the idea conceived by Lieutenant Colonel Garnett H. Wilson, G.S.C.,* that suitable trailers could be built at little cost from salvaged motor transportation.

Previous experience had indicated that the use of trucks as offices for the Corps Headquarters required too many trucks and while so used nullified their use for cargo transportation.

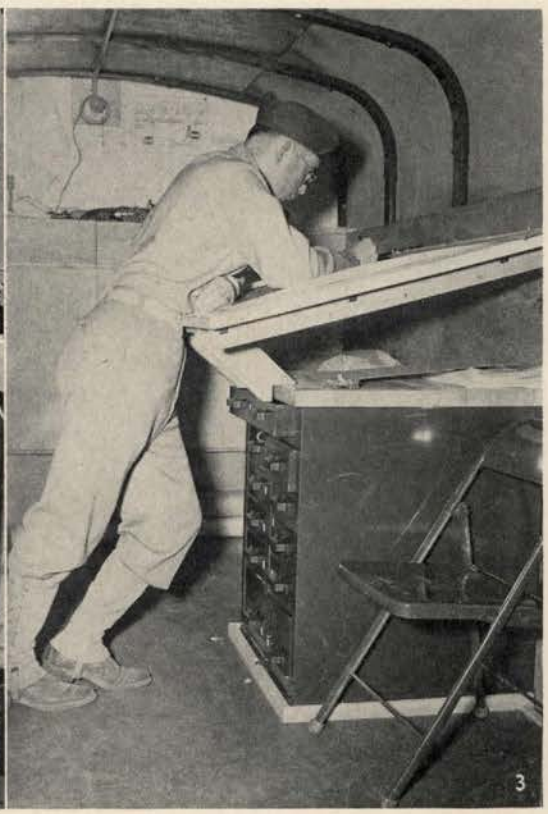
Colonel Wilson was given the mission to produce light trailers which could be towed by any standard army vehicle from the command and reconnaissance car (one-half ton) up, and capable of being moved by hand for short distances. Quartermaster and Ordnance units attached to the III Army Corps were made available to assist in the completion of the project.

Twenty-three two-wheeled trailers were provided as offices for Headquarters and Headquarters Company. Two trailers serve as kitchens, and a condemned ambulance has been turned into a mobile refrigerator. Built in Army shops primarily of durable parts from worn-out trucks, these trailers have proven extremely mobile, and at the same time they afford ample space for combination working and sleeping accommodations. Each trailer carries the equipment necessary for the efficient operation of the staff section to which it is assigned. Equipment includes field desks, map boards, file cabinets, tables, and typewriters. All trailers are wired for electric lights and telephones, and outside connections can be provided through outlets without delay. Each trailer eliminates three or more heavy tents.

The body of the trailer, 12′ by 7½′, is mounted on the salvaged chassis of a 1½-ton truck. The fore part of each chassis is bent to form an apex in which is welded a pintel ring fashioned from a salvaged truck axle which forms the trailer hitch. Truck springs are utilized, and dual wheels are retained to add to maneuverability.

The covers, which approximate in size those of 2½-ton cargo trucks, are of canvas. These covers open into awnings during stops; and when concealment will permit, with trailers parked side by side the awnings

* (Cavalry.)



1—Portion of Corps Headquarters. 2—G-2 set-up. 3—Interior of G-3 trailer

can be made to overlap into additional office space. Canvas curtains of special design are suspended from the awnings, making the enclosed space weather and lightproof, as conditions demand.

Stability during stops is obtained by means of rests placed at each corner of the trailer. These pedestals are of galvanized pipe, with a square metal base welded to one end. The desired height and balance are found by sliding the pedestal through a metal hoop bolted onto the trailer, then placing a cotter pin or bolt through one of the many holes drilled at regular intervals through the pedestal.

The trailers, which can be moved short distances by four to six men, can easily be camouflaged. They normally are drawn by the Corps Headquarters integral transportation.

"For years," says Colonel Wilson, "many of us in the Army have been greatly concerned about the bulk and unwieldiness of the tent equipment heretofore required for the establishment of headquarters in the field. While this is by no means the final solution to the problem, I am certain that it is a long stride in the right direction. The elimination of heavy tentage and the consequent reduction in the weight and bulk of field equipment, the minimization of labor and time required to make and break camp, and the ability to move quickly from place to place with the entire establishment, are the factors which may spell the difference between the success and failure of an operation. Due to the ingenuity and efficiency of the 69th QM Bn., commanded by Major Joseph Williams (Cav.) QMC, Company F, 58th QM Regt., commanded by Captain R. R. Parks, and the 4th Ordnance Company, commanded by Captain Ellis, it has been possible to manufacture these trailers at an approximate average cost of $60."

The following remarks were made by Lieutenant General John L. DeWitt, Commanding General, Fourth Army, at a critique of a Command Post exercise at Hunter Liggett Reservation on June 16, 1941:

"It is generally accepted that tentage as issued is not satisfactory. Its shape and color make it difficult to conceal. . . . Trailers, rather than trucks, should be used. . . . The trailers used by the III Army Corps seem very good, and I suggest that commanders of the several units, brigades and divisions upwards, examine these with the view of seeing whether or not they can improve on them."

Qualities of the General

Wu the Master said:

"The leader of the army is one who is master of both arms and letters. He who is both brave and tender can be entrusted with troops.

"In the popular estimation of generals, courage alone is regarded; nevertheless, courage is but one of the qualifications of the leader. Courage is heedless in encounter; and rash encounter, which is ignorant of the consequences, cannot be called good.

"There are five matters which leaders must carefully consider:

"First, reason; second, preparation; third, determination; fourth, vigilance; fifth, simplicity.

"With reason, a multitude can be controlled like a small number.

"Preparedness sees an enemy outside the gate.

"Determination before the enemy has no thought of life.

"Even after a victory, vigilance behaves as before the first encounter.

"Simplicity ensures few regulations, and preserves order."

—The Sayings of Wutzu.

Noncom Quiz

By Major Logan C. Berry, Cavalry★

EXPLANATION

The subject matter of this test is the mounted and dismounted ATTACK by small, horse cavalry, units.

Each question is followed by several possible answers.

Questions may be answered by underlining the part of the answer which you think is applicable.

You may check your answers against solutions which appear on page 91. (Don't peep!)

ATTACK QUIZ NUMBER 1

1. QUESTION: What is the usual formation adopted by a platoon which is participating in a mounted attack as part of a rifle troop?

ANSWER: *a.* Line of squad columns.
b. Line of half-squad columns.
c. Line of foragers (troopers).
d. Column of squads in line.
e. Column of squads each in line of foragers.

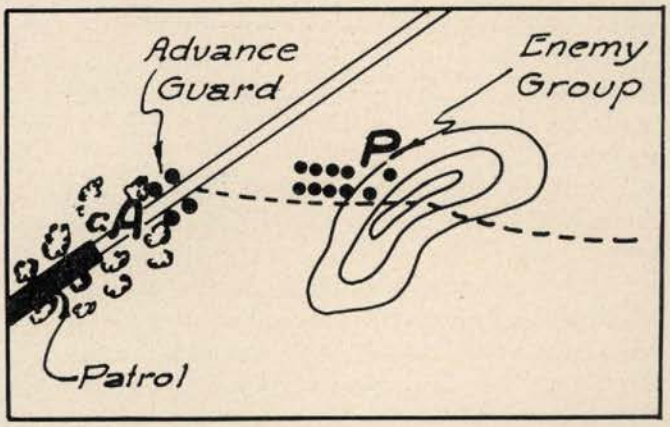
2. QUESTION: What is the usual formation adopted by a rifle platoon participating in an approach march, dismounted, as part of a troop?

ANSWER: *a.* Line of skirmishers.
b. Column of squads as skirmishers.
c. Column of troopers.
d. Line of squad columns.
e. Line of half-squad columns.

3. QUESTION: Your platoon has been ordered to dismount and prepare for a dismounted approach march as part of a rifle troop. Yours is the only platoon operating in your zone of action. You have given the command "scouts out" in order to provide security for the approach. Which is the best method of controlling these scouts?

ANSWER: *a.* Each scout should be controlled by his own squad leader.
b. The scouts should be operated as a dismounted covering detachment, either basing their advance on the center scout who is controlled by the platoon leader, or by appointing a dismounted covering detachment commander, and controlling through him.
c. The scouts should be assigned zones of advance.

4. QUESTION: You are commanding a patrol of one platoon on reconnaissance and have been ordered to act aggressively to obtain identifications. You have employed an advance guard of four men while moving through the woods at A. Emerging from the woods your advance guard has called your attention to an enemy group of ten mounted men moving at the walk in column of twos along the trail near P. It appears that within the next minute the enemy group will disappear over the crest of the hill near P. No other enemy is in sight. What action do you take?



ANSWER: *a.* I launch my squads to the pistol attack successively, with squads echeloned from left to right (1st squad less advance guard).
b. I launch the leading two squads (less advance guard) to the pistol attack in one wave and have the third squad follow in trace of the leading wave.
c. I launch my squads successively to the attack with each squad following in trace of the other initially.

5. QUESTION: In the situation outlined in question 4, what does the platoon leader do?

ANSWER: *a.* He accompanies the leading wave.
b. He accompanies the final wave.
c. He leads the first wave.
d. He leads the final wave.

6. QUESTION: You are the scout of a squad which has been advancing as part of a platoon in a dismounted approach march. You have been acting under the platoon leader's control, moving by bounds. On taking cover at the end of a bound you note that enemy fire has suddenly become heavier, that the platoon leader has deployed the platoon as skirmishers under cover and that your squad leader has joined the platoon leader for instructions. What phase of the attack is just beginning?

ANSWER: *a.* Reconnaissance.
b. Assault.

★Prepared under the direction of The Department of Tactics, The Cavalry School.

c. Fire fight.
d. Pursuit.
e. Envelopment.

7. QUESTION: During a combat situation a dismounted platoon has been directed to advance upon a terrain objective about 1,000 yards to its front. Which of the following courses of action should be adopted?

ANSWER: *a.* It should move out at once in a continuous advance and should employ all possible speed.
b. It should move through a series of intermediate objectives, assigned by the platoon leader, who reorganizes at each intermediate objective.

8. QUESTION: A platoon is conducting a dismounted fire fight with its squads abreast. The platoon leader is near his center squad. One messenger is with him, other members of the platoon headquarters having become casualties. The platoon leader notices that the flank squads have drifted out of their assigned routes of advance and are now too far to each flank to permit proper control of the platoon. What should the platoon leader do to regain control?

ANSWER: *a.* He should send the messenger to the right squad with orders to move the squad into its proper zone of advance, and after his return, send the messenger to the left squad with similar orders.
b. He should send the messenger to the right squad, as in *a*, and should appoint as another messenger a nearby member of the center squad to carry similar orders to the left squad.
c. He should send the messenger to the right squad, as in *a*, direct the center squad to continue in its proper zone and then move, temporarily, to a point near the left squad from which he can supervise the further advance of the left squad.

9. QUESTION: Which is the proper method of advance for a squad in each of the following circumstances?

ANSWER: *a.* A squad advancing over rough ground which affords cover for individuals at intervals of 5-10 yards, advances by:
(1) Infiltration.
(2) Rushes.
(3) Side slipping.
b. A squad advancing over smooth ground cut by a transverse ditch and folds in the ground at distances of about 30 yards, advances by:
(1) Infiltration.
(2) Rushes.
(3) Side slipping.
c. Where two squads are advancing during the fire fight and Squad No. 1 is able to continue the advance, while Squad No. 2 is held up by ground devoid of cover to a distance of 100 yards to the front—Squad No. 2 advances further by:
Infiltration.
Rushes.
Side slipping.

10. QUESTION: Why is it necessary to prescribe that the support platoon of a troop making a dismounted attack maintain a distance of 75-100 yards from the leading wave, providing cover is available?

ANSWER: *a.* It makes the formation less vulnerable to enemy fire.
b. It permits the support wave to assault the objective at practically the same time as the leading wave and thus build up a numerical superiority thereon.
c. It makes the troop easier to control.

Solutions to Questions

1. Line of foragers (troopers).

2. Line of squad columns.

3. The scouts should be operated as a dismounted covering detachment, either basing their advance on the center scout who is controlled by the platoon leader, or by appointing a dismounted covering detachment commander, and controlling through him.

4. I launch my squads successively to the attack with each squad following in trace of the other initially.

5. He leads the final wave.

6. Fire fight.

7. It should move through a series of intermediate objectives, assigned by the platoon leader, who reorganizes at each intermediate objective.

8. He should send the messenger to the right squad with orders to move the right squad into its proper zone of advance. He should direct the center squad to continue in its proper zone and then move, temporarily, to a point near the left squad from which he can supervise the further advance of the left squad.

9. *a.* Infiltration.
b. Rushes.
c. Side slipping.

10. It permits the support wave to assault the objective at practically the same time as the leading wave and thus build up a numerical superiority thereon.

Our Cavalry Regiment in the Philippines

By Captain H. J. Fleeger, 26th Cavalry (P.S.)

A JUNIOR OFFICER, one of a recent group arriving from the States, joined the 26th Cavalry (PS) recently, and upon landing in Manila, asked with great enthusiasm . . . "Captain, do you have any Filipinos in your regiment?" It happens that all of our troopers are Filipinos, and the incident impressed me as possibly being indicative of the average junior officer's acquaintance with our regiment in Luzon. I recall my surprise at finding this regiment similar to my former assignments yet unusual in many respects.

With that in mind, and hoping that my informal remarks may prove informative for those new officers attempting mentally to catalogue the regiments and their stations, I intend to discuss briefly those features of our personnel, organization and training that seem most interesting.

Our officer personnel, not yet complete, includes both Regular and Reserve, two of the Officers being Filipinos now on D.S. with the Philippine Army. We have just evacuated to the United States all of our dependents, and Fort Stotsenburg is now one of the few regular stations inhabited only by enlisted men and officers. When not in the field, we are grouped in sets of quarters, with rather involved transactions taking place daily as to who likes what to eat, how often, and how much to pay the cook and house-boy.

Enlisted personnel allotted by the War Department, including a recent increase which activated Troops "C" and "G" is only about one half of the strength of the Cavalry Regiment, Horse. The band and Special Weapons Troops are inactive, and strength of all organizations reduced proportionately.

The regimental training program parallels that of our other regiments, and I will only note those features that are peculiar to this Department. In our training the matter of beach defense receives special consideration. Each range season includes firing on towed targets on Subic Bay. During this period the troops camp near the bay, and become familiar with fire effect over water and the various effects of sun and light. Firing at water towed targets is followed by frequent beach problems, including use of water obstacles; selection, occupation, and camouflage of machine gun positions; and coördination with supporting or supported units.

Marching in Luzon is an additional feature of regimental training that must be continuously emphasized. Because of the extreme heat during dry season, much of the marching is done at night; either just before, or just after, hours of darkness. Troops must develop all phases of march discipline to a high degree so that organizations and equipment move into, or out of, bivouac, or follow indistinct trails, without confusion, and without lights. Some of the marches are over mountainous trails, with pack transportation only, and packers are both highly efficient and numerous in each organization. I have seen a pack load thrown only on one occasion since joining the regiment. That occasion was rather humorous. During a night march one of the mules of my troop galloped full speed through my entire column dangling a heavy Coleman lantern box on a 30 foot lash rope. The dispersion was immediate; and after arrival in bivouac other troops commanders were rather hesitant about the loan of a serviceable Coleman for my Troop Kitchen. I will leave the subject of marching, adding that the distance marched and the rate have to be reduced somewhat in order to hold animal condition.

The matter of moving portée is another item of training. Organizations are frequently portéed to distant points for reconnaissance, or to occupy positions. At present we are using five ton F.W.D's.—6 animals per truck, loaded with ramps, and with men and equipment on one and one-half ton trucks. The regiment is adept at loading under all conditions of light and weather, and a remount newly arrived from Nebraska soon learns to move up to the ramp promptly, or be bodily loaded by several Filipino horse-shoers, whose size is greatly outweighed by thei renthusiasm.

Difficult trail marches with long hours in the saddle and constant work with a bolo to cut through the jungle, are a frequent occurrence, but the Filipino soldier, being native to Luzon and a great Cavalry enthusiast, needs little training along those lines. Before closing my remarks I will add that the 26th Cavalry provides an experience for the Cavalry officer complete with interesting events, and valuable in practical lessons. I hope that the new Cavalry Officers will become interested in, and attempt to know, their only regiment not stationed within the continental limits."

Please address all communications for The United States Cavalry Association and The Cavalry Journal to 1624 H Street, N.W., Washington, D. C.

Unit Training Activities

5th Cavalry—Fort Bliss, Texas

COLONEL H. J. M. SMITH, *Commanding*

Since the first of May the Fifth Cavalry has spent the greater part of the time in the field in intensive exercises designed to more thoroughly condition and train the command for large scale maneuvers to be held later in the summer.

During the first ten days of the month troop training was stressed, followed the next week by the Reënforced Squadron and Separate Troop training phase. During this period all units were engaged in known distance firing, and combat firing problems. Special Weapons Troop, Headquarters Troop and Machine Gun Troop fired problems for the first time on the moving target course at Castner Range, and despite the fact that most of the personnel were not familiar with this course, very satisfactory results were obtained.

The following week found both squadrons reënforced in the field on separate overnight exercises.

On May 26th the Regiment took the field on its regular monthly overnight march and field exercise.

Squadron training tests conducted by the Division were held on May 29th. During these tests, the strongly reënforced Squadrons were assumed to be a flank guard for the Division which was concentrated at Fort Bliss, and was beginning a movement toward the East. The mission of the Squadrons was to protect the Division as it cleared the I.P. at Fort Bliss and to rejoin approximately four hours later at a designated point when the Division had cleared the Post. During these tests Squadron Commanders were authorized to call upon the 120th Observation Squadron for any mission desired and communication between the Squadron and the planes was carried on by radio.

May 30 was observed as a holiday, and the following day, an inspection of all animals and vehicles was made by the Regimental Commander prior to going into the field the following week on Regimental Field Exercises under Brigade control.

During the first week in June, the Regiment was in the field under Brigade control. A series of Four Problems as directed by Third Army had been set up by Brigade which covered various phases of training of a Regiment operating as part of a Brigade. The exercises included Attack, Defense, Occupation and Organization of a defensive position, withdrawal under cover of darkness to new defensive positions and night movements on roads and cross country.

During the second week in June two more problems were completed by the Regiment. These problems involved Squadron versus Squadron, in Attack and Defense. Squadron versus Squadron, Reconnaissance and Counterreconnaissance.

These problems brought out the following points: Necessity of thorough reconnaissance of a position by the commander both before and after occupation has been completed, and the need of constant patrols to the front and flanks during the occupation of the position, necessity in attack of concentrating all fire power available and making the attack on a narrow front. They brought out the difficulty encountered in maintaining control of units, once they have been committed to combat and the necessity for frequent reorganization of units down to and including the squad.

The soundness of the Tables of Organization with reference to the composition of Squadron Headquarters was illustrated. When a Squadron is operating under combat conditions over a period of several hours, it is very necessary to have a complete Squadron Headquarters to effect and maintain proper control over the units engaged.

Training for the third week in June included two days of instruction for squads from each rifle troop in the operation, and maintenance of Cal. .30 and Cal. .50 Machine Guns and the 81-mm. Mortar. This training was provided with the view of training Gun crews in each unit to operate these weapons in case of emergency or if they were located during combat with no gun crew to operate them.

The Regiment participated in a Division Review held on Wednesday, June 18, prior to taking the field on a Division exercise which lasted for 48 hours.

Brigade field exercises were continued the following week. The Brigade left the post on Tuesday, maneuvered north of the post for two days and on the third day joined the Second Brigade in another two-day Division Problem. In this second Division Problem the situation was made more realistic by the presence of the 56th Cavalry Brigade who outlined the Red, enemy force.

From experiences gained during the intensive field training period we consider it essential that the Cavalry Division should have in its organization a Remount Troop whose duty it would be to provide trained and properly conditioned mounts for units engaged in maneuvers or actual combat and whose animal strength had been reduced by necessary evacuation of sick or wounded animals.

Experience has shown that due to the continual change in the strength of the Regiment it is advantageous in the saving of manpower for the regiment to have a rest stable to provide for the maintenance of animals not being used by units. This allows more men to be

available for troop duty and provide for more efficient care of surplus animals.

The Regiment this month honors the retirement of Master Sergeant Robert Weir, Regimental Sergeant Major who retires June 30, after 30 years of service, 27 of which have been with the 5th Cavalry.

During the time we were in the field and the few days spent in the garrison instruction was given to the entire command in Gas Mask Drill and identification of chemicals, two surprise simulated gas attacks were made on the bivouac of the Regiment during field problems.

All officers of the command have received instruction in the 81-mm. Mortar and the .30 Cal. and .50 Cal. Machine Guns. Examinations were given pertaining to these weapons to test the officers' profficiency in handling these weapons under combat conditions.

Thirteen Reserve officers assigned to duty for one year have joined the regiment during the past two weeks and 84 new men of recruit detachment No. 3 have been turned to duty.

Cavalry operating on typical Cavalry missions will most always be required to undergo extreme physical strain. It is therefore all the more important that our horse branch be equipped with the *very best weapons and material in the world*. During this period of field exercises and maneuvers time for development and improvement of experimental equipment has been very limited. However as indicated below thought is being given to this important subject.

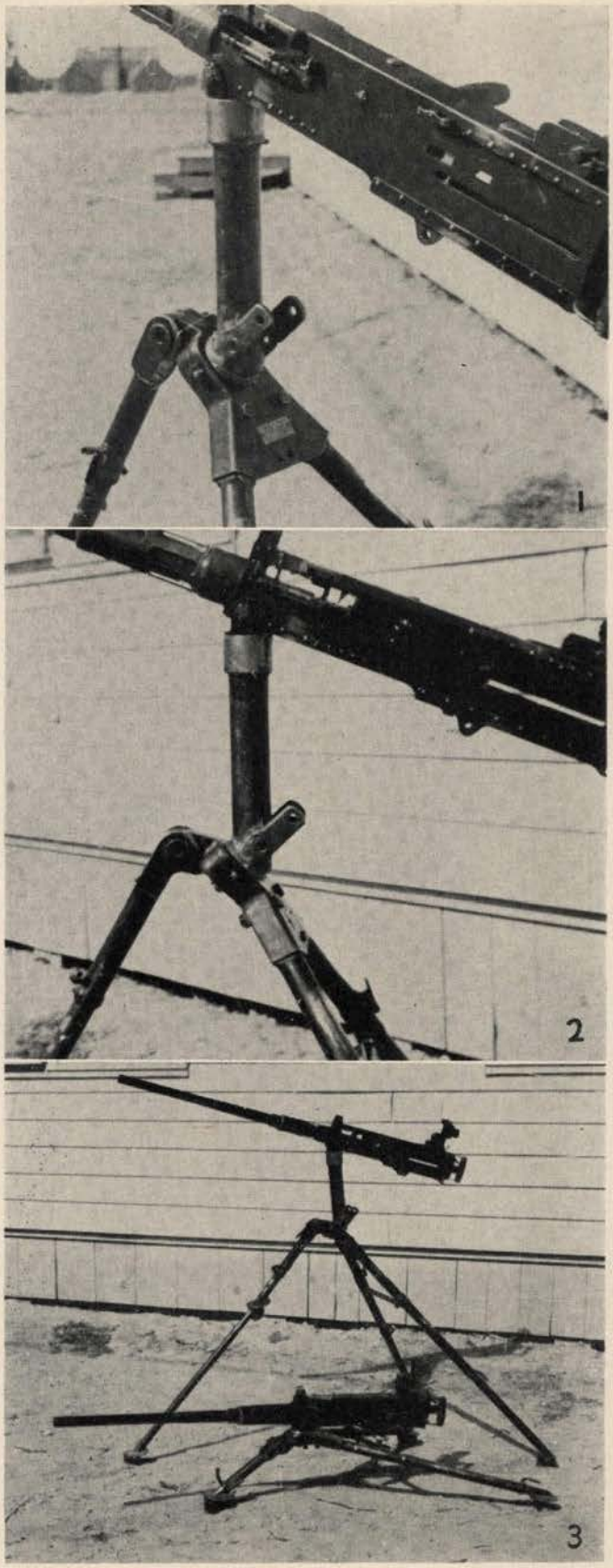
* * *

New Ground Mount, .50 Cal. MG

A method of utilizing the Cal. .50 MG ground mount for more adequate defense with the .50 Cal. MG has been developed by First Lieutenant I. A. Edwards, Commanding Special Weapons Troop.

By adding an extension one foot in length to the pintle and 4 feet to the single leg and by extending the single leg to its full length to the front, it is possible to obtain a traverse of 360 degrees and a maximum angle of fire of 85 degrees from the horizontal. This modification does not in any way interfere with carrying the gun and mount in pack. The accompanying pictures show the gun and mount as set up for antiaircraft defense.

The gun has been fired from this mount against stationary and moving targets, but has not been tested against aerial targets. The same percentage of hits was scored from the new mount as was scored from the conventional ground mount. The new mount has also proven its value when used in the terrain around Fort Bliss, where many small sand hills are found. These sand hills limit the field of fire for a gun on the conventional mount but this condition is eliminated by the new mount.



1—Rear of pintle assembly and extension. 2—Side of the assembly. 3—Side view showing difference in height of new and old mounts. Also details of forward leg extension.

6th Cavalry—Fort Oglethorpe, Georgia

COLONEL J. A. CONSIDINE, *Commanding*

The 80th Anniversary of the organization of the Sixth Cavalry was celebrated on Saturday, May 3, 1941, with the following program:

Presentation of Recruits to the Colors.

Invocation.

Brief résumé of the history of the Regiment by Second Lieutenant Rush S. Wells.

Address by the Commanding Officer.

Musical tribute to the men who have died and to those who have retired since last Organization Day, followed by "Auld Lang Syne."

Benediction.

National Anthem.

11:00 A.M., Hunter Trials, Enlisted men (See Horseshow Memorandum dated April 18, 1941).

1:00 P.M., Baseball Games.

2:00 P.M., Hunter Trials. Officers and civilians (See Horseshow Memorandum dated April 18, 1941).

It is a significant commentary on the changes which have taken place in the Army during the past year that more than 500 men were presented to the Colors as recruits. Many of these were, of course, previous service men who had been assigned, but most of them were recruits and Selective Service men who have been assigned as replacements for men sent as cadres to new organizations.

The months of May and June have been busy ones in the lives of the Sixth Cavalrymen. In May, besides the normal small unit training, there were seven field exercises scheduled which called for an average of one day and one night in the field under simulated battle conditions. On May 8th, an administrative march was conducted to Camp Forrest, Tennessee, where the Regiment was the guest of the 107th Cavalry. After a pleasant night, marred only by an electrical storm, the return march was made as a tactical exercise. In this as on several others, the 106th Observation Squadron, whose home field is Birmingham, Alabama, worked with the Regiment.

June was devoted to more or less decentralized training with the elements of the Regiment widely scattered.

The First Squadron (Horse) spent most of the month on the Tennessee River where they were swimming horses and men in preparation for the coming maneuvers. They solved admirably the problem of "Getability of Cross," when confronted by an unfordable stream. A detailed account of this instruction as well as a discussion of an improvised boat for transportation of equipment across the stream, is discussed under a separate article in this issue of THE CAVALRY JOURNAL. While the First Squadron was thus engaged, the Second Squadron (Mecz) was engaged in field and combat firing of vehicular weapons at Fort McClellan, Alabama.

The Regiment was reassembled during the last week in June and the finishing touches are now being put on the preparations for the Third Army Maneuvers in the Louisiana Area. According to present plans the Regiment will march from Fort Oglethorpe on Monday, July 28th, and will return around the first of October.

On June 20th the Regiment received one hundred replacements from the Cavalry Replacement Training Center at Fort Riley, Kansas.

The Regiment were all happy to congratulate the Commanding Officer upon his promotion to "Colonel," which was effective on June 26th.

* * *

7th Cavalry—Fort Bliss, Texas

COLONEL THOBURN K. BROWN, *Commanding*

On May 15th, Colonel T. K. Brown joined and assumed command of the regiment and Lieutenant Colonel F. W. Boye who had been in temporary command since the departure of Colonel Gilbreath, was appointed Acting Chief of Staff of the Division to fill the post vacated by Colonel Brown.

Most of the training difficulties incident to the expansion program of the past year have been gradually eliminated and it is now possible to view with pride this famous old regiment shaping into a balanced organization, fit and ready to answer, if the call to battle is to come again. The last group of selectees took their places in the ranks of the troops on May 29th; the 1,000 remounts received last winter are trained and conditioned; and the inexperienced junior officers of a year ago have become real functional parts of the regimental machinery. With a strength of 82 officers and 1,367 enlisted men, the Seventh gives every indication of being on the way to attainment of its training objectives.

The Squadron and Regimental Phases of the GHQ training program were completed during May and June and on June 23rd the regiment began participation in Brigade and Division tactical training which is scheduled to continue through July 25th. Since the beginning of the Regimental Phase, life in the field has become the rule for the Seventh Cavalry soldier, with only an occasional return to Fort Bliss to change shirts and keep the barbers from starving. Men and animals are in excellent physical condition and the ability to take hardships in stride is productive of a high state of morale which is visible throughout the command.

About 25 new officers, all of whom are graduates of University of Arizona, Texas A & M, or the New Mexico Military Institute, joined the regiment the last week in June. These officers are taking part in the field training of the command and every available day in garrison is being utilized to put them through an intensive course of basic instruction before the regiment departs for Army Maneuvers next month. A special course in cavalry weapons is also being conducted to qualify every officer of the regiment in the use of all

regimental weapons and to qualify certain squads in the rifle troops to take over the firing of mortars and caliber .50 M.G's whenever necessary.

The Regiment took time out on June 25th to observe the anniversary of the Battle of the Little Big Horn, which is appropriately designated as Organization Day of the Seventh Cavalry. The program began with an early morning formation on Noel Field at which the Selectees were presented to the Regimental Standards and Battle Streamers and the regiment was addressed by Colonel Brown and Major General Swift. The remainder of the day was declared a Garry Owen Holiday. A schedule of inter-troop athletic events was held at 6:00 P.M. after which the troop kitchens were set up on Noel Field and an outdoor open house was held for families and friends.

Under the direction of Lieutenant Jones, the traditional Garry Owen interest in athletics is being maintained despite the fact that very little time is available during this period of intensive tactical training. This interest was demonstrated in the Division Boxing Tournament held May 15, 16 and 17 in which the 7th Cavalry representatives reached the finals in six of the eight classes. Final awards to members of the regiment were as follows:

Pfc. Matts, Tr B .... Heavyweight Champion
Pfc. Ringlero, Tr C .. Lightweight Champion
Pvt. Guidara, Tr A .. Lightweight Runner up
Pvt. Eidel, Tr B .... Middleweight Runner up
Pvt. Tryon, HQ Tr . Welterweight Runner up
Pvt. Martinez, Tr A, Featherweight Runner up

Most interesting gossip of the month is the fame which is about to come to one of our Squadron Commanders, as Keeper of the Division Bear. It seems that Lieutenant Colonel Stillinger attended a party where General Swift mentioned a bear, which Brigadier General Alfredo Sanchez Acevedo of the Jaurez Garrison wished to present to the Commander of the Cavalry Division as a gesture of the International Good Will. Stillinger took this to be loose talk, but proceeded to make good conversation by explaining his great knowledge of bears and his skill as a trainer. A few mornings later, Sam wasn't feeling so much like a circus man when General Swift phoned to say that Diana was in Jaurez, and weighed 500 lbs., and that Stillinger would become the official custodian as soon as quarters could be constructed under the water tower in the 7th Cavalry area. We'll ask Sam to teach her to roar when the band plays Garry Owen and maybe she can be useful along the Sabine this summer for night patrolling to obtain identifications. At any rate a bear is the one thing we really needed.

8th Cavalry—Fort Bliss, Texas

COLONEL J. K. BROWN, *Commanding*

Intensive training in preparation for Army Maneuvers during August and September has been the dish served the Eighth Cavalry during the last two months.

The latter part of May was devoted to Squadron tests of training supervised by the 1st Cavalry Division. Each Squadron was subjected to several typical Cavalry problems, presented by an active enemy which required rapid and effective solutions. The 1st Squadron of the 8th Cavalry drew a great deal of favorable comment in the critique which followed, particularly on the rapidity with which it went into action.

Upon completion of the Squadron tests, the Regiment, accompanied by Headquarters Troop, 2d Cavalry Brigade, and Troop "D," 16th Quartermaster's Squadron (Pack Train) on June 2, moved to the Sacramento Mountains for a period of two weeks for the purpose of engaging in intensive and comprehensive field exercises which embraced the various situations which a Cavalry might encounter in modern campaign.

With a shifting panorama of desert to mountain and back to desert, the troops were provided with valuable experience over extremely varied terrain. Mountain operations in the Sacramento were over a difficult and rugged country. Desert operations might well be compared to those encountered by the warring armies in Northern Africa. In all, horse elements marched in excess of 300 miles.

Field exercises conducted during this period included: Pursuit, the Regiment acting as an encircling force; Zone reconnaissance, advance into hostile territory over mountain terrain, rear guard, passage through a hostile village, defense of a defile against mechanization and air attack, establishment of an outpost, night march in hostile territory, and stressing at all times march discipline, concealment, reconnaissance, security, map-reading, marching by sketch without the use of maps, and care of animals and equipment.

During two phases of operation, active enemy was furnished by the 91st Reconnaissance Squadron, while the Regiment was reinforced by the Weapons Troop, 2d Cavalry Brigade, and a detachment of the 8th Engineers. Action took place in Sacramento Canyon, the Regiment having the mission of seizing and occupying the junction of Scott Able and Sacramento canyons. All avenues of approach to the defile were secured either by road blocks or by antimechanization units during the night. At daylight the Regiment marched down the narrow defile, the horse elements being able, without interruption, to reach their objective.

Two days later the Regiment debouched from the mountains and was again attacked by the 91st Reconnaissance Squadron. Further reinformecents in the form of the 62d Field Artillery (Motorized) arrived during the night to assist the Regiment. Early and widespread reconnaissance gave first indication of enemy movement. Antitank weapons, displaced well forward and to the flanks, protected the horse elements which moved rapidly on a broad front, cross country. Action took place in the vicinity of Orogrande when

the tank troop, unsuccessfully, attempted to turn the right flank of the Regiment and cause a breakthrough which was to be exploited by the bantam car troop. The march of the horse elements was interrupted but little, all attempts at harassing being thwarted by security detachments. (See page 56.)

The remainder of June was spent on various phases of Regimental Training usually in form of field maneuvers, one reinforced squadron versus the other. Umpiring and umpire methods were stressed.

July found the Regiment, as a part of the 2d Brigade Combat Team, participating in Brigade Phases of Training.

During this period many new officers have joined the Regiment.

Lieutenant Colonel Mark A. DeVine, formerly Military Attaché, Buenos Aires, Argentina, joined and was assigned as executive. Major William H. Wood, was transferred to the Regiment from Weapons Troop, 2d Cavalry Brigade.

The following new officers came on active duty with the Regiment: Captain Raymond S. Risien. Captain Thomas J. Elder, Lieutenant Harry M. Smith, Lieutenant Hugh R. Hughes, Lieutenant Joseph H. Jeffress, Lieutenant Leroy G. Lewin, Lieutenant Simon L. Baumgarten, Lieutenant Elwood F. Ryder, Lieutenant Elkan F. Solomon, Lieutenant Frank L. Goodwin, Lieutenant Benjamin M. E. Smith, Lieutenant Robert A. M. Fasken, Lieutenant Ralph D. Reagor, Lieutenant William H. Butler, Lieutenant John H. Willard, Lieutenant Jerome H. Cribbs, Lieutenant John C. Stuart, Lieutenant Richard M. Jackson, Lieutenant Elbert L. Kelley, Lieutenant Rexford K. Anderson, Lieutenant Willis G. Ethel, Lieutenant Alcy P. Whitehead, Lieutenant Joseph S. Bracewell, Lieutenant Randall P. Legler, and Lieutenant Robert E. L. Paul.

Losses during this time included: Major R. M. Neal to the Armored Force; Captain W. H. Greear to the Cavalry School, Fort Riley; Lieutenant H. M. Conner to the Armored Force; Lieutenant Arthur Dixon to the 91st Reconnaissance Squadron; Lieutenants Leary, Haas, Wilson, and Robenson, termination of active duty.

Sergeant Oliver, Machine Gun Troop, passed away following an automobile accident.

11th Cavalry—Seeley, California

COLONEL HAROLD M. RAYNER, *Commanding*

May and June saw 727 Selective Service men turned to duty, another 200 draftees begin their period of basic training, 37 men called to guard duty on the North American Aircraft strike in Inglewood, 158 replacements report for duty from Fort Riley, Kansas.

A training film, showing the Cavalry's use of the light machine gun, was put into production on May 21st by the Signal Corps, Lieutenant Colonel A. W. Howard and Captain A. P. Ebright acted as technical advisors to the R. K. O. film personnel who have so generously given their time to make possible these films. The film went to the cutting room on May 31 and is expected to be released soon. A premier is being planned at the Camp Seeley open air theatre in the near future.

Night alerts, three and four day marches, and extended maneuvers in the arid Imperial Valley were scheduled for the troopers at frequent intervals with night marching the order of the day. The 727 selective service men who arrived here on the first week of March and were turned to duty after a thirteen weeks basic training period reviewed their work in machine gun, special weapons, antiaircraft, rifle and pistol practice, in addition to their regular duties. Those of the new soldiers who had specialized in radio, engineering, chemical and other professions of military importance in their civilian lives were given opportunities to pursue their work in the specialists' schools. These latter have an extra large attendance this season looking forward to the next call for cadres.

Unique in cavalry camps is the new horse swimming pool added to the camp facilities the last of June. It is 50 yards wide and about a half mile long. Situated two miles south of camp. A natural gorge, ten feet deep, easily lent itself to the use of an equine swimming hole after a little clearing. Water is provided by adjacent irrigation ditches and is kept fresh by a constant running stream. We haven't had to chlorinate it yet. Life preservers and boats will be provided and it is hoped that this homemade river will provide the locale for all our river crossing problems.

The 200 draftees who arrived during the period of May 24-May 27 hailed from Fort MacArthur, Camp Callan and Fort Rosecrans. Their training period ended on July 12, after an intensive basic training spell which followed closely the schedules laid down for replacement centers. This brings the selective service strength of the regiment to 1,043.

The long and short of it: Troopers Doyle and Hutton attest that it doesn't take a big man or a small man to make a rider. Harry D. Doyle is only five feet one and hails from Chicago. His fellow trooper, Russell Hutton, is close to six feet five inches and comes from Berkeley, California. Both are members of B Troop.

The Scout Car Platoon, under command of First Lieutenant Glenn Ames, was alerted the night of June 9, and ordered to report to the C.O. 15th Infantry for duty at the North American Aviation Company in connection with the strike at that plant. (See page 82.)

Training tests to include the troop have been completed and now with word from the Fourth Army that the 11th Cavalry will not take part in the late summer maneuvers, it looks as though we will carry on a desert campaign of our own in the way of squadron and regimental problems and maneuvers.

Officers schools under the direction of the Regimental S-3 Officer are being conducted twice weekly with continued stress being laid on defense against aircraft and mechanization and the leadership of small units.

The first of a series of night rides took place on the night of July 2, 1941. In all, 46 riders entered and 36 finished. First honors for the officer entry went to Lieutenant J. J. Thornquist, a real dark horse (he happens to be the regimental dentist, who learned to ride but a few short months ago). The blue for the NCO contestants was awarded to Sergeant Mann of Troop "C." Sergeant Mann was high man in both groups. The ride was made without watches and was controlled throughout. It involved the use of a map substitute, reading of coördinates, gaiting, message writing and the care of the horse.

Alerts of all kinds are getting to be second nature to the 11th. Five times in the last month found one or more units taking the field after darkness on missions of various kinds. The first one was the real McCoy when the 4th Army ordered the Scout Car Platoon to Los Angeles to help protect the North American Aviation Company.

Two of the other alerts were mounted problems and pitted one unit against another in mock battles against outpost positions. The remaining two involved the use of truck transportation and ordered troops to critical points along the All American Canal. Troops were actually placed on the ground as called for in reconnaissance plans made previously. Patrols were sent out and guns laid all according to plan. No doubt there will be more alerts for we have a goodly number of critical points to protect, but from now on they will just be another formation.

The Fourth of July season was ushered in with a swimming meet held in the newly constructed swimming pool. Competition was keen with "A" Troop walking away with first money, a scant 3 points ahead of the nearest competitors Troop "B."

The library of training film strips has been established and is proving invaluable in putting across numerous training points.

Construction at Campo where our new home, Camp Lockett, is to be located has been rather discouraging to date, but the tempo has stepped up since the contract was let and the first dirt turned on June 23. The availability of workmen and material will determine to a great extent whether or not we occupy the new site by September or October.

Lieutenant Colonel W. L. Conrow, assistant G-4, Ninth Corps Area and formerly assigned to the 11th was a visitor at Seeley and Campo on June 26. He came to observe conditions at Camp Lockett and to make recommendations for improvements at that place.

Major Lloyd G. Buchler made a stirring address to the entire regiment on Flag Day. Major Buchler's talk was instructional as well as patriotic and every member of the command thoroughly enjoyed it.

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12th Cavalry—Fort Bliss, Texas

COLONEL WILFRID M. BLUNT, *Commanding*

The regiment has been actively engaged for the past two months in squad and platoon tests, squadron tests, regimental, brigade, and division maneuvers. On May 26, 1941, the regiment maneuver to Mossman Ranch from where the regiment, less the Second Squadron, moved back to the post. The Second Squadron proceeded on to Radium Springs where it stayed a week in putting on river crossing demonstrations for the Universal and Metro-Goldwyn-Mayer News Service. These moving pictures were shown at the Post theatre and then edited and released throughout the country. In the squadron training tests held by Division Headquarters the Second Squadron of the 12th, commanded by Captain Chandler P. Robbins, Jr., received many favorable comments from the division commander, General Swift, during his critique on the exercises.

The recent river crossing exercises developed that there were some men in the regiment who were unable to swim. Through the initiative of 2nd Lieutenant Charles E. Peters night swimming classes were arranged for these men at the YMCA pool in El Paso.

All training was suspended on May 9 for our Regimental field day and on May 17 for the Division field day. In the Division meet the 12th won the mounted events and were second in total points in the Division. The excellent turn-out for both events indicated that they should be held more often.

A regimental combat intelligence school was held during May and June with two classes a week which met with unusual success. There were sixty-five enrolled in the school which was conducted by First Lieutenant Clyde W. Mainer.

The following reserve officers have reported for duty with the regiment: First Lieutenants Thomas J. Casbeer, Jr., R. E. Denison, Tom R. Celey, and Gilbert C. Easley; 2nd Lieutenants Elbert D. Shipp, George V. Labadie, Joseph W. Batts, Jr., Morris H. Moore, Eugene L. Keeth, Gherald L. Hoopes, W. R. Johnson, E. W. Schoch, Tom B. Moore, Albert Bain, Henry B. Holmes, III, Thomas B. Richey, Sidney A. McDonald, Jr., Thomas L. Power, George C. Taylor, and William D. Lyman. Major Robert E. Edwards, First Lieutenant

Lyle E. Peterson, and Second Lieutenant Ralph M. Rogers have been transferred to Camp Polk, La., First Lieutenant Robert R. Morris to M.P. assignment, San Antonio, Texas, and Second Lieutenant Henry P. Heid, Jr. to Pine Camp, New York.

Recently returned from the Cavalry School, Fort Riley, Kansas, where they had three months instruction, are First Lieutenants Roscoe R. Kerr, Charles K. Felder, and Arthur W. Allen, Jr.; Second Lieutenants Henry P. Heid, Jr. and Raymond E. Webb. Those now undergoing instruction at the Cavalry School include First Lieutenants John J. Taylor, Matthew M. Dikeman, Albert E. Voelkel; Second Lieutenants Robert Wilbourn and Lynn A. Sands. Major A. M. Miller, III is now attending the Command and General Staff School at Fort Leavenworth, Kansas.

In commemoration of the organization of the 12th Cavalry on June 29th, 1901, the regiment on the anniversary date held the celebration within the troops in the form of a special dinner for all men and their families. A letter from Colonel Wilfrid M. Blunt, Commanding Officer, and a history of the regiment were given to each attending. Major General John K. Herr extended his congratulations by telegram. In the evening all officers of the 12th and their families with special guests gathered at the quarters of Colonel Wilfrid M. Blunt for a buffet supper on the lawn. Major General and Mrs. Innis P. Swift and Brigadier General and Mrs. Karl S. Bradford were guests of honor. The supper was an informal affair with music being furnished by the 12th Cavalry band.

13th Armored Regiment (Light)—Fort Knox, Ky.

COLONEL R. E. MCQUILLIN, *Commanding*

In the early part of June the regimental commander, Colonel McQuillin, the executive officer, Lieutenant Colonel Benson, and Captain Scherer, commander of Machine Gun Company, were ordered to Tennessee to act as umpires in the Second Army maneuvers. They brought back many interesting observations and suggestions for the improvement of certain details within the regiment.

During the regimental commander's absence, Lieutenant Colonel F. T. Bonsteel was in command, with Lieutenant Colonel W. R. Stickman acting as executive officer. They conducted a number of field exercises for tank companies, reinforced with medium tanks, artillery and engineers. Principal training for the period was target range work with the caliber .50 M.G., caliber .30 air and water cooled M.G., Thompson submachine gun, M-1 rifle and caliber .45 pistol. All men permitted to fire are firing the 37-mm. gun mounted in the new M3 tanks.

The regiment established its own bachelor officers' quarters during the month of June. This has proved an excellent arrangement as it has brought the officers of the regiment together and has done much to heighten the already excellent morale of the bachelor officers.

Captain B. C. Cairns, commander of Reconnaissance Company, recently left for Fort Leavenworth to attend the Command and General Staff School. New officers ordered to the regiment include: Major P. C. Hains, Captains F. H. Britton and O. L. Dockum, and Second Lieutenant G. W. Chipman, Jr., whose father, Colonel G. W. Chipman is now on duty at the Armored Force Replacement Training Center here. Officers of the regiment recently transferred to the Armored Force Replacement Training Center include: First Lieutenants R. K. Preston, H. M. Steller, and G. H. Hitchcox. Second Lieutenant Gowell, a Thomason Act Officer, was selected for regular commission in the U. S. Army upon completion of his year's training.

The regiment has been conducting a series of schools for both officers and enlisted men. Among these are Radio, Motorcycle and Intelligence Schools. Officers schools are being held four times a week. In addition to regimental schools, there are at present some 175 enlisted men and 14 officers attending the Armored Force School.

All are looking towards the coming August maneuvers with keen interest, as affording the first opportunity under current tables of organization, to test our mettle in operation with and against the other arms as well as other armored units.

106th Cavalry—Camp Livingston, Louisiana

LIEUTENANT COLONEL CHARLES R. JOHNSON, JR., *Commanding*

Since the last issue of The CAVALRY JOURNAL the following officers have returned from the Cavalry School: Major Roy D. Keehn, Jr., Captains Charles R. Bean, Joseph Temple, John L. Kracke, Kenneth C. Haycraft; First Lieutenants John D. Tarpening and Roscoe C. Buckles. The following officers are now at the Cavalry School: Captain Richard K. Strauss, First Lieutenants Henry E. Gardiner, Lewis D. Brawner, Kenneth B. Mountz, Robert L. Lloyd, Oscar W. Wilson, and Second Lieutenants John K. Winkler and William F. McCarthy. Captain Roy M. Root, Supply Officer, is taking the G-4 Course at the Command and General Staff School.

Eighty-three selectees have recently been received from the Training Center at Fort Riley. Oddly enough, the majority of these Replacements are from the vicinity of New York City and will therefore, upon Demobilization, be lost to the Regiment.

The Regiment has recently participated in four Division Exercises, a Corps CPX, and two Corps Field Exercises. At the time that they were needed most, sixteen prime movers for the horse vans arrived. On the afternoon that they arrived they were given their one hundred mile check, and received their five hundred mile check early the next morning, and were placed at the disposal of the Horse Squadron before

noon of the day after their arrival. Since then, the number of prime movers has risen to twenty-four, with twelve more coming in at the time this is written. The final shipment of remounts is to arrive early in October.

A large detachment of the Regiment spent the week-end of July Fourth in Monroe, Louisiana, where they were very royally entertained by the people of that town. Plans are in progress for a trip of the whole Regiment to Monroe immediately prior to the August Maneuvers.

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115th Cavalry (H-Mecz)—Fort Lewis, Washington

COLONEL R. S. GRIER, *Commanding*

Designated the 115th Cavalry under the National Defense Act of 20 years ago, the Wyoming National Guard was inducted into the United States Army on February 24 of this year. Previous to the induction date, the complement of officers and men was swelled to 1,218 by about 690 volunteers who swarmed in from the ranches, down from the "cricks," off the mile-high sagebrush plains and out of Wyoming's towns and small cities, anxious to take advantage of the last chance for voluntary enlistment, many of them fearful of "missing something" in case America became actively engaged in the latest war. It was the usual and expected response of the sparsely settled but militant State which had supplied more men per capita than any other state in the Union in both the Spanish-American and World Wars.

After spending about ten days in drilling at the State's twelve armories and in preparing for the move, the 115th Cavalry during the early part of March entrained for Fort Lewis, Washington, where it became part of the IX Army Corps.

It required the usual space of time for a National Guard unit to become acclimated to the idea that it was part of the United States Army and no longer the object of local adulation as prospective heroes. The leaden skies, damp, heavy air, and North Pacific Coast rain, which beat down on the roofs of the new barracks in weekly quantities sufficient to water Wyoming for a whole year, depressed the men from the Rocky Mountains and high steppes of Wyoming where, according to song and fact, "the skies are not cloudy all day." Also hampering early training were serious shortages of horses and equipment, since then gradually being remedied. As the regiment became acclimated, many claiming "they were growing webs between their toes, like ducks," the morale of the regiment stiffened and has continued at a high level ever since. Nor has it suffered in any way through the addition to the regiment of 442 especially adaptable selectees, gathered mainly from Wyoming and neighboring states, who have brought the regiment up to full strength.

Like other horse-mechanized regiments, the 115th is divided into a horse squadron, comprising headquarters and three troops mainly from the northern part of Wyoming where stock ranching is the backlog of industry, and a mechanized squadron, comprising headquarters, Headquarters Troop, Service Troop, and three troops from the more thickly populated and urban central and southern parts of the State.

To the vast disgust of the cowhands, many of whom in their entire lives had never walked much farther than from the bunkhouse to the corral and who had expected to spend their entire service in the 115th aboard horses, the first month of training included much dismounted drill. To learn to march afoot—in what was quickly termed "the 115th Horse-Mechanized Infantry"—necessarily included training first in walking, since the cowhands, for the first time set on the level from their habitual high-heeled cowboy boots, naturally walked with a sort of loping motion not accepted as good form in dismounted drill. The mental anguish involved in conforming to this new form of locomotion required so much mental concentration that cadence was difficult to achieve, even with the regimental band oompahing on the plains at the foot of cloud-wreathed Mount Rainier. Finally, however, they were judged passibly good as foot soldiers and training in equitation commenced in earnest for the horse squadron.

The transformation from "riding" to "equitation" in approved Cavalry style also proved a great mental and physical strain to those who had not enjoyed the advantages and training of previous service with the Wyoming National Guard. Used, since almost before they could walk, to long stirrups and easy, far-back positions, they contorted and groaned, but not more loudly than the graduates of Fort Riley who were training them. After this training, however, the vast majority have learned to ride in the approved manner, also recognized the practicallity of the method. This adoption of style, along with lifelong familiarity with tough horses, has proved a combination hard to beat in effective and hard riding in the small maneuvers in which the regiment has lately been engaged.

While the horse troops have been learning to "equitate," the mechanized units have been learning effectively to handle scout cars, jitter bugs, trucks, motorcycles and reconnaissance cars, easy in their belief that their juggernauts will prove more effective in any trouble which might arise than the horses. In this assumption they are supported by popular thought of the local civilian population, now almost entirely devoid of experience with horses and accustomed to whizzing over paved and oiled roads in super-civilized America. This natural conflict of thought reached a climax in May in a mammoth review of some 45,000 troops stationed at Fort Lewis. A huge civilian crowd assembled and sat silently while miles of columns of mechanized forces roared past, a grim grey show of might in clouds of whirling dust. When, toward the close of the review,

the 115th's horse troops in lines of platoons rode past, a roar of applause—the first heard from the crowd—went up from mechanized-bored spectators.

The Seattle *Times* headlined "Old-time Cavalry Steals Show at Review." On its front page, the *Times* then proceeded, somewhat wistfully, with the intimation that horse troops were museum pieces. Piqued at having been classed as interesting relics, the horse cavalrymen murmured grimly, "Just wait till we get to Asia or Africa or some place where they ain't no fancy roads for them dudes to go sashaying around on!"

Meanwhile shortages in equipment and horses were gradually being caught up. After two weeks of gentling, 98 new remounts made their debut under saddle. To the gratification of trainers but to the secret disappointment of the broncbusters, only two out of the 98 offered to buck the first day. Sadly the leading broncbusters went back to riding the several incorrigible knot-heads that had accompanied the regiment from Wyoming.

While the horse cavalrymen were proceeding with their training in close and extended order drill, both mounted and dismounted, and the mechanized units were practicing with their mechanical steeds, the staff, with the mechanized Headquarters Troop, was engaged in CPX's around the Fort. These finally culminated in a 1,040-mile trip to Hunter Liggett Military Reservation in the coastal mountains southeast of Monterey, California. Accompanied by Headquarters Troop, with men attached from Service and other mechanized and horse troops, the convoy of 17 vehicles made the 2,080-mile round trip without a single mishap.

As homesick for mile-high Wyoming as had the grey skies and downpours of Fort Lewis made the men, the scorching heat of California made them appreciate the moderate temperatures of Fort Lewis to the extent that they began to refer to that as "home." After about a week of reconnoitering the region, the staff engaged in a CPX which ranged over most of San Luis Obispo, Monterey and San Benito Counties. The 115th there set up and moved the CP in fast time for the advanced body of an army, also supplied umpires for the exercise. On the return trip to Fort Lewis, which the detachment made alone, all agreed that much valuable practice in CP conduct, tactics and movement had been gained.

While this detachment was in California, the rest of the 115th concentrated on range firing of .30 caliber rifles and heavy and light machine guns, also .45 automatic pistols, both mounted and dismounted. The horse squadron also engaged the mechanized squadron in a 3-day maneuver in which it was generally conceded that the mounted men ran circles around their more "modern" confreres.

During the week of June 16, just closed, the horse squadron on successive days completed tests of squad, platoon, troop and squadron command into which officers and men plunged with great energy and zeal, reflecting the high state of morale existing in the regiment.

Stroll Along ridden by Sergeant Edgar E. Etheredge, 8th Cavalry. (Photograph made recently during filming of motion picture at Fort Bliss, Texas)

NIGHT COMBAT

CARDED

German 1st Cavalry Brigade vs. Polish Infantry
*1st Cavalry Regiment north of Kunin on September 6 and 7, 1939.**

A BRIDGEHEAD having been established over the Narew River south of Rozen at Brzuze in the afternoon of September 6th, the 1st Cavalry Regiment received an order about 7:00 PM to widen—with three squadrons (two were used elsewhere)—the bridgehead, passing over Kunin in the direction of Czarnowo; or to advance against the highway on both sides of Kartenwort Mala.

After starting reconnaissance of the approach route and both sides of it, the 1st, 3d, and 4th Squadrons rode toward Kunin, reaching it about 10:00 PM. Here they received the first reports from the scout party, which said that a rather large but inactive enemy force was at Mala and that a smaller one was at Czarnowo; that no movements of the enemy had been noticed on the highway on either side of Mala, but that on the other hand shots had been fired from the woods.

Since, according to these reports, an encounter with the enemy was expected at any moment, the three squadrons advanced from Kunin on foot. The front squadron, with one section dismounted, scoured the approach route on both sides, while the other riflemen of the squadron marched with fixed bayonets on both sides of the horses and the officers with carbines or pistols in their hands. About 11:30 PM, the three squadrons, on approaching to within about 800 meters of the Mala-Rozen highway, heard a rattling of vehicles on the highway. The regiment made a fire attack which caused the flight toward the east of a battery, or a machine gun company, and the destruction of the first line transport of the unit together with horses, vehicles and some of its personnel. A short fire combat with an enemy fleeing in the direction of Mala ended this action.

About midnight the 1st Squadron received an order to make a forced reconnaissance towards Czarnowo, which was still reported to be weakly held by the enemy, while the 3d and 4th Squadrons were to follow so that later they might oppose the part of the enemy retreating along the highway south of Czarnowo. This advance of the regiment and the fire attack that accompanied it started the attack of at least one enemy infantry regiment—which must have been camouflaged in the region northeast of Czarnowo—against the three squadrons of the regiment.

Since it was completely dark, the enemy infantry regiment began the attack as a surprise, with shouts of "hurrah!" The 1st Squadron at first fought just north of the road with its front toward the north and east, while the 3d and 4th first took up the defensive on the road south of the line Duza Ponikiew-Mala with front toward the north. The Poles came to within storming distance throwing hand grenades at the regiment but were forced to withdraw. In the further course of the combat they tried to surround the three squadrons from the east, southeast and south; finally some stragglers from the forest north of Kunin also took part in the combat, and later there was also an attack from the direction of Pasieki. This combat situation forced their regiment, with parts of the 3d and 4th Squadrons, to form a front toward the east and south, and during the further course of the combat we were continually forced to use parts of the squadrons at places that were in special danger.

With carbines, or at least with pistols, nearly all the officers participated in this combat which, due to the numerical superiority of the enemy, at first looked critical. Again and again some of their men gathered about them in the dark and attacked the Poles with shouts of "hurrah!" The darkness of the night made leadership of the three squadrons very difficult because one could scarcely tell who was friend and who was enemy. It was only by muzzle flashes that one could get an approximate idea of the course of the combat. All the riflemen that could be spared were taken from the led horses. Again and again the Poles tried to win by attacking from the south or from the flanks, but all their attacks were shattered by our brave resistance.

Thus, the three squadrons of the regiment not only succeeded in beating off the enemy attack but they scattered the enemy infantry regiment and captured parts of it.

*Excerpt from Chapter VII, *Kampferlebnisse aus dem Feldzug in Polen, 1939*, published by the German General Staff.

The Armored Dragoon

(Some Ideas on the Organization and Equipment of British Mechanized Cavalry)

By Captain F. R. C. Stewart★

IN answer to a pronouncement at the Staff College that the word "cavalry" can be applied only to horse troops, because it derives from the Latin "caballus," a horse, a mechanized cavalryman might retort indignantly that the word "infantry" (like "infant") derives from the Latin "infans," not speaking—or perhaps even from "infandus," unspeakable! So much for too literal a regard for etymology.

What, then, was and is the essence of cavalry? Is it the ability to fight mounted? That was the old distinction between cavalry and mounted infantry, but it would include the "I" *(Infantry)* tanks of today and the elephant troops of the past, and would exclude the whole of the French horse cavalry since the last war as well as certain types of British and Indian mechanized cavalry of today. Is it armor? That would appear to be the War Office view, to judge from the creation of the Royal Armored Corps and the change of name of the Mobile Divisions to Armored Divisions. Yet armor is not, and never has been, the prerogative of any particular arm. Still less is the internal combustion engine, any more than the horse used to be. Is it mobility? That would include mounted or motor infantry, and would exclude "I" tanks, which have been recently included with the mechanized cavalry in the Royal Armored Corps.

Nevertheless, it is suggested that mobility (maneuverability) is and always was the real essence of cavalry. Not horses, which—however much one personally prefers them to cars, trucks, camels, mules and other conceivable cavalry remounts—were only a means to mobility; not the ability to fight mounted, not armor, but mobility, is the attribute which primarily determines the rôle, the tactics and the tactical training of cavalry, whether mechanized or horse.

The British Army, therefore, started well in referring to its new model cavalry as mobile troops and mobile divisions. Now, presumably influenced by the German "Panzertruppen," it talks of armored divisions, etc., and has created the Royal Armored Corps. To my mind, not only does this title emphasize the wrong attribute—incidentally one that is not peculiar to the Royal Armored Corps, but it perpetuates the absurdity, justifiable in the early days of the Royal Tank Corps as a means of centralizing mechanization research, of having in the same corps two different arms, "I" tanks and —may one say—cavalry tanks, with different rôles and tactics and therefore, different training.

What is the alternative? One could not, without waste and injustice, disband either the Royal Tank Regiment, who evolved the early technique of tank fighting, or the cavalry, who evolved the strategy and tactics of the mobile arm. Instead, however, of splitting the Cavalry of the Line, who have a uniform rôle and tradition though their mounts vary with the terrain over which they are intended to operate, into horse cavalry and Royal Armored Corps, would it not be better to split the Royal Tank Regiment into its two functional components, the "I" tanks and the mobile tanks? The "I" tanks would then resume the title and rôle of the original Royal Tank Corps, and the mobile tanks would be absorbed in the Cavalry of the Line, where they functionally belong. The latter would be subdivided into Corps of Horse Cavalry, Armored Car Cavalry, Tank Cavalry, and, if still required, A.P.V.[1] Cavalry, on the analogy of the old three corps of Dragoons, Hussars and Lancers; or alternatively into two corps of Horse Cavalry and Mechanized Cavalry, if it seemed better to mix different types of mechanical mounts within regiments.

Having decided, then, that there should still be a mobile arm, that it should be one and indivisible, and that it should still call itself cavalry, as a link with its past, which is an inspiration, and its rôle, which is unaltered, let us take a few glimpses at cavalry history to decide the attributes with which it should be endowed.

The Past

The earliest known cavalry, the Parthians, combined mounted fire action with mobility, a tactical equipment whose latter triumphs included the annihilation of a Roman army at Carrhae in 53 B.C. Meanwhile the Greeks, as early as Philip of Macedon (c. 350 B.C.), were developing shock action, and with it the distinction between heavy and light cavalry. The medieval knight increased armored protection to such a weight that he lost his mobility, and with it his predominance, even among European levies; while his Mongolian contemporary and enemy defeated him again and again by a combination of fire and shock action with greatly superior mobility. Sixteenth-century Europe introduced the dragoon, originally a soldier who maneuvered

★From *The Cavalry Journal*, April, 1941, London, England.

[1] (Armored Personnel Vehicle.)

mounted and fought dismounted,[2] but later happily redefined as one who fought "indifferently" on horseback or on foot. It was to this dual rôle that the whole of the British cavalry were armed and trained as a result of the South African War, and it was in dismounted action that their superiority over the cavalry of the continent was most marked in 1914.

The Present

Which of these theories have we so far embodied in the mechanized cavalry of today? Thanks to mechanization, the lesson of the medieval knight's failure has, for the time being, lost its force, and we have been able to combine mobility with armored protection. In addition, A. F. Vs. can act mounted by either shock or fire. We have reintroduced the distinction between light and heavy cavalry, though it may be expected to lapse again with the production of a cruiser tank whose mobility is as great as a light tank's. The only attribute of the old cavalry that we have not tried to embody in the new is the ability of the individual cavalryman to fight dismounted as well as mounted.

The Future

Is it sufficient to include motor infantry in armored formations, as all armies do today, and as the Germans included cyclist battalions in their cavalry divisions of 1914? If not, is it sufficient to include in every regiment, or in every squadron, an element which can fight dismounted only together with an element which can fight mounted only? Or is it necessary that every vehicle's crew should be able to act either mounted or dismounted, as the horse cavalry section can?

On the technical side, I am assured that a readily dismountable antitank gun and medium machine gun could be designed for a tank. The sole implication is a crew of at least five to allow, say, two to work and carry each gun and its ammunition in dismounted action, and another to take the tank away under cover and bring it back when required. It is, therefore, purely a question of the tactical advantages and disadvantages involved.

The only disadvantage seems to be a reduction in the number of men available for dismounted action, since a tank necessarily carries a much smaller crew than an A. P. V. of corresponding size. This would not matter for dismounted reconnaissance, since four pairs of eyes can see as much as eight on the frontage that can be covered by the dismounted crew of a single vehicle; nor in the case of dismounting to hold ground, since the antitank gun and medium machine gun of a tank would be a good exchange for the antitank rifle and light machine gun of an A.P.V. But it would rule out the dismounted attack, a rôle that some cavalry in the present establishment can carry out on a very small scale, though it is a weak and uneconomical use of them.

The advantages are considerable. Firstly, the introduction of a cavalry tank with dismountable weapons would make possible the elimination of motor cavalry, whose rôle (the rôle of the old Mounted Infantry) would be taken over by light infantry, as in the armored divisions. To have homogeneous regiments and squadrons of tank cavalry would greatly facilitate their training, their strategical distribution and tactical handling, and the replacement of their casualties. Secondly, it would overcome one of the chief limitations of A. F. Vs., their inability to hold ground, which at present involves a dangerous time lag between the capture of ground by A. F. Vs. and its taking over by troops from trucks or carriers. Thirdly, it would often enable the crew of an immobilized tank to continue to take a useful part in the battle.

These arguments apply less to armored car cavalry, since their principal rôles of long-distance road reconnaissance and desert raids are less likely to require dismounted action. It cannot, however, be a disadvantage for even an armored car to be able to dismount its weapons (provided there is no loss of technical efficiency), so the balance seems strongly in favor of reorganizing and rearming all mechanized mobile troops as "Armored Dragoons," able to fight the guns of their tanks and armored cars either mounted or dismounted.

Infantry

After an attempt to analyze the real difference between the cavalry and infantry arms, it is not, perhaps, irrelevant to consider very briefly the future of infantry in this mechanized order of battle. One of the lessons of the present war seems to be the revival of cavalry (mechanized) as the predominant "hitting" arm. Nevertheless, infantry should not become again merely the "holding" arm. Armies still have to attack, from time to time, positions that have no flanks, that are too strong for cavalry tanks to attack frontally, and that can be taken only by an arm with the ability to attack dispersed down to individuals when the position is reached.

It is suggested that walking infantry, as an attacking arm in normal country against a well-armed enemy, is as obsolete as (European) horse cavalry. Each has its uses: the horse in country where the tank cannot move at a useful pace, or where dispersion rather than fighting power is needed; and the man on foot in country where the horse cannot move at a useful pace, as well as, of course, in garrison rôles. But surely, in the intensive attacks of the future, the infantry must follow up the "I" tanks in armored trucks instead of on their feet. Only thus, for reasons of physical exhaustion apart from casualties, can the attack break through the great depth of modern positions. These trucks would probably dif-

[2] i.e., a Mounted Infantryman. Hence the distinction in the early days of the British Regular Army that the dragoon wore short boots, was disciplined by sergeants and drilled to the drum; while the "horse," who fought mounted only, had instead jackboots, corporals-of-horse and trumpets, as the Household Cavalry still do. "Dragoon Guard" is the name given as a distinction to regiments raised as horse and converted to dragoons.

fer from those of the Light Infantry working with cavalry tanks, in mobility, size, amount of armor and scale of issue; but this is not the place to discuss their design, nor whether to keep them on a pool basis, like troop-carrying M. T., or to issue them permanently to selected "storm" battalions.

It is only worth making the point that it is neither desirable nor possible to make an all tank army, as is sometimes suggested, by putting infantry into "I" tanks or by equipping "I" tanks with dismountable weapons, on the lines suggested for the "Armored Dragoon." The infantry, unlike the cavalry, need to get large numbers of dismounted men on to the enemy position, and for this purpose no A.F.V. can equal an A.P.V.; the "I" tank is intended to attack a position only with infantry in very close support, and in any case its main armament is already too heavy to manhandle.

SUMMARY

To summarize our conclusions:

1. It is a mistake to regard "I" tanks and fast tanks as the same arm. The Royal Armored Corps should be abolished, leaving the Cavalry in their original rôle as the mobile troops of the Army, whether on horses, in armored cars or in tanks; and the Royal Tank Corps in their original rôle of intensive attack, with the "I" tanks.

2. Cavalry tanks and armored cars should be equipped with dismountable guns, to enable their crews to fight either mounted or dismounted.

3. Not only the whole of the light infantry working with mechanized Cavalry, but also a proportion of the rest of the infantry, should be equipped with A.P.Vs., in the case of the latter mainly for following up "I" tanks in attack.

German Armored Troops*

DETAILS are now available about the armored troops, which have played so large a part in the German victories.

The former Austrian General Eimannsberger was the great German tank prophet, though much of what he preached he had learned from our own British writers, Fuller, Liddell Hart and others, who were held in greater honor there than here. General Guderian, the first Chief of the German Armored Corps, was a great admirer of the French General de Gaulle's works and ideas, and put many of these into practice.

The German Armored Corps was from the first a *corps d'elite,* with specially selected personnel, carefully trained, and with a full and lavish equipment in vehicles, arms, spare parts and maintenance and repair facilities. Not all the first ideas that had been evolved from the original theoretical studies of the immediate post-Great War years stood the test of the practical experience to which the Germans were fortunately able to subject them before the outbreak of the present conflict.

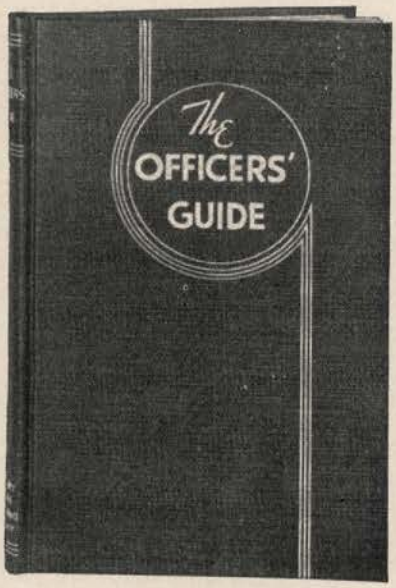
* * *

Each Panzer division is now a self-contained formation of all arms, organized and trained for swift and vigorous offensive action. It comprises about 400 tanks of all types, organized in two battalion brigades; in addition it has a three-battalion brigade of motorized infantry, a mechanized field artillery brigade, and special battalions of engineers with bridging equipment, of heavy machine guns and of antitank guns. A mechanized reconnaissance detachment of motorcyclist machine gunners precedes its advance, operating swiftly on a wide front. Behind it is a complete ordnance recovery and repair organization to supplement the work of the light aid detachment forming part of each of the four tank battalions. The division has also its permanently allotted supporting air squadron in constant wireless link with it. The division as a whole is thus a most mobile and powerful weapon, and is, capable, as indeed often happened in France, of breaking up at need into a number of yet smaller self-contained units each consisting perhaps of a tank troop, with a section of antitank guns and an allotment of armored cars and motorcyclists, operating separately with a special task and objective.

Generally speaking, the tendency now in the German Armored Corps seems to be to reduce the number of tanks in the division, so as to be able to multiply the total number of divisions, and to increase the weight, armament and armor of machines. The light tank is being gradually replaced by the medium, and the medium in turn by the heavy, or cruiser type, possibly with a super heavy model in reserve for special tasks. So far there is no evidence that the Germans actually used the 75 or 100 ton giants with which rumor credited them in France last year; nothing as heavy as 40 tons was identified there, though something bigger may be in use now. Technically the German tanks in France proved inferior to our own, but this inferiority may now, of course, be remedied. It was numbers that enabled them to prevail there, and this advantage they have up to the present been able to maintain.

*_The Tank_, (England), May, 1941.

Fifth Edition
MAY, 1941



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ACCEPTANCE of this publication by officers of the Army of the United States has required a new edition. The fifth edition incorporates many of the developments and changes which have occurred during the past few months.

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THE CAVALRY JOURNAL

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Book Reviews

GENERALS AND GENERALSHIP. By General Sir Archibald Wavell. The Macmillan Company, New York, 1941. 36 Pages; 50 cents.

These lectures would be remarkable for their intelligence, imagination, humor, and humanity at any time. They are even more so when one considers that though they were delivered before the outbreak of the present war they clearly state the essentials for getting the jump on methods since put into practice by the Germans—essentials now obvious. General Wavell is, moreover, no mere commentator on a particular moment in military history. He draws on a tradition which includes Socrates, Wellington, and Tolstoy; and his mind, like his style appears to be endowed with simplicity, directness, and flexibility.

INVASION IN THE SNOW—A STUDY OF MECHANIZED WAR. By John Langdon-Davies. Houghton Mifflin Company, 1941. 206 Pages; $2.50.

Few recent books by war correspondents contain anything of direct professional value, no matter how great their general interest. *Invasion in the Snow* is an exception. The author has taken the trouble to analyze the *methods* which enabled the Finns to do so well against the overwhelming odds of Russian numerical and material superiority. He shows in detail the faults contained in the Russian manual for ski troops, and indicates the correct principles as employed by the more experienced Finns. We learn also what types of clothing, shelter, and heating arrangements the Finns had, which kept them operating while their opponents froze to death by the hundreds.

The 72-page chapter, "Finnish Guerrilla," holds particular interest for cavalrymen and is very much in line with the experience gained during the test conducted by the 4th Cavalry last winter in South Dakota, the description of which appears elsewhere in this issue.

Of general interest is a clear discussion of why and how the Finns were clearly superior in the fighting, especially in the northern part of the country, but succumbed to the Russians on the Carelian Isthmus.

In our opinion, *Invasion in the Snow* is the best work on the Russo-Finnish war that has yet appeared or is likely to appear for some time.

SPA, VERSAILLES, MUNICH. By Colonel Samuel G. Shartle, U.S.A., Retired. Dorrance and Company, Philadelphia, 1941. 134 pages. $1.50.

An adequate description of this book is contained in the Foreword, written by Lieutenant General Robert Lee Bullard, U.S.A., Retired. General Bullard says:

"This book is based largely by the writer upon his experiences, notes and impressions as a member of the Armistice Commission charged with the execution of the Armistice of the first World War. Much of the work done by

this Commission never—at the time—became known to the world and is consequently new. While for its newness it may be interesting, it is believed that the book will prove far more interesting at this time from the light that it throws, especially upon the German people, their ways, opinion of themselves and other peoples then and now.

"The writer's previous service as the American Military Attaché in Berlin and observer of the German Army, his touch with the German people and his knowledge of their character, traditions, customs and history make him especially fit to write this book. His office in the Armistice Commission at the end of the first World War and his study of conditions in the recent wars of Germany enable him to present to the reader the practical identity of the current war in Europe with the first World War—a mere continuation thereof. Thereby one is brought to remember what President Wilson said to both belligerents in proposing the Armistice in the first World War, 'Peace without victory to either side.' The difference between the two was not ended by victory and a peace; it was only a temporary suspension of hostilities, an armistice, not the end of the war."

✓ ✓ ✓

THE ART OF HANDGUN SHOOTING. By Captain Charles Askins, Jr. A. S. Barnes and Company, New York. 219 Pages; Illustrated; $2.50.

The author has drawn his material from a wealth of experience, for he has competed in hundreds of tournaments, some of which are attested to by full-page photographs of the author and his awards.

While little that is new to the old-timer may be discovered in this book, the man or woman just breaking into the sport will certainly profit from the advice and suggestions of an author who was formerly one of the outstanding tournament shots with the revolver and .22 automatic.

The chapter captions are as follows: The Appeal of Pistol Shooting, Keep in Physical Trim, Buying the First Handgun, How to Stand When Shooting, How to Grasp the Handgun, The Gun-and-Hand Contact, How to Manage the Trigger, How to Adjust the Sights, The Basic Training; Slow Fire, Advanced Training at 50 Yards, Rapid-Fire Shooting, Trying to Anchor Shot Groups, Trading for a Used Gun, Match-Shooting Psychology, The Confidence to Win, Things to be Remembered in Match Shooting, The Pistol Team and the Coach, Selecting a .45 Automatic, Successful Handling of the .45 Auto, Primary Handgun Ballistics, Shooting by Instinctive Pointing, The Pistol in Modern Warfare, Hitting Thrown Targets.

✓ ✓ ✓

MEDICAL SOLDIER'S HANDBOOK. The Military Service Publishing Company, Harrisburg, Pennsylvania, 1941. 371 Pages; $1.00.

Medical Soldier's Handbook is all that the title implies. No medical soldier should be without it. It is of convenient pocket size, illustrated and well indexed. Its chapter on *first aid* alone is worth more to every soldier than the total cost.

✓ ✓ ✓

HOW TO SAY IT IN SPANISH. By Lieutenant Colonel Harry M. Gwynne, Captain Enrique C. Canova, and Lieutenant Willard Webb. The Military Service Publishing Company, Harrisburg, Pennsylvania, 1941. 143 Pages; $.75.

This little book does not aim to *teach* Spanish. It aims

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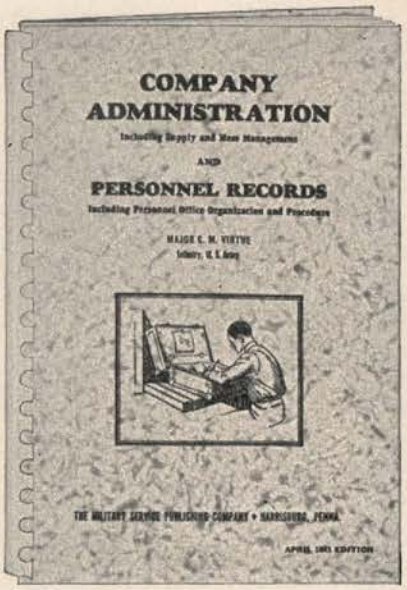

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merely to provide a quick reference for everyday and useful words and phrases—which it does to an astonishing degree. This book would be invaluable to anyone traveling in Spanish-speaking countries.

SONG AND SERVICE BOOK FOR SHIP AND FIELD. Compiled by Chaplain Ivan L. Bennett. A. S. Barnes and Company, New York, 1941. 192 Pages; $.75.

This is a service book of prayers, hymns with musical score, and a guide for military and naval funerals. It is intended not only as a ready aid to younger chaplains, but also as a guide for those who conduct divine service in the absence of a chaplain.

Current Books of Military Significance

AIR RAID PRECAUTIONS. Reprinted by permission of HM Stationery Office, London. Brooklyn: Chemical Publishing Company, 1941. Illustrated; Tables; Appendixes. $3.00.

—*Air Raid Precautions* is a reprint of the official British regulations on the subject.

CIVIL AIR DEFENSE. By Lieutenant Colonel A. M. Prentiss, General Staff Corps. New York: Whittlesey House, 1941. 334 Pages; Bibliography; Appendixes; Illustrated; Index. $2.75.

—*Civil Air Defense* is an original work, frankly borrowing heavily from the British publication as well as from other sources.

ARSENAL OF DEMOCRACY. By Burnham Finney. New York: Whittlesey House, 1941. 284 Pages; Illustrated. $2.50.

—Behind the scenes of industry.

CHEMICAL WARFARE. By Curt Wachtel. Brooklyn: The Chemical Publishing Company, Inc. 312 Pages; Index; $4.00.

Dr. Wachtel goes into the history, economic and strategical aspects, and toxicology of chemical warfare.

BEHIND THE RISING SUN. By James R. Young. New York: Doubleday, Doran & Company, 1941. 334 Pages; Illustrated; $3.00.

—Informative, provocative, and good reading.

DYKE'S AUTOMOBILE AND GASOLINE ENGINE ENCYCLOPEDIA. By A. L. Dyke. Chicago: The Goodheart-Willcox Company, Inc., 1941. 1,483 Pages; 4,600 Illustrations; Index; $6.00.

—An old stand-by in the commercial automotive field applicable to Army motorization.

THE MONROE DOCTRINE AND THE GROWTH OF WESTERN HEMISPHERE SOLIDARITY. By Richard K. Showman and Lyman S. Judson. New York: The H. W. Wilson Company, 1941. 296 Pages; $1.25.

—A good summary.

BATTLE FOR THE WORLD. By Max Werner. New York: Modern Age Books, 1941. 383 Pages; Maps; Index; $3.00.

—Summary of the world situation.

ALL AMERICAN AIRCRAFT. By Ernest K. Gann. New York: Thomas Y. Crowell Company, 1941. 122 Pages; Illustrated; Index; $2.00.

—What today's planes look like, and what they do.

THIS IS LONDON. By Edward R. Murrow; edited by Elmer Davis. New York: Simon and Schuster, 1941. 237 Pages; $2.00.

—A collection of some of Mr. Murrow's broadcasts from London during the present war.

I SAW ENGLAND. By Ben Robertson. New York: Alfred A. Knopf, Inc., 1941. 213 Pages; $2.00.

One of the current flood of books by those who have lived through the bombings and invasion fears.

UNITED WE STAND! DEFENSE OF THE WESTERN HEMISPHERE. By Hanson W. Baldwin. New York: Whittlesey House, Inc., 1941. 374 Pages; Map; $3.00.

—A scholarly estimate of the situation.

CANADA FIGHTS. Edited by J. W. Dafoe. New York: Farrar & Rinehart, Inc., 1941. 274 Pages; Index; $2.00.

—A good account of Canada's war efforts.

AMERICA IS WORTH FIGHTING FOR. By Ralph Ingersoll. New York: The Bobbs-Merrill Company, 1941. 152 Pages: $1.50.

—Attacks the isolationists.

JAPAN UNMASKED. By Hallett Abend. New York: Ives Washburn, Inc., 1941. 317 Pages; Index; $3.00.

—Saw a lot during his many years in the Far East.

CONCERNING WINSTON SPENCER CHURCHILL. By Sir George Arthur. New York: H. C. Kinsey & Company, 1941. 179 Pages; Index; $2.00.

—A good, brief book on England's war leader.

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Horse Feathers

Men of Parts

A mechanized cavalryman is a man of spare parts.
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In a small southern town after an old darky heard about the need for economy in gasoline, he borrowed a horse and surrey, parked in front of the "general store," and yelled, "Taxi?" His first passenger was a salesman in a hurry to catch the train about two blocks distant. The darky commanded: "Ten-shun' " . . . "For'ard, Haow!" . . . "Trot, Haow!" . . . "Gallop, Haow!" They passed the railroad station going full speed, and when a half mile beyond, the negro turned around and exclaimed, "Boss, you'd better jump fo' yo' life, 'cause dis yere am a ex-cav'ry hoss, an' befo' Gawd, I'se done fergit de stop comman'."

Often 'tis faster to make haste slowly.

COLORED SGT.: "When I says 'Bout face,' you place de . . . de toe ob yo' right foot six inches to de rear and three inches to de lef' ob yo' lef' foot, an' just *ooze* 'round like dis. Sabby?"

ELDERLY LADY VISITING THE POST: "Chaplain, I suppose you go everywhere these cavalrymen go?"

CHAPLAIN, KINDLY: "No, ma'am, not everywhere—only in *this world.*"

Latrine Lizards are of two breeds—those who are trying to verify floating rumors; and those who start the floating.

Mental panic is hearing "first call" for *Retreat* when you are taking a bath.

When maneuvers begin there is one reliable weather report—RAIN!

TRAINEE: "The thing about this army life that has impressed me most is that my brother-in-law can't wear my clothes."

The best defense slogan that we have seen (reference strikes): *"Don't let them catch us with our plants down!"*

Sacrifice

SGT. GLOOM: "When this mess is over—win or lose—it will never be the same. During all my years of service I've been dreaming of retiring, having a cozy little home with BABIES, juleps, horses, and chickens. Well, I guess I'll now have to cut out the babies."

Provost Sgt. says, "Roughly speaking, one trooper out of every hundred is in the Guard House."
Roughly speaking is what does it!

Usually a horse does not care whether his meals are served *a la cart* or *table d'oat* just so long as he gets his hay *a la mowed.*

MESS SGT.: "You should eat onions; they build you up physically."
TRAINEE: "Yes, I know, Sarg, but they pull you down socially."

TRAINEE: "Does that horse ever kick you?"
PVT. SPEED: "Naw, but sometimes he kicks where I've just been."

"Sergeant Murphy's new baby is all set for war service."
"How so?"
"Well, she's *red* and *cross!*"

EXAMINER: "I'm sorry, lad, but you have only one eye."
SELECTEE: "Well, sir, how many eyes does it take in the cavalry to fire a pistol, rifle, machine gun, mortar; drive a scout car, bantam, motorcycle, truck or tank, an' ride a horse?"

TROOPER I: "Was that a new gal I saw you with last night?"
TROOPER II: "Nope, just the old one painted over."
TROOPER III: "An' *shelacked!*"

That's Mrs. Grabbitt—a great war worker. She already has married four of her daughters to cavalrymen!

Old Timer says: "When a gal dates a cavalryman she usually is prepared to take the hurdles."

Wanted: A good horse-laugh!

C. O's of Cavalry Units

Regular Army (July 15, 1941)

1st Cavalry Division, Major General Innis P. Swift.
91st Reconnaissance Squadron, Lt. Colonel Eugene A. Regnier.
Antitank Troop, 1st Cavalry Division, Major Don E. Carleton.
1st Cavalry Brigade, Brigadier General K. S. Bradford.
5th Cavalry, Colonel Henry J. M. Smith.
12th Cavalry, Colonel Wilfrid M. Blunt.
2d Cavalry Brigade, Brigadier General C. H. Gerhardt.
7th Cavalry, Colonel Thoburn K. Brown.
8th Cavalry, Colonel J. K. Brown.

2d Cavalry Division, Major General John Millikin.
Antitank Troop, 2d Cavalry Division, Captain D. P. Christensen.
3d Cavalry Brigade, Brigadier General Terry de la M. Allen.
2d Cavalry, Lt. Colonel John T. Cole.
9th Cavalry, Colonel Duncan G. Richart.
4th Cavalry Brigade, Colonel Duncan G. Richart (Acting).
10th Cavalry, Colonel Paul R. Davison.
14th Cavalry, Lt. Colonel John T. Pierce.

3d Cavalry, Colonel William W. Gordon.
4th Cavalry (H-Mecz), Colonel John B. Coulter.
6th Cavalry (H-Mecz), Colonel John A. Considine.
11th Cavalry, Colonel Harold M. Rayner.
26th Cavalry (PS), Lt. Colonel Clinton A. Pierce.
1st Cavalry (Armored), Colonel John F. Davis, Cavalry.
13th Cavalry (Armored), Colonel Raymond E. McQuillen, Cavalry.
Cavalry Detachment, Fort Myer, Virginia, Captain O'Neill K. Kane.
U.S.M.A. Cavalry Squadron, Lt. Colonel James C. R. Schwenck (Retired).
1st Reconnaissance Troop, Captain James B. Quill.
2d Reconnaissance Troop, Captain Anthony K. Kleitz, Jr.
3d Reconnaissance Troop, Major Harry W. Miller.
4th Reconnaissance Troop, Major Arthur W. Belden.
5th Reconnaissance Troop, Captain Emory D. Stoker.
6th Reconnaissance Troop, Captain Cecil Himes.
7th Reconnaissance Troop, Major Milo H. Mattison.
8th Reconnaissance Troop, Captain Brainard S. Cook.
9th Reconnaissance Troop, Captain William F. Damon, Jr.
1st Reconnaissance Troop (Sep) Panama, Major Clayton J. Mansfield.

Cavalry Replacement Training Center, Brigadier General Harry D. Chamberlin.
The Cavalry School, Brigadier General Robert C. Rodgers.

National Guard (on active duty)

56th Cavalry Brigade, Brigadier General W. B. Pyron.
112th Cavalry, Colonel Clarence E. Parker.
124th Cavalry, Colonel Calvin B. Garwood.
101st Cavalry (H-Mecz), Colonel Gilbert E. Ackerman.
102d Cavalry (H-Mecz), Colonel Donald W. McGowan.
104th Cavalry (H-Mecz), Colonel Albert H. Stackpole.
106th Cavalry (H-Mecz), Lt. Colonel Charles R. Johnson, Jr., (RA).
107th Cavalry (H-Mecz), Colonel Woods King.
113th Cavalry (H-Mecz), Colonel Maxwell A. O'Brien.
115th Cavalry (H-Mecz), Colonel R. S. Grier.

"The men of all ranks who served with me in France added a brilliant page to the record of the American soldier's devotion to his country. No commander was ever privileged to lead a finer force, no commander ever derived greater inspiration from the performance of his troops."

—PERSHING.

War Department Changes

Cavalry Personnel

(From May 20, 1941 to July 12, 1941)

Lieutenant Thomas B. Bartel, Fort Oglethorpe, Ga., to 4th Armd. Div., Pine Camp, N. Y.

Lieutenant Geo. C. Benjamin, Cav., Fort Myer, Va., to 3rd Armd. Div., Camp Polk, La.

Colonel Robt. Blane, upon his own application, will retire August 31, forty years' service; relieved San Francisco.

Lieutenant Colonel Jacob A. Blankenship, from Brooklyn, N. Y., June 2, to recruiting station, N. Y.

Lieutenant Colonel W. W. Boon, relieved Fort Mason, July 28; assigned 4th Armored Div., Pine Camp, N. Y.

Lieutenant Walter H. Boyd, Jr., from Brooks Field, to 1st Armd. Div., Fort Knox, Ky.

Lieutenant V. L. Boylan, relieved Ft. Riley, Kans.; assigned 3d Armd. Div., Camp Polk, La.

Lieutenant D. P. Briggs, relieved Fort Bliss, Texas; assigned 4th Armd. Div., Pine Camp, N. Y.

Lieutenant Alfred W. Bruneau, Fort Meade, S. K., to 3d Armd. Div., Camp Polk, La.

Lieutenant Harry Bullock, from Brooks Field, to 1st Armd. Div., Fort Knox, Ky.

Lieutenant S. M. Case, relieved Fort Riley, Kansas, assigned 3d Armd. Div., Camp Polk, La.

Major Chester A. Clark, from Fort Jackson, S. C., to Cav. Repl. Training Center, Ft. Riley, Kans.

Lieutenant Colonel C. L. Clifford, relieved recruiting, Jackson, Mass.; assigned recruiting, Hq., 4th Corps Area, Atlanta.

Lieutenant Colonel L. H. Collins was retired, physical disability, June 30.

Lieutenant H. L. Connor, Jr., relieved Fort Bliss, Texas; assigned 2d Armd. Div., Fort Benning, Ga.

Lieutenant Colonel R. E. Craig, assigned command of Camp Claiborne, La.

Captain B. M. Creel, relieved Mass. State College, Amherst, August 1; detailed Staunton Military Academy, Virginia.

First Lieutenant Eugene O. Crocker, from Fort Bragg, N. C., to assistant to Supt., Army Trans. Serv., Port of Embarkation, Fort Mason, Calif.

Captain Earnest H. Daniel, Jr., from Baltimore, Md., to off. C. of S., Washington, D. C.

Second Lieutenant W. M. Delaney, relieved 2d Cav. Div., Fort Riley, July 17; assigned 1st Armored Div., Fort Knox.

Lieutenant Egbert H. Don, from Maxwell Field to A. C. Adv. Flying School, Barksdale Field, La.

Colonel K. G. Eastham, relieved detail as members of G. S. C., assignment to G. S. with troops, and Quarry Heights, C. Z.; assigned Armored Force, Fort Knox.

Major G. G. Elms, detailed as member of G. S. C.; assigned G. S. with troops, effective upon his arrival at Camp Forrest, Tenn.

Lieutenant Colonel F. W. Fenn, relieved Fort Sam Houston, assigned 4th Armd. Div., Pine Camp, N. Y.

Lieutenant Colonel H. J. FitzGerald, detailed as member of G. S. C.; assigned G. S. with troops, and I Armored Corps, Fort Knox; relieved present duty that station.

Lieutenant Colonel A. E. Forsyth, detailed as member of G. S. C., and Cav. Board, Fort Riley; assigned G. S. with troops, and 2d Cav. Div., Fort Riley.

Major Andrew A. Frierson, Fort Riley, Kans., to Cav. Repl. Center, that station.

Lieutenant J. P. Gerald, relieved Fort Riley, Kansas, assigned 3d Armd. Div., Camp Polk, La.

Captain T. D. Gillis, relieved Fort Riley, July 20; assigned 4th Armored Div., Pine Camp, N. Y.

Lieutenant E. F. Gillivan, relieved Fort Riley, Kans.; assigned 2d Armd. Div., Fort Benning, Ga.

Captain G. W. Gleye, relieved Fort Riley, Kans.; assigned 2d Armd. Div., Fort Benning, Ga.

Colonel F. D. Griffith, Jr., assigned command of Fort Bliss.

First Lieutenant P. B. Griffith (now Captain Army of the U. S.), transferred to A. C., on May 31.

Captain Charles A. Green, from McChord Field, Wash., June 21, to Pendleton Air Base, Oregon.

Lieutenant W. Greenwood, Jr., Fort Myer, Va., to 2d Armd. Div., Fort Benning, Ga.

First Lieutenant J. L. Grubb, relieved Fort Sam Houston, June 29; assigned 2d Armored Div., Fort BeBnning.

Major P. C. Hains, III, relieved U. S. M. A., June 30; assigned 1st Armored Div., Fort Knox.

Lieutenant Colonel E. N. Harmon, relieved office, C. of S., Washington, D. C.; assigned GHQ, Army War College.

Captain Paul D. Harkins, prior orders revoked; from Fort Myer, Va., June 30, to 1st Cav. Div., Fort Bliss, Texas.

Captain Jesse M. Hawkins, Jr., to Hq. Armd. Force, Fort Knox, Ky.

Major William O. Heacock, from Ft. Riley, Kans., June 16, to 3d Armd. Div., Camp Polk, La.

First Lieutenant Frank C. Healey, from Ft. Riley, Kans., to A. C., Advanced Flying Sch., Brooks Field, Texas.

Lieutenant H. P. Heid, Jr., relieved Fort Bliss, Texas; assigned 4th Armd. Div., Pine Camp, N. Y.

Captain John McI. Henderson, from Moffet Field, Calif., May 30, to A. C. Advanced Flying School, Mather Field, Calif.

Lieutenant Colonel Stanton Higgins, relieved Johnson City high schools, Tenn., July 5; assigned 2d Armored Div., Fort Benning.

Captain Cecil Himes, relieved Fort Riley; assigned Fort Leonard Wood.

Lieutenant G. C. Hines, relieved Fort Bliss, Texas, assigned 2d Armd. Div., Fort Benning, Ga.

Captain Hamilton H. Howze, from Fort Myer, Va., to 1st Cav. Div., Fort Bliss, Tex.

Lieutenant Colonel Dwight Hughes, relieved as instructor, N. J. N. G., Newark, and temporary duty with 102d Cav., Fort Jackson, June 26; assigned 6th Cav., Fort Oglethorpe.

Colonel G. B. Hunter, relieved O. R., 4th C. A., New Orleans; assigned New Orleans Port of Embarkation.

Lieutenant Frederick W. Hutchinson, from Maxwell Field, to A. C. Advanced Flying School, Barksdale Field, La.

Lieutenant Colonel Wharton G. Ingram, from New York, N. Y., June 3, to Indianapolis, Ind.

Lieutenant Victor L. Johnson, Jr., Fort Meade, S. D., to 4th Armd. Div., Pine Camp, N. Y.

Colonel Guy Kent, Boston, Mass., retired October 31, because of age, 64.

Lieutenant Edgar C. Kenyon, to A. C. Advanced Flying School, Phoenix, Ariz.

Captain A. F. Kleitz, Jr., relieved 6th Cav., Fort Oglethorpe, July 19; assigned 2d Recon. Troop, Fort Sam Houston.

Lieutenant Colonel Harry Knight, relieved 2d Cav. Div., Fort Riley, August 30; assigned staff, Cavalry School, that station.

Major L. K. Ladue and Captain W. H. Greear, relieved 1st Cav. Div., Fort Bliss, June 28; assigned staff, Cavalry School, Fort Riley.

Captain Harry E. Lardin, Fort Oglethorpe, Ga., to 2d Armd. Div., Fort Benning, Ga.

Second Lieutenant Horace S. Levy, from Stockton, Calif., May 30, to A. C. Advanced Flying School, Mather Field., Calif.

Captain Norman A. Loeb, Fort Riley, Kans,. to faculty, Cav. School, that station.

Major C. J. Mansfield, relieved C. Z.; assigned 4th Armored Div., Pine Camp., N. Y.

Lieutenant C. L. Miller, relieved Ft. Riley, assigned 4th Armd. Div., Pine Camp, N. Y.

Lieutenant Nelson R. Moon, to A. C. Advanced Flying School, Phoenix, Ariz.

Major R. M. Neal, relieved 1st Cav. Div., Fort Bliss, July 13; assigned 4th Armored Div., Pine Camp, N. Y.

Major A. G. Olsen, detailed in I. G. D., July 22; relieved Rogers High School, Newport R. I.; assigned Philippine Islands, sailing from San Francisco, July 24.

Major Kevin O'Shea, to Hq. Armd. Force, Fort Knox, Ky.

Lieutenant L. E. Peterson, relieved Ft. Riley, Kans.; assigned 3d Armd. Div., Camp Polk, La.

Major J. H. Phillips, detailed as member of G. S. C.; assigned W. D. G. S., and office, C. of S., Washington, D. C.; relieved 6th Cav., Fort Oglethorpe.

Captain James H. Polk, from Fort Myer, Va., June 15, to U. S. M. A., West Point, N. Y.

Major C. W. A. Raguse, relieved staff, Cav. School, Fort Riley, June 28; assigned 4th Cav., Fort Meade, S. Dak.

Captain Russell V. Ritchey, prior orders amended; to Philippine Dept., sail San Francisco, August 7.

Major T. D. Roberts, detailed as member of G. S. C.; assigned G. S. with troops, and Hq., 2d Cav. Div., Fort Riley; relieved 1st Cav. Div., Fort Bliss.

Major John L. Ryan, Jr., to Hq. Armd. Force, Fort Knox, Ky.

Lieutenant Harry A. Schendel, Jr., Ft. Myer, Va., to 2d Armd. Div., Fort Benning, Ga.

Lieutenant E. W. Schroeder, relieved Fort Riley, Kans.; assigned 2d Armd. Div., Fort Benning, Ga.

Lieutenant Colonel J. P. Scott, detailed in I. G. D., June 21; relieved 2d Armored Div., Fort Benning; assigned 3d Army Div., Camp Polk, La.

Major Hayden A. Sears, from Fort Knox, Ky., to Hq., 4th Armd. Div., Pine Camp, N. Y.

Maj. V. F. Shaw, relieved Fort Riley; assigned with G. S. C., office, C. of S., Washington, D. C.

Captain Garrett B. Shomber, Omaha, Neb., to G. S. C., 7th Corps Area, that station.

Lieutenant Colonel P. B. Shotwell, relieved Logan Senior High School, Utah; assigned as assistant military attaché, Buenos Aires, Argentina; to report June 15 for temporary duty in office, A. C. of S., G-2, Washington, D. C.

Lieutenant S. Preston Smith, to Hq. Armd. Force, Fort Knox, Ky.

Major Vernon Snively, from Presidio of Monterey, Calif., June 9, to office, C. of S., Washington, D. C.

Captain E. D. Still, relieved Fort Bliss, Texas; assigned 4th Armd. Div., Pine Camp, N. Y.

Captain E. H. F. Svensson, Ir., relieved detail in Sig. C. and assignment 2d Sig. Serv. Co., Washington, D. C., June 18; assigned 4th Armored Div., Pine Camp, N. Y.

Second Lieutenant Robert B. Thieme, prior orders amended; from present duty, Moffet Field, Calif.

Lieutenant Colonel C. G. Thompson, relieved 113th Cav., Camp Bowie, Texas; assigned Cav. R. T. C., Fort Riley.

Captain E. J. Treacy, Jr., relieved 4th Armd. Div., Pine Camp, N. Y., July 20; assigned 1st Cav. Div., Fort Bliss.

Major S. P. Walker, Jr., detailed as member of G. S. C., assigned G. S. with troops, and G.H.Q., Army War College, Washington, D. C.; relieved Armored Force School, Fort Knox.

Second Lieutenant George M. White, from Fort Oglethorpe, Ga., June 5, to 4th Armd. Div., Pine Camp, N. Y.

Lieutenant Colonel E. A. Williams, assigned additional duty with G. H. Q., Army War College.

Captain Shelby F. Williams, from Seeley, Calif., June 16, to 3d Armd. Div., Camp Polk, La.

Captain Arthur H. Wilson, Jr., from Stockton, Calif., to 2d Cav. Div., Fort Riley, Kans.

CAVALRY OFFICERS (Retired)

On Active Duty or Under Orders as of June 30, 1941.

Colonel George H. Baird, Recruiting, Hq. Second Corps.

Major Raymond C. Blatt, Columbus High Schools, Columbus, Ga.

Captain David E. Bradford, Recruiting, Hq. Eighth Corps Area, Fort Sam Houston, Tex.

(First Lieutenant) Captain Richard H. Bridgman, Phoenix Union High Schools, Phoenix, Ariz.

Colonel Levi G. Brown, Confidential.

Colonel Henry T. Bull, Ninth C. A. S. C., San Luis Obispo, Calif.

Major Charles W. Burkett, Louisville Male High School, Louisville, Ky.

(Major) Lieutenant Colonel Carl E. Byrd, Recruiting, Cincinnati, Ohio.

Lieutenant Colonel Robert E. Cormody, Hq. Fourth Corps Area, Atlanta, Ga.

Lieutenant Colonel Carleton G. Chapman, Office Inspec. Gen., Washington, D. C.

Lieutenant Colonel Archibald T. Colley, Selective Service System, Atlanta, Ga.

Lieutenant Colonel Jay K. Colwell, C. C. C. Affairs, Eighth Corps Area.

Colonel Archibald F. Commiskey, N. Y. A., Baltimore, Md.

(Lieutenant Colonel) Colonel Vaughan W. Cooper, Office, Chief of Staff.

Major Charles Cramer, Oklahoma Military Academy, Claremore, Okla.

Captain Buckner M. Creel, Staunton Military Academy, Staunton, Va.

Lieutenant Colonel John A. Degen, Hq. First Corps Area.

Colonel Clarence A. Dougherty, Dallas High Schools, Dallas, Texas.

(First Lieutenant) Captain Arthur D. Edmunds, Confidential.

Lieutenant Colonel Elbert E. Farman, Jr., U. S. M. A., West Point, N. Y.

Colonel Roger S. Fitch, Hq. Fort Ord., Calif.

Lieutenant Colonel Walton Goodwin, Jr., C. C. C., Hq. Eighth Corps Area.

Major Elbert L. Grisell, San Francisco Port of Embarkation, Fort Mason, Calif.

Lieutenant Colonel Henry W. Hall, St. Ignatius High School, San Francisco, Calif.

Lieutenant Colonel Roy W. Holderness, Shreveport High School, Shreveport, La.

(Major) Lieutenant Colonel Francis R. Hunter, University of California, Berkeley, Calif.

(Captain) Major Charles M. Hurt, Savannah High Schools, Savannah, Ga.

Major Floyd M. Hyndman, Armored Force, Fort Knox, Ky.

Major Leslie B. C. Jones, N. Y. S. Liaison Office, Ninth Corps Area.

Captain Alfred P. Kelley, Ninth C. A. S. C., Portland Air Base, Portland, Oregon.

Captain William H. Killian, Logan Senior High School, Logan, Utah.

Colonel Richard H. Kimball, C. C. C., Ft. Oglethorpe, Ga.

Major General (Colonel) Leon B. Kromer, Director, The Cavalry Board, Fort Riley, Kansas.

First Lieutenant Irvine L. McAlister, Ashland High School, Ashland.

(Captain) Major Oscar M. Massey, Guthrie High School, Guthrie, Okla.

Major Alberto E. Merrill, Recruiting, Los Angeles, Calif.

(Captain) Major Anderson H. Norton, Canon City High Schools, Canon City, Colo.

Colonel Llewellyn W. Oliver, Office of the Quartermaster General, Washington.

Major Alexander G. Olsen, I. G. D., Philippine Department.

(Major) Lieutenant Colonel Vernon L. Padgett, Seventh C. A. S. C., Fort Riley, Kans.

Lieutenant Colonel Lawrence Patterson, Glendale High Schools, Glendale, Ga.

(Captain) Major Orland S. Peabody, Pueblo High Schools, Pueblo, Colo.

Lieutenant Colonel John A. Pearson, Org. Res., Oklahoma City, Okla.

Colonel Albert E. Phillips, Jeffersonville, Ind., Q. M. Depot.

Colonel Henry R. Richmond, Hq. Fourth Corps Area.

Lieutenant Colonel John E. Selby, Johnson City High Schools, Johnson City, Tenn.

Captain George H. Shea, C. C. C., Sacramento, Calif.

Major John F. Stevens, Agri. & Mech. College of Texas, College Station, Texas.

Major Horace Stringfellow, P. M. S. & T., Montgomery High Schools, Montgomery, Ala.

Major Arthur Vollmer, Recruiting, New York, N. Y.

Major James C. Ward, C. C. C., Presidio San Francisco, Calif.

Major James B. Wise, Jr., Houston High Schools, Houston, Texas.

Major Delmore S. Wood, University of Arizona, Tuscon, Arizona.

NOTE.—*It is requested that any retired cavalryman who is now on active duty and whose name does not appear on this list please notify* THE CAVALRY JOURNAL *or the Office, Chief of Cavalry.*

Hundred Percenters

Organizations with 100% membership in the U. S. Cavalry Association (August 1st, 1941).

3d Cavalry, Fort Myer, Va., Colonel W. W. Gordon, Commanding.

2d Cavalry Brigade Headquarters, Fort Bliss, Colonel J. K. Brown, Commanding (acting).

56th Cavalry Brigade Headquarters, Fort McIntosh, Texas, Brigadier General Walter B. Pyron, Commanding.

102d Cavalry (M-Mecz), Fort Jackson, S. C., Colonel Donald W. McGowan, Commanding.

106th Cavalry (H-Mecz), Camp Livingston, La., Lt. Colonel Charles R. Johnson, Jr. (RA), Commanding.

113th Cavalry (H-Mecz), Camp Bowie, Texas, Colonel Maxwell A. O'Brien, Commanding.

1st Cavalry Troop, Reconnaissance (Sep.), Fort Davis, C. Z., Major Clayton J. Mansfield, Commanding.

1st Reconnaissance Troop, Fort Devens, Mass., Captain James B. Quill, Commanding.

3d Reconnaissance Troop, Fort Lewis, Washington, Major Harry W. Miller, Commanding.

7th Reconnaissance Troop, Fort Ord, California, Major Milo H. Matteson, Commanding.

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Notice to PMS&T's!

The W. D. Program of Instruction, dated May 1, 1941, necessitated a complete revision of our 1940-41 Manuals. While there are few changes in the required subjects and in the scope of instruction, practically all subjects had to be rewritten or revised to meet the important changes which have occurred in training and tactical methods during the past year.

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SOVIET GUERR

Excerpts from *Information Bulletin,* issued by the Embassy of the Union of Soviet Socialist Republics, Washington. Some of the methods employed by the Soviet guerrillas are indicated.—*Editor.*

MOSCOW, July 17, 1941 (Soviet Information Bureau)—Jr. Lt. Pilots Polyakov and Piskarev were making their way through the enemy rear. When they reached the German-occupied village of "O" they found a heap of still glowing ashes in place of streets and houses. On the eve of the occupation the collective farmers had destroyed everything in the village, abandoned it, and joined the guerrillas.

The lieutenants described the courage and fearlessness of the commander of a guerrilla detachment nicknamed "Grandpop." His unit terrorizes the fascists for miles around. These guerrillas destroyed seven German tanks and telephone and telegraph wires over a large stretch of territory, and pursued and annihilated a group of enemy motorcyclists.

* * *

After the attack by Hitlerite Germany on the Soviet Union, Polish guerrillas noticeably intensified their fight against the German enslavers. Much trouble and uneasiness was caused Gestapo agents by the "Association of Struggle for Liberation from the Nazis." In one of its latest appeals this association says:

"The war against the German invaders is not finished. Now, when Hitler is preoccupied with the war against the Soviet Union, the position of the occupation authorities in Poland is more vulnerable than ever. Everyone must behave as if he were a soldier at the front: whenever possible damage the enemy, cause explosions, set fires, and mercilessly kill the occupying forces. The tyrants should be fought with their own weapons. Each armed German is a bitter enemy of freedom and civilization. The Germans should be terrorized in every way and kept in constant fear for their hides. Strike at the Hitlerites always and everywhere."

* * *

Soviet press reports, July 17: The guerrilla movement of Soviet patriots in the enemy rear is extending daily. One guerrilla unit skilfully hiding in forests in the vicinity of German-occupied villages within a short time destroyed seven enemy tank crews and put their machines out of commission. They are perfectly familiar with the terrain and easily escape pursuit. Their unit frightened the Nazis to such an extent that they now fear to camp in the neighborhood villages. The Germans usually entrench for the night outside of the villages and place a strong guard around the camp. The guerrillas destroy them without mercy.

In the sector of railway stations "Z" and "X" guerrillas destroyed the track in many places. A few days ago guerrillas suddenly surrounded a large column of Germans who halted in the area and opened fire on them. The Germans fled, leaving behind their equipment. The detachment killed several dozen enemy soldiers. Ten Nazis surrendered. Remaining on the battlefield were three enemy antitank guns, a large number of motoreycles and bicycles, automatic rifles and ammunition. Now the guerrillas conduct their raids on motorcycles and bicycles.

* * *

Cossacks to the Front

Rostov-on-Don, July 17. Collective farmers of the Don region have sent many units of dashing cavalrymen to the Red Army. In addition, it was reported in Moscow today, a formidable Cossack volunteer force is gathering against Hitler. Old and young, anyone who can keep in the saddle, shoot and handle a sword, is welcome in this force.

Powerful units of the popular Cossack volunteer force have already been formed in Bogaevskaya, Tsimlianskaya and many other Cossack villages.

* * *

When the Nazis approached the village of Voropaevo

the houses of the Krasnyi Looch collective farmers were already emtpy. Women, children and old people had left the village. Cattle, machinery and grain were then taken to the rear. All able-bodied men, led by civil war veteran Vorona, became guerrillas.

A few days later the guerrilla unit received its baptism of fire. They learned that a Nazi motorized column was to pass through the village at night. Armed with grenades and rifles, the guerrillas hid on the edge of the forest. Late at night a detachment of Nazi motorcycles and tanks arrived. The Nazis camped for the night, awaiting a fuel transport. When the Germans fell asleep, the guerrillas disposed of the sentinels and within a few minutes completely destroyed the enemy column.

Moscow, July 18 (Soviet Information Bureau)—A mounted guerrilla unit blew up a bridge the Germans had built across a river. One group of guerrillas dis-

LLA WARFARE

mounted and hid in bushes on the bank, awaiting the German transports. Another group took cover in a nearby copse. That night German truck columns reached the river and jammed the bank at the pile of charred debris that had been the bridge. Drivers climbed out of their cabs to find the cause of the forced halt. Armed escort cars also piled up.

Just then the guerrillas opened machine gun fire from their ambush. Several ammunition trucks blew up, causing panic in the Nazi ranks. Those who fled were pursued and shot pointblank by mounted guerrillas who rushed up from the copse. The column's entire escort, consisting of 24 German soldiers and one officer, was annihilated. The guerrillas captured a great deal of booty and took to the woods.

* * *

Collective Farmers Turn Guerrillas

Moscow, July 19. A guerrilla detachment, the Moscow Information Bureau reports today, composed of members of the "Ilyich" and "Krasnyi Pogranichnik" collective farms discovered 20 large Nazi tanks halted in a hollow. The guerrillas noticed the crews from two tanks distributing fuel to the remaining 18. Realizing the tanks had halted because of fuel shortage, the guerrillas sent three scouts to find the regular Red Army units.

An ambush was laid ten kilometers back along the road behind the Nazi tanks. In about six hours two German gasoline trucks appeared on the road, proceeding towards the stalled tanks. Trees felled across the road by the guerrillas brought them to a halt. The drivers and soldiers did not offer resistance, and both trucks were blown up. The next morning Soviet dive-bombers demolished the enemy tanks.

* * *

Guerrillas Organize Behind Germans

Moscow, July 22. A Red Army unit commanded by Major B. found itself in the enemy rear. Cut off from its main force, it continued to fight. On July 10 the unit commander obtained the full text of Stalin's address from the guerrillas. The major called a conference of the commanders and said, "From now on we change to guerrilla methods of warfare." Each commander was given a concrete fighting assignment. Then measures were taken to establish communication with the Red Army lines.

Recently a delegate from Major B's unit arrived at Red Army headquarters with a report on his unit's achievements. The delegate reported that his group was damaging the enemy's communications. At the same time it served as center of the guerrilla movement for a large territory. The commander gives the guerrillas assignments and personally leads raids on Nazi columns, supplies, trains and supply stations. The ranks of the guerrillas are swelling every day.

Soviet Information Bureau, July 24. A guerrilla party captured the German-occupied village of "N" in a night raid. The village garrison, consisting of 40 German soldiers and two officers, was exterminated. The guerrillas also captured and returned to the peasants a train of carts loaded with property looted by the Nazis and prepared for shipment to Germany.

* * *

Guerrillas Rout Tanks

The Soviet Information Bureau reports that a guerrilla detachment commanded by Major Tugarinov, operating in the enemy rear, routed a Nazi tank company in the village of "S" on the night of July 20. Twenty-two German soldiers, 15 tanks and two fuel tank cars were captured.

The same unit captured five food and fuel trucks within a few days.

* * *

Guerrillas Capture German Tank Specialist, General Guderian

In an article entitled "The Theory and Practice of General Guderian," *Pravda* wrote on July 24:

General Guderian is the most prominent theoretician of the tactics of tank and armored troops. He is the author of the doctrine of lightning progress of tank divisions without regard to their rear or contact with other troops. Such is General Guderian's theory, expounded in his latest book.

Evidently the book is actually his last, and he will not be able to revise it on the basis of his personal experience in the war with the U.S.S.R. But General Guderian's practice has diverged from his theory by a wide mark.

Lately when he was proceeding in the rear of a tank and armored car corps he was taken prisoner by one of our guerrilla parties. He found out in practice what an unconsolidated rear means.

According to some European newspapers, General Guderian attempted to flee but was killed. The German press very diffidently tries to deny this and assumes that this theoretician somehow managed to escape from the embarrassing situation and flee on foot.

It should be remembered that the best general of the German Tank Corps, General Schmidt, commander of the 39th Tank Corps, also fell victim to this theory, together with the finest German tank divisions, which were severely battered in the very first battles with the Red Army.

* * *

Guerrillas Cut Nazi Communications

Soviet Information Bureau, July 26—*Guerrilla troops in the German rear, according to the Soviet press, continue daring attacks on Nazi motorized units. The guerrillas are provided with machine guns, grenades and antitank weapons and adequate supplies of ammunition. One of their chief functions is to disrupt enemy communications and supply columns.*

Scouts

Cossacks

Recently, it is reported, guerrillas fought a three hour pitched battle with a large Nazi force which they ambushed as it passed through a marsh. Most of the Germans were killed.

A Norwègian guerrilla detachment is reported operating behind Nazi lines in northern Finland under a Commander Larsen. Recently it is said to have attacked a Nazi truck column, destroying 15 trucks and killing several Germans.

* * *

Budyenny Calls For Guerrilla War

Soviet Information Bureau, August 1—*The Soviet press reported today that Marshal Semyon Budyenny, Commander of the Soviet Southwestern Front, and Nikita Khrushchev, First Secretary of the Central Committee of the Communist Party of the Ukrainian S.S.R., made the following appeal to the population of territory occupied by the enemy:*

Having brought up fresh forces, our powerful Red Army each day deals heavier blows to the Nazi bands. To help the Red Army, a mighty people's force has arisen throughout the whole territory which the Germans managed to occupy in the first days of the war.

To you men and women of the districts occupied by the German Nazis we address ourselves. Those who are able to handle arms—join guerrilla detachments. Create new ones. Annihilate the hateful German troops. Exterminate the Nazis like mad dogs.

Derail trains. Disrupt communications. Blow up ammunition dumps. No single bushel of grain is to be left for the enemy. Mow as much as you need for the near future and destroy the rest. Destroy the plantations of industrial crops—beet-root, koksagyz (rubber plant), flax.

The hour of victory is at hand. Exert all efforts to fight the enemy and destroy him.

Soviet Information Bureau, August 5—The Soviet press reports especially heavy guerrilla action along the highway between the Soviet border and the city of Bobruisk. Stubborn encounters occur nearly every day. Recently the men of a large collective farm in this area fought against the Germans for two days, finally retiring into woods on the farm property.

Another guerrilla detachment composed of farmers and town workers, headed by a former factory manager, surprised a German armored detachment and captured a tank, ten armored cars and an antitank gun. With their new motorized equipment manned by factory machinists and collective farm tractor drivers, they are continuing operations against the Nazis.

* * *

August 8—The Soviet Information Bureau reports continuous guerrilla activity behind the German lines. Near the village of Vitachevo Soviet guerrillas wiped out a reconnoitering party of 50 German cyclists accompanied by three motorcyclists, killing 40 of them.

Near Novograd-Volynsk, collective farmers set fire to a hay field in which German trench mortar and antitank gun units had taken cover. Fire and the explosion of their own shells killed a number of the Germans, who were obliged to abandon their equipment.

* * *

Behind Enemy Lines

Soviet Information Bureau, August 13—Reports of guerrilla activity behind German lines continue to fill the Soviet press. Among recent stories are the following:

A guerrilla commander named Yakovenko and his men captured a railway siding in the area of "N." He learned, while his men were destroying equipment and rolling stock, that enemy troops were approaching the station by rail. Entering a German locomotive which was stationed at the siding, Yakovenko set the train going. It collided at full speed with the oncoming troop train and derailed 15 cars, which were completely smashed.

A German general who had stopped in the village of "L" because his car had broken down was captured by a guerrilla detachment commanded by one Vasilyev. Near the village of "P" another guerrilla group ambushed German troops and shot two Nazi lieutenants.

Two German tanks which had fallen behind the advance of their unit were captured by a guerrilla detachment under the command of Red Armyman Kivshik. Seven Nazi motorcyclists were killed.

A guerrilla force under a commander named Znamensky raided the headquarters of a German unit, destroyed an enemy tank, captured two staff cars and killed five soldiers and four officers. In the village of "M" twenty German soldiers were killed by a guerrilla unit and two trucks and two machine guns were added to the guerrilla arsenal.

* * *

Soviet Guerrilla Activity Increases

Soviet Information Bureau, August 16 — As the Soviet-German war begins its eighth week the Soviet press reports ever-increasing guerrilla activity behind enemy lines. The following are a few of the accounts of guerrilla fighting that have appeared during the past week:

The fires of guerrilla warfare are mounting high in the Ukrainian district occupied by Hitler's troops. Guerrilla fighters in this area trap German motorcyclists carrying dispatches, cut enemy telegraph and telephone lines and disrupt Nazi supplies of fuel and ammunition.

A guerrilla group operating in the area "O" destroyed over 10 fuel tank cars and an ammunition train and ambuscaded a German infantry detachment a few days ago. Over 200 Germans were killed and wounded and the rest fled panic stricken.

Like dozens of similar guerrilla groups this unit always eludes pursuit. The strength of the guerrillas is multiplied by the fact that the whole population coöperates with them and serves as their scouts.

A detachment commanded by a Ukrainian veteran guerrilla fighter, one Oliinik, has in its ranks many gray-haired men who helped smash the German invaders and the Petliura troops during the Civil War after the 1917 revolution. Women and children keep these guerrilla fighters informed of every action of the Nazi forces. More than once these gray-haired guerrillas have waylaid German soldiers and derailed enemy troop trains.

The Ukrainian people render splendid assistance to the Red Army not only by their military actions, but by the aid they give to the intelligence service of the Soviet forces. Regular communication exists between most guerrilla detachments and the Red Army regular troops. Often Red Armymen notice in the midst of battle that the enemy artillery which has been shelling

Cossack Training

them suddenly turns and fires at its rear; the Soviet soldiers know then that the guerrilla fighters are active.

Ukrainian guerrillas have their own newspaper: *Za Radiansku Ukrainu* which is distributed widely in enemy territory and is extremely popular among the people of the occupied areas. This newspaper tells of the exploits of the partisans and serves as a means of communication between the guerrilla groups.

Guerrilla detachments operating in the rear of German troops in the northwestern direction within the last few days have caused tremendous damage to the enemy. Ninety-six German trucks carrying ammunition and provisions have been destroyed by them, in addition to 17 tanks and armored cars, 35 motorcycles, three planes, four tank cars and four fuel stations.

In this same period two German troop trains were derailed, ammunition dumps, provision stores and several bridges were blown up, telephone communications in 14 enemy sectors were cut and 400 German soldiers and 16 Nazi officers were killed. Many trophies were captured by the guerrilla fighters which are being used today in the unremitting fight against the Nazi invaders.

A guerrilla detachment, commanded by the Chairman of the District Soviet "O" captured a small railway station "G" recently. Within half an hour his guerrillas had removed several kilometers of wire, destroyed telephone and telegraph communications, blown up the water pump and set the station on fire.

In a forest near the village "A" guerrillas arranged several pit traps for a stretch of over a mile and mined them. The next day scouts discovered two smashed German tanks and one armored car in these pits.

* * *

The Red Army newspaper *Krasnaia Zvezda* printed several letters recently which had been found on captured German soldiers.

In a letter to his fiancée, German Corporal Birkbauer wrote: "Dear Poldi: You at home have no idea of what is going on here in Russia. We are always hungry because food comes irregularly and the retreating Russians destroy and burn everything in their path. We are happy if we can find a few potatoes and on some days we have to take crusts of bread from the people in the villages. In addition to this our life is continually in danger. In broad daylight their guerrillas shoot at our columns. I have little hope of coming home alive out of this inferno."

Captain Private Rittel of the 168th Regiment wrote in another letter: "There are many killed and wounded in our regiment because guerrillas shoot at us constantly while we are on the march. During one such skirmish our soldiers got panic stricken and we shot many of our own men."

Sergeant Major Eger who was questioned by Red Armymen said: "German officers told us that the Russians had poor arms. Now we know that the Red Army has arms which we don't possess. And your guerrillas! In this country every bush, every peasant's house shoots at you. That is why so many German soldiers surrender."

* * *

A guerrilla detachment commanded by a Captain Zerkalin has been operating recently behind German lines and has had 16 engagements with Nazi troops in the course of three weeks. In these engagements 12 enemy tanks, 23 trucks, 22 pieces of artillery, 16 machine guns and a number of fuel tanks were destroyed.

Zerkalin's guerrilla fighters captured nine German supply trains, 19 machine guns and over 300 rifles which were distributed among guerrilla inhabitants of the area. Over 550 Nazi soldiers and officers were killed in these engagements with Captain Zerkalin's troops.

* * *

Red Armymen from the company of Senior Lieutenant Likhachev captured a group of Nazi soldiers at the front recently, among whom was a German Private Kraus. Kraus, who was captured along with other Nazi soldiers, was a member of a battalion of German reservists who had just arrived at the front. In the following statement he specifically relates how Soviet guerrillas are hampering the transport of Nazi reserves.

"Our battalion was continuously attacked along the whole route from Warsaw to the front," said Private Kraus. "We sustained particularly heavy losses in the last 100 kilometers that we traveled. After spending a night in the town of 'Z' our truck column set out in the morning through a forest. Suddenly the leading truck fell into a pit trap and heavy machine-gun fire spattered us from the thickness of the woods."

"In this skirmish," Kraus continued, "twenty-eight German soldiers were killed and six were gravely wounded. Seventeen more soldiers and two officers were shot before we left the forest. We carried on a continuous rifle fire at bushes, trees, suspicious looking hummocks and tree stumps."

"Leaving the forest behind," Kraus continued, "our column reached a river and found the bridge destroyed. While we were restoring the bridge we were shot at by a group of mounted Soviet guerrillas. Several soldiers and one officer in the truck next to ours were killed. Twenty-five kilometers from our destination our column was fired on by two trench mortars, the first of which set fire to the truck that was leading the column and the second of which killed 14 soldiers immediately. The guerrillas retreated only after we had opened fire with antitank guns, machine guns and trench mortars. In this engagement we had many killed and wounded and eleven trucks were burned to the ground.

"Altogether, from the beginning of the march until we reached the front, we lost more than 160 men and six officers who were killed or wounded."

* * *

Guerrillas Strong Auxiliary of Red Army

Moscow, August 28 (Soviet Information Bureau)—The extent to which Soviet guerrilla activity, a constant thorn in the side of Hitler's invading troops, is now be-

Soviet Guerrilla Warriors. These fierce Cossacks are members of the Popular Volunteer Force. Fighters such as these waging a furious war behind the lines are savagely contesting every step of the slow German advance. Even Nazi sources have reported much damage inflicted by the guerrillas. (Radiophoto from Moscow.)

ing integrated into the military strategy of the Red Army is seen in numerous reports published recently in the Soviet press.

The scale and intensity of guerrilla activity no longer permit it to be classified under the heading of mere "harassing," numerous reports prove. The Commanders-in-Chief of the Red Army forces on the three principal fronts, Voroshilov, Timoshenko and Budyenny, all have made appeals to the guerrilla fighters to extend their activity. These appeals have not gone unanswered.

In the Latvian S.S.R. guerrilla groups, operating since the outbreak of the war, have merged into a Latvian Regiment of the Red Army. Commanded by the former head of an agricultural academy, this regiment is equipped with artillery and tanks capable of giving the visiting Nazi army a first rate example of Soviet military efficiency.

Guerrilla Oath

Regularization of the guerrillas' status has included the following oath: "I, a Red guerrilla, swear to my comrades-in-arms that I shall be brave, disciplined and merciless to the enemy. To the end of my days I shall remain faithful to my country, my party, and my leader Stalin. If I break this sacred oath, may severe punishment be meted out to me at the hands of guerrillas."

Guerrilla fighters who take this oath include men drawn from every section of the Soviet population. In the southwestern direction, school teachers from the Uman district have joined up. A doctor, head of a hospital in this area, also joined the guerrillas with his two daughters, who act as nurses for a detachment.

Women are active with various guerrilla groups. An *Izvestia* war correspondent tells of a young girl, Katya, who acts as scout for an important detachment and frequently takes part in fighting. Another girl, Julia, recently conveyed information which enabled her comrades to repulse a Nazi attack on the village of "N" and capture a rich haul of German equipment in the process. The captured weapons were added to the guerrilla arsenal.

Veterans of the October Revolution of 1917 and the ensuing war of intervention are often reported taking a leading part in guerrilla warfare, using the tactics they learned in their youth. A detachment commanded by a Civil War veteran recently attacked an enemy airdrome and captured six Heinkel planes and other equipment after killing over 100 German soldiers. An amateur air enthusiast among the group named Solin, in civilian life a tractor driver, flew one plane to the Red Army lines. The other five were destroyed. The guerrillas set fire to gasoline tanks, blew holes in runways, set fire to hangars and drove away five trucks, seven motorcycles and a mobile radio station. All this equipment was in good order and was doing heavy duty for the guerrillas at last report.

Enemy airdromes are especially vulnerable to guer-

rilla attack. Near the village of "V," after studying the habits of German fliers and ground crews, guerrillas attacked an airfield one night, killing twenty-two Nazis who tried to defend it. The guerrillas set fire to 12 enemy planes, loaded two trucks with ammunition and drums of gasoline and drove away.

One hundred guerrillas held back a Nazi attack on the Ukrainian town of "K" for three days recently, ambushing German scouts and compelling the main forces to advance blindly. These guerrillas, collective farmers and workers from machine tractor stations, then held off the advancing Nazis with machine guns captured from the scouts.

Near the town of "O" a guerrilla group armed only with one automatic rifle and seven ordinary rifles stopped 15 German ammunition trucks one night by placing spiked planks across the road. When the guerrillas opened fire the surprised Nazis fled to the woods.

In the Ukraine guerrillas have ambushed the Nazis whenever they left well-guarded highways. A group of Nazi armored cars were brought to a halt on a side road, in one instance, but it proved impossible to rout the Nazi crews with rifle fire. One fighter in the guerrilla group crept close, dragging three sheaves of ripe wheat. Suddenly rising he shouted: "The robbers wanted our bread. Let's give it to them!" and hurled the wheat against one of the Nazi cars following it with a flaming bottle of gasoline. The wheat blazed up and quickly converted the Nazi car into a pile of blackened iron.

From the Arctic to the Black Sea the guerrillas materialize from nowhere, thousands of them, wherever there are German troops. They slash out from ambush, strike in the night, and vanish, leaving the Nazis to count their dead. In Byelorussia guerrilla commander B, recently decorated by the Soviet Government, wrote the following description of his group:

"Our detachment was formed in the first days of the war and numbered 80 men. We began to study military tactics and selected trusted people in neighboring villages with whom we could keep in contact. We obtained explosives with which we mined bridges and we prepared bottles of gasoline for destroying tanks.

"We concealed our ammunition and food in places inaccessible to the enemy. When the Nazis attacked our hiding place, we blew up a bridge before them and met their tanks with machine gun fire and gasoline bottles. We wrecked 15 German tanks in this action and an equal number of armored cars."

Another guerrilla commander from the same area wrote of his activities: "We are camped in a virgin forest. Only the people who guard our supplies stay in camp. Our main detachment is constantly on the march. The Nazis worry themselves to death hunting us. The population of the occupied villages loves us like a mother loves her children and keeps us informed of the enemy's movements."

* * *

The German command has honored Soviet guerrilla activity on numerous occasions by issuing specific orders for the extermination of these groups. Recently, special Gestapo punitive expeditions were reportedly sent from Berlin to deal with guerrillas and terrorize civilians aiding them. The Gestapo will have its hands full. The Germans must reckon with the guerrillas as a powerful auxiliary of the Red Army as long as the war lasts.

Guerrilla Warfare in China*

By Captain James B. Griffith, U.S.M.C.

TRANSLATOR'S NOTE

IN July, 1941, the undeclared war between China and Japan entered its fifth year. One of the most significant features of the struggle has been the organization of the Chinese people for unlimited guerrilla warfare. The development of this warfare has followed the pattern laid out by Mao Tzu Tung and his collaborators in the pamphlet "Guerrilla Warfare" which was published in 1937 and has been widely distributed in "Free China" at ten cents a copy.

Mao Tzu Tung a member of the Chinese Communist party and former political commissar of the Fourth Red Army, is no novice in the art of war. Actual battle experience with both regular and guerrilla troops has qualified him as an expert. This, I believe the biographical sketch extracted from Edgar Snow's *Red Star Over China* will indicate.

The influence of the ancient military philosopher Sun Tzu on Mao's military thought will be apparent to those who have read *The Book of War*. Sun Tzu wrote that speed, surprise and deception were the primary essentials of the attack and his succinct advice "Sheng Tung, Chi, Hsi" (Distraction in the East, Strike in the West) is no less valid today than it was when he wrote it twenty-four hundred years ago. The tactics of Sun Tzu are in large measure the tactics of China's guerrillas today.

Mao says that unlimited guerrilla warfare with vast time and space factors establishes a new military process. This seems a true statement as there are no other historical examples of guerrilla hostilities as thoroughly organized from the military, political, and economic

*Courtesy, *The Marine Corps Gazette*. Illustrations courtesy, *The Infantry Journal*.

point of view as those in China. We in the Marine Corps have as yet encountered nothing but relatively primitive and strictly limited guerrilla war. Thus what Mao has written of this new type of guerrilla war may be of interest to us.

I have tried to present the author's ideas accurately, but as the Chinese language is not a particularly suitable medium for the expression of technical thought the translation of some of the modern idioms not yet to be found in available dictionaries is probably arguable. I can not vouch for the accuracy of the translated quotations. I have taken the liberty to delete from the translation matter which was purely repetitious.

Mao Tzu Tung

Mao Tzu Tung was born on a farm in Hunan Province in 1893. He began working in the fields at the age of six. From his eighth to thirteenth year he attended a local primary school during the day time and worked in the early mornings and at night on the farm. His father was a strict disciplinarian and Mao developed rebellious habits in his early youth. At the age of thirteen, in a fight with his father Mao learned that, "When I defended my rights with open rebellion my father relented, but when I remained meek and submissive he only cursed and beat me the more." Shortly after this battle he gained his father's consent to return to school. This time he studied "Western Learning" including geography, natural sciences, and history.

In 1911 he served six months in the Revolutionary Army. The succeeding six years were spent in the provincial library of Hunan and at the Hunan Normal School. Mao became an ardent physical culturist and whenever opportunity afforded took long walking tours and hardened himself physically by swimming in the winter, sleeping in the snow, and walking in the rain.

It was while he was an assistant librarian at the Peiping National University that he became a convert to the Marxist philosophy, and from this time on he was constantly active in the Chinese Communist Party. In 1927 the split occurred between the Kuo Ming Tang led by Chiang Kai Shek and the Communist Party. From 1927 to 1928 Mao held together those elements of the army that were communist. During that year the army increased in size and in the autumn of 1928 was organized as the Fourth Army under the command of Chu Teh. Mao became political commissar. In the meantime a price had been put on his head by the Kuo Ming Tang, his properties confiscated, and his wife and younger sister arrested and executed.

From 1931 to 1934 Chiang undertook the five extermination campaigns and in the latter year the Red Army was forced to move from south China to the northwest. This movement, now famous as the "Long March," terminated in Shensi in October, 1935. From the fall of 1935 to the spring of 1937 the Red Government led by Mao consolidated its position in the northwest.

PART ONE

What Is Guerrilla Warfare?

In a war of revolutionary character guerrilla operations are a necessary part. This is particularly so in a war waged for the emancipation of a people who inhabit a vast nation. China is such a nation, a nation whose techniques are undeveloped and whose communications are poor. She finds herself confronted with a strong and victorious Japanese imperialism. Under these circumstances the development of the type of guerrilla warfare characterized by the quality of mass is both necessary and natural. This warfare must be developed to a degree unprecedented and it must coördinate with the operations of our regular armies. If we fail to do this we will find it difficult to defeat the enemy.

These guerrilla operations must not be considered as an independent form of warfare. They are but one step in the total war; one aspect of the revolutionary struggle. They are the inevitable result of the clash between oppressor and oppressed when the latter reach the limits of their endurance. In our case these hostilities began at a time when the people were unable to endure any more from the Japanese imperialists. Lenin said: "A people's insurrection and a people's revolution are not only natural but inevitable." *(People and Revolution.)* We consider guerrilla operations as but one aspect of our total or mass war because they, lacking the quality of independence, are of themselves incapable of providing a solution to the struggle.

Guerrilla warfare has qualities and objectives peculiar to itself. It is a weapon that a nation inferior in arms and military equipment may employ against a more powerful aggressor nation. When the invader pierces deep into the heart of the weaker country and occupies her territory in a cruel and oppressive manner there is no doubt that conditions of terrain, climate, and society in general offer obstacles to his progress and may be used to advantage by those who oppose him. In guerrilla warfare we turn these advantages to the purpose of resisting and defeating the enemy.

During the progress of hostilities guerrillas gradually develop into orthodox forces that operate in conjunction with other units of the regular army. Thus the regularly organized troops, those guerrillas who have attained that status, and those who have not reached that level of development combine to form the military power of a national revolutionary war. There can be no doubt that the ultimate result of this will be victory.

Both in its development and in its method of application guerrilla warfare has certain distinctive characteristics. We first discuss the relationship of guerrilla warfare to national policy. Because ours is the resistance of a semi-colonial country against an imperialism our hostilities must have a clearly defined political goal and firmly established political responsibilities. Our basic policy is the creation of a national united anti-

Japanese front. This policy we pursue in order to gain our political goal which is the complete emancipation of the Chinese people. There are certain fundamental steps necessary in the realization of this policy, to wit:

1. Arousing and organizing the people;
2. Achieving internal unification politically;
3. Establishing bases;
4. Equipment of forces;
5. Recovery of national strength;
6. Destruction of enemy's national strength;
7. Regaining lost territories.

There is no reason to consider guerrilla warfare separately from national policy. On the contrary, it must be organized and conducted in complete accord with national anti-Japanese policy. It is only those who misinterpret guerrilla action who say, as does Jen Ch'i Shan, "The question of guerrilla hostilities is purely a military matter and not a political one."

Those who maintain this simple point of view have lost sight of the political goal and the political effects of guerrilla action. Such a simple point of view will cause the people to lose confidence and will result in our defeat.

What is the relationship of guerrilla warfare to the people? Without a political goal guerrilla warfare must fail, as it must if its political objectives do not coincide with the aspirations of the people and their sympathy, coöperation and assistance can not be gained. The essence of guerrilla warfare is thus revolutionary in character. On the other hand, in a war of counter revolutionary nature there is no place for guerrilla hostilities. Because guerrilla warfare basically derives from the masses and is supported by them it can neither exist nor flourish if it separates itself from their sympathies and coöperation. There are those who do not comprehend guerrilla action and who therefore do not understand the distinguishing qualities of a people's guerrilla war who say: "Only regular troops can carry on guerrilla operations." There are others who, because they do not believe in the ultimate success of guerrilla action, mistakenly say: "Guerrilla warfare is an insignificant and highly specialized type of operation in which there is no place for the masses of the people." (Jen Ch'i Shan.) There are those who ridicule the masses and undermine resistance by wildly asserting that the people have no understanding of the war of resistance. (Yeh Ch'ing.) The moment that this war of resistance dissociates itself from the masses of the people is the precise moment that it dissociates itself from hope of ultimate victory over the Japanese.

What is the organization for guerrilla warfare? Though all guerrilla bands that spring from the masses of the people suffer from lack of organization at the time of their formation they all have in common a basic quality that makes organization possible.

All guerrilla units must have political and military leadership. This is true regardless of the source or size of such units. Such units may originate locally, in the

CHU TEH
For years a foe of Chiang Kai-Shek, Chu Teh has sworn fealty to Chiang and now leads the Eighth Route Army — spearhead of the guerrilla war.

masses of the people; they may be formed from an admixture of regular troops with groups of the people, or they may consist of regular army units intact. Nor does mere quantity affect this matter. Such units may consist of a squad of a few men, a battalion (or squadron) of several hundred men, or a regiment of several thousand men. All these must have leaders who are unyielding in their policies, resolute, loyal, sincere, and robust. These men must be well educated in revolutionary technique, self confident, able to establish severe discipline, and able to cope with counter-propaganda. In short, these leaders must be models for the people. As the war progresses such leaders will gradually overcome the lack of discipline, which at first prevails; they will establish discipline in their forces, strengthening them and increasing their combat efficiency. Thus eventual victory will be attained.

Unorganized guerrilla warfare can not contribute to victory and those who attack the movement as a combination of banditry and anarchism do not understand the nature of guerrilla action. They say: "This movement is a haven for disappointed militarists, vagabonds and bandits" (Jen Ch'i Shan), hoping thus to bring the movement into disrepute. We do not deny that there are corrupt guerrillas, nor that there are people who under the guise of guerrillas indulge in unlawful activities. Neither do we deny that the movement has at the pres-

ent time symptoms of a lack of organization, symptoms which might indeed be serious were we to judge guerrilla warfare solely by the corrupt and temporary phenomena we have mentioned. We should study the corrupt phenomena and attempt to eradicate them in order to encourage guerrilla warfare, and to increase its military efficiency. "This is hard work, there is no help for it, and the problem can not be solved immediately. The whole people must try to reform themselves during the course of the war. We must educate them and reform them in the light of past experience. Evil does not exist in guerrilla warfare but only in the unorganized and undisciplined activities which are anarchism." (Lenin —Guerrilla Warfare.)

What is basic guerrilla strategy? Guerrilla strategy must primarily be based on alertness, mobility, and attack. It must be adjusted to the enemy situation, the terrain, the existing lines of communication, the relative strength, the weather, and the situation of the people.

In guerrilla warfare select the tactic of seeming to come from the east and attacking from the west; avoid the solid, attack the hollow; attack; withdraw; deliver a lightning blow, seek a lightning decision. When guerrillas engage a stronger enemy they withdraw when he advances; harass him when he stops; strike him when he is weary; pursue him when he withdraws. In guerrilla strategy the enemy's rear, flanks, and other vulnerable spots are his vital points, and there he must be harassed, attacked, dispersed, exhausted and annihilated. Only in this way can guerrillas carry out their mission of independent guerrilla action and coördination with the effort of the regular armies. But, in spite of the most complete preparation, there can be no victory if mistakes are made in the matter of command. Guerrilla warfare based on the principles we have mentioned and carried on over a vast extent of territory in which communications are inconvenient will contribute tremendously towards ultimate defeat of the Japanese and consequent emancipation of the Chinese people.

A careful distinction must be made between two types of guerrilla warfare. The fact that revolutionary guerrilla warfare is based on the masses of the people does not in itself mean that the organization of guerrilla units is impossible in a war of counter revolutionary character. As examples of the former type we may cite Red guerrilla hostilities during the Russian revolution; those of the Reds in China; of the Abyssinians against the Italians for the past three years; those of the last seven years in Manchuria, and the vast anti-Japanese guerrilla war that is carried on in China today. All these struggles have been carried on in the interests of the whole people or the greater part of them; all had a broad basis in the national man power, and all have been in accord with the laws of historical development. They have existed and will continue to exist, flourish and develop as long as they are not contrary to national policy. The latter type of guerrilla warfare directly contradicts the law of historical development. Of this type we may cite the examples furnished by the White Russian guerrilla units organized by Denikin and Kolchak; those organized by the Japanese; those organized by the Italians in Abyssinia; those supported by the puppet governments in Manchuria and Mongolia, and those that will be organized here by Chinese traitors. All such have oppressed the masses, and have been contrary to the true interests of the people. They must be firmly opposed. They are easy to destroy because they lack a broad foundation in the people. If we fail to differentiate between the two types of guerrilla hostilities mentioned it is likely that we will exaggerate their effect when applied by an invader. We might arrive at the conclusion that "the invader can organize guerrilla units from among the people." Such a conclusion might well diminish our confidence in guerrilla warfare. As far as this matter is concerned we have but to remember the historical experience of revolutionary struggles.

Further, we must distinguish general revolutionary wars from those of a purely "class" type. In the former case the whole people of a nation without regard to class or party carry on a guerrilla struggle which is an instrument of the national policy. Its basis is therefore much broader than is the basis of a struggle of class type. Of a general guerrilla war it has been said: "When a nation is invaded the people become sympathetic to one another and all aid in organizing guerrilla units. In civil war, no matter to what extent guerrillas are developed they do not produce the same results as when they are formed to resist an invasion by foreigners." (Civil War in Russia.) The one strong feature of guerrilla warfare in a civil struggle is its quality of internal purity. One class may be easily united and perhaps fight with great effect, whereas in a national revolutionary war guerrilla units are faced with the problem of internal unification of different class groups. This necessitates the use of propaganda. Both types of guerrilla war are however similar in that they both employ the same military methods.

National guerrilla warfare, though historically of the same consistency has employed varying implements as times, peoples and conditions differ. The guerrilla aspects of the Opium War, those of the fighting in Manchuria since the Mukden incident, and those employed in China today are all slightly different. The guerrilla warfare conducted by the Moroccans against the French and the Spanish was not exactly similar to that which we conduct today in China. These differences express the characteristics of different peoples in different periods. Although there is a general similarity in the quality of all these struggles there are dissimilarities in form. This fact we must recognize. Clausewitz in "On War" wrote: "Wars in every period have independent form and independent conditions and therefore every period must have its independent theory of war." Lenin in "On Guerrilla Warfare" said: "As regards the form of fighting it is unconditionally requisite

that history be investigated in order to discover the conditions of environment, the state of economic progress and the political ideas that obtained, the national characteristics, customs and degree of civilization." Again: "it is necessary to be completely unsympathetic to abstract formulae and rules and to study with sympathy the conditions of the actual fighting for these will change in accordance with the political and economic situations and the realizations of the people's aspirations. These progressive changes in conditions create new methods."

If, in today's struggle, we fail to apply the historical truths of revolutionary guerrilla war we will fall into the error of believing with T'ou Hsi Sheng that under the impact of Japan's mechanized army "the guerrilla unit has lost its historical function." Jen Ch'i Shan writes: "In olden days guerrilla warfare was part of regular strategy but there is almost no chance that it can be applied today." These opinions are harmful. If we do not make an estimate of the characteristics peculiar to our anti-Japanese guerrilla war but insist on applying to it mechanical formulae derived from past history we are making the mistake of placing our hostilities in the same category as all other national guerrilla struggles. If we hold this view we will simply be beating our heads against a stone wall and we will be unable to profit from guerrilla hostilities.

To summarize: What is the guerrilla war of resistance against Japan? It is one aspect of the entire war, which although alone incapable of producing the decision, attacks the enemy in every quarter, diminishes the extent of area under his control; increases our national strength and assists our regular armies. It is one of the strategic instruments used to inflict defeat on our enemy. It is the one pure expression of anti-Japanese policy: that is to say, it is military strength organized by the active people and inseparable from them. It is a powerful special weapon with which we resist the Japanese and without which we can not defeat them.

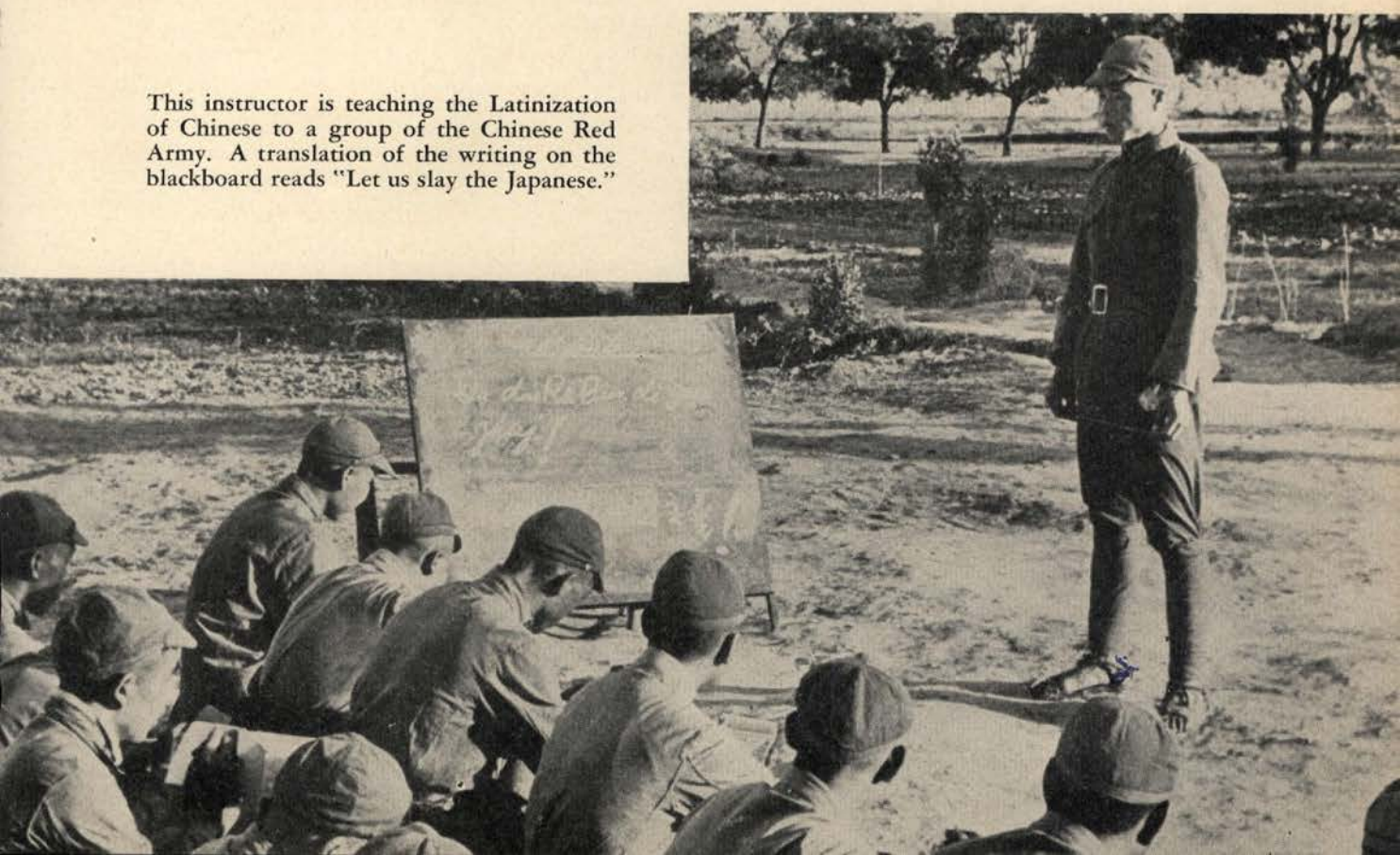
PART TWO

The Relation of Guerrilla Hostilities to Regular Operations

The general features of orthodox hostilities, that is, the war of position and the war of movement, differ fundamentally from guerrilla warfare. There are other readily apparent differences such as those in organization, armament, equipment, supply, tactics, command; in the conception of the terms "front" and "rear"; in the matter of military responsibilities.

When considered from the numerical point of view guerrilla units are many; as individual combat units they may vary in size from the smallest of several score or several hundred men, to the battalion (or squadron) or the regiment of several thousand. This is not the case in regularly organized units. A primary feature of guerrilla operations is their dependence upon the people themselves to organize battalions and other units. As a result of this, organization depends largely upon local circumstances. In the case of guerrilla groups the standard of equipment is of a low order, and they must primarily depend for their sustenance upon what the locality affords.

The strategy of guerrilla warfare is manifestly unlike that employed in orthodox operations, as the basic tactic



This instructor is teaching the Latinization of Chinese to a group of the Chinese Red Army. A translation of the writing on the blackboard reads "Let us slay the Japanese."

of the former is constant activity and movement. There is in guerrilla warfare no such thing as a decisive battle; there is nothing comparable to the fixed, passive defense that features orthodox war. In guerrilla warfare the transformation of a moving situation into a positional defensive situation never arises. The general features of reconnaissance, partial deployment, general deployment, and development of the attack that are usual in mobile warfare are not common to guerrilla war.

There are differences also in the matter of leadership and command. In guerrilla warfare small units acting independently play the principal rôle and there must be no excessive interference with their activities. In orthodox warfare, particularly in a moving situation, a certain degree of initiative is accorded subordinates, but in principle, command is centralized. This is done because all units and all supporting arms in all districts must coördinate to the highest degree. In the case of guerrilla warfare this is not only undesirable but impossible. Only adjacent guerrilla units can coördinate their activities to any degree. Strategically, their activities can be roughly correlated with those of the regular forces, and tactically they must coöperate with adjacent units of the regular army. But there are no strictures on the extent of guerrilla activity nor is it primarily characterized by the quality of coöperation of many units.

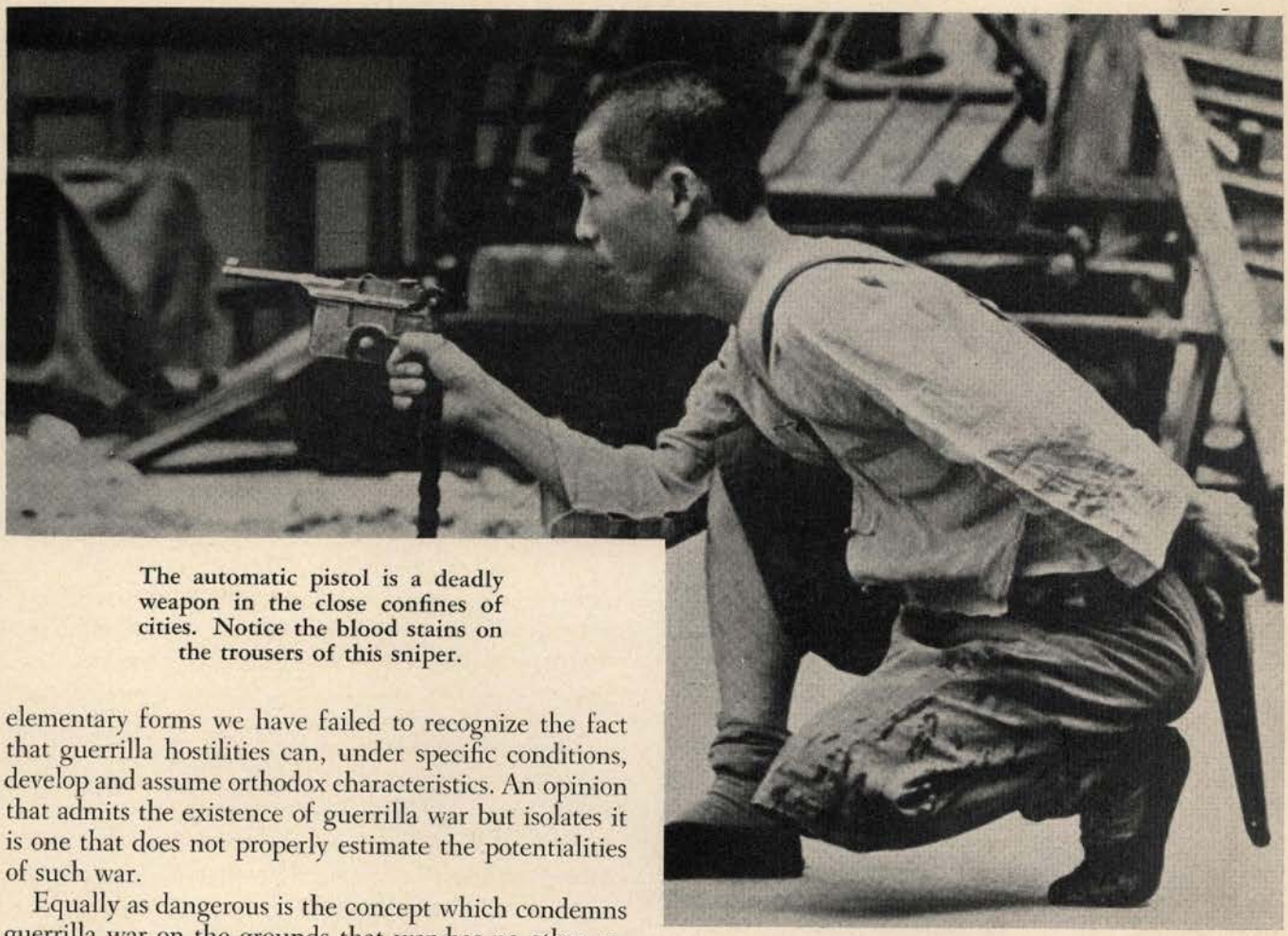
When we discuss the terms "front" and "rear" it must be remembered, that while guerrillas do have bases, their primary field of activity is in the enemy's rear areas. They themselves have no rear. Because an orthodox army has rear installations (except in some special cases as during the 10,000 mile march of the Red Army or as in the case of certain units operating in Shansi province) it can not operate as guerrillas can.

As to the matter of military responsibilities: those of the guerrillas are to exterminate small forces of the enemy; to harass and weaken large forces; to attack enemy lines of communication; to establish bases capable of supporting independent operations in the enemy's rear; to force the enemy to disperse his strength, and to coördinate all these activities with those of the regular armies on distant battle fronts.

From the foregoing summary of differences that exist between guerrilla and orthodox warfare it can be seen that it is improper to compare the two. Further distinction must be made in order to clarify this matter. While the 8th Route Army is a regular Army, its North China campaign is essentially guerrilla in nature for it operates in the enemy's rear. On occasion, however, 8th Route Army commanders have concentrated powerful forces to strike an enemy in motion and the characteristics of orthodox mobile warfare were evident in the battle at P'ing Hsing Kuan and in other engagements.

On the other hand, after the fall of Feng Ling Tu, the operations of Central Shansi and Suiyan troops were more guerrilla than orthodox in nature. In this connection the practice character of Generalissimo Chiang's instructions to the effect that independent brigades would carry out guerrilla operations should be recalled. In spite of such temporary activities, these orthodox units retained their identity and after the fall of Feng Ling Tu they were not only able to fight along orthodox lines but often found it necessary to do so. This is an example of the fact that orthodox armies may, due to changes in the situation, temporarily function as guerrillas. Likewise guerrilla units that are formed from the people may gradually develop into regular units and when operating as such, employ the tactics of orthodox mobile war. While these units function as guerrillas they may be compared to innumerable gnats which, by biting a giant both in front and in rear, ultimately exhaust him. They make themselves as unendurable as a group of cruel and hateful devils, and as they grow and attain gigantic proportions they will find that their victim is not only exhausted but is practically perishing. It is for this very reason that our guerrilla activities are a source of constant mental worry to Imperial Japan.

While it is improper to confuse orthodox with guerrilla operations it is equally improper to consider that there is a chasm between the two. While differences do exist, similarities appear under certain conditions and this fact must be appreciated if we wish to establish clearly the relationship between the two. If we consider both types of warfare as a single subject, or if we confuse guerrilla warfare with the mobile operations of orthodox war we fall into this error: we exaggerate the function of guerrillas and minimize that of the regular armies. If we agree with Chang Tso Hua who says "Guerrilla warfare is the primary war strategy of a people seeking to emancipate itself"; or with Chao K'ang who believes that "Guerrilla strategy is the only strategy possible for an oppressed people" we are exaggerating the importance of guerrilla hostilities. What these zealous friends I have just quoted do not realize is this: That if we do not fit guerrilla operations into their proper niche we can not promote them realistically. Then, not only would those who oppose us take advantage of our varying opinions to turn them to their own uses to undermine us, but guerrillas would be led to assume responsibilities they could not successfully discharge and which should properly be carried out by orthodox forces. In the meantime the important guerrilla function of coördinating activities with the regular forces would be neglected. Furthermore, if the theory that guerrilla warfare is our only strategy were actually applied, the regular forces would be weakened, we would be divided in purpose, and guerrilla hostilities would decline. If we say: "Let us transform the regular forces into guerrillas" and do not place our first reliance on a victory to be gained by the regular armies over the enemy we may certainly expect to see as a result the failure of the anti-Japanese war of resistance. The concept that guerrilla warfare is an end in itself and that guerrilla activities can be divorced from those of the regular forces is correct. If we assume that guerrilla warfare does not progress from beginning to end beyond its



The automatic pistol is a deadly weapon in the close confines of cities. Notice the blood stains on the trousers of this sniper.

elementary forms we have failed to recognize the fact that guerrilla hostilities can, under specific conditions, develop and assume orthodox characteristics. An opinion that admits the existence of guerrilla war but isolates it is one that does not properly estimate the potentialities of such war.

Equally as dangerous is the concept which condemns guerrilla war on the grounds that war has no other aspects than the orthodox. This opinion is expressed by those who have seen the corrupt phenomena of some guerrilla regimes, observed their lack of discipline, and have seen them used as a screen behind which certain persons have indulged in bribery and other corrupt practices. These people will not admit the fundamental necessity for guerrilla bands which spring from the armed people. They say: "Only the regular forces are capable of conducting guerrilla operations." This theory is a mistaken one and would lead to the abolition of the people's guerrilla war.

A proper conception of the relationship that exists between guerrilla effort and that of the regular forces is essential. We believe it can be stated this way: "Guerrilla operations during the anti-Japanese war may for a certain time and temporarily become its paramount feature, particularly insofar as the enemy's rear is concerned. However, if we view the war as a whole there can be no doubt that our regular forces are of primary importance because it is they who are alone capable of producing the decision. Guerrilla warfare assists them in producing this favorable decision. Orthodox forces may under certain conditions operate as guerrillas, and the latter may, under certain conditions, develop to the status of the former. However, both guerrilla forces and regular forces have their own respective development and their proper combinations."

To clarify the relationship between the mobile aspect of orthodox war and guerrilla war, we may say that general agreement exists that the principal element of our strategy must be mobility. With the war of movement we may at times combine the war of position. Both of these are assisted by general guerrilla hostilities. It is true that on the battlefield mobile war often becomes positional; it is true that this situation may be reversed; it is equally true that each form may combine with the other. The possibility of such combination will become more evident after the prevailing standards of equipment have been raised. For example in a general strategical counterattack to recapture key cities and lines of communication it would be normal to use both mobile and positional methods. However, the point must again be made that our fundamental strategical form must be the war of movement. If we deny this we can not arrive at the victorious solution of the war. In sum, while we must promote guerrilla warfare as a necessary strategical auxiliary to orthodox operations we must neither assign it the primary position in our war strategy, nor may we substitute it for mobile and positional warfare as conducted by orthodox forces.

PART THREE

Guerrilla Warfare in History

Guerrilla warfare is neither a product of China nor

is it peculiar to the present day. From the earliest historical days it has been a feature of wars fought by every class of men against invaders and oppressors. Under suitable conditions it has great possibilities. The many guerrilla wars in history have their points of difference, their peculiar characteristics, their varying processes and conclusions, and we must respect and profit by the experience of those whose blood was shed in them. What a pity it is that the priceless experience gained during the several hundred wars waged by the peasants of China can not be marshalled today to guide us. Our only experience in guerrilla hostilities has been that gained from the several conflicts that have been carried on against us by foreign imperialism. But those experiences should help the fighting Chinese recognize the necessity for guerrilla warfare and should confirm them in confidence of ultimate victory.

In September, 1812 the French Napoleon, in the course of swallowing all of Europe, invaded Russia at the head of a great army totalling several hundred thousands of infantry, cavalry and artillery. At that time Russia was weak and her ill prepared army was not concentrated. The most important phase of her strategy was the use made of cossack cavalry and detachments of peasants to carry on guerrilla operations. After giving up Moscow the Russians formed nine guerrilla divisions of about five hundred men each. These and vast groups of organized peasants carried on partisan warfare and continually harassed the French army. When the French army was withdrawing, cold and starving, Russian guerrillas blocked the way and in combination with regular troops carried out counterattacks on the French rear, pursuing them and defeating them. The army of the heroic Napoleon was almost entirely annihilated and the guerrillas captured many officers, men, cannon and rifles. Though the victory was the result of various factors, and depended largely on the activities of the regular army, the function of the partisan groups was extremely important. "The corrupt and poorly organized country that was Russia defeated and destroyed an army led by the most famous soldier of Europe and won the war in spite of the fact that her ability to organize guerrilla régimes was not fully developed. At times guerrilla groups were even hindered in their operations and the supply of equipment and arms was insufficient. If we use the Russian saying, it was a case of a battle between "the fist and the axe." (Ivanoff.)

From 1918 to 1920 the Russian Soviets due to the oppositions and intervention of foreign imperialisms and the internal disturbances of White Russian groups were forced to organize themselves in occupied territories and fight a real war. In Siberia and Alashan, in the rear of the army of the traitor Denikin and in the rear of the Poles there were many Red Russian Guerrillas. These not only disrupted and destroyed the communications in the enemy's rear but also frequently prevented his advance. On one occasion the guerrillas completely destroyed a retreating White army that had previously been defeated by regular Red forces. Kolchak, Denikin, the Japanese, and the Poles, owing to the necessity of staving off the attacks of guerrillas were forced to withdraw regular troops from the front. "Thus not only was the enemy's man power impoverished but he found himself unable to cope with the ever moving guerrillas." (The Nature of Guerrilla Action.)

The development of guerrillas at that time had only reached the stage where there were detached groups of several thousands in strength, old, middle aged, and young. The old men organized themselves into propaganda groups known as "silver haired units"; there was a suitable guerrilla activity for the middle aged; the young men formed the combat units, and there were even groups for the children. Among the leaders were determined communists who carried on general political work among the people. These, although they opposed the doctrine of extreme guerrilla warfare were quick to oppose those who condemned it. Experience tells us: "Orthodox armies are the fundamental and principal power; guerrilla units are secondary to them and assist in the accomplishment of the mission assigned the regular forces." (Lessons of the Civil War in Russia.) Many of the guerrilla regimes in Russia gradually developed until in battle they were able to discharge the functions of organized regulars. The army of the famous General Galen was entirely derived from guerrillas.

During the seven months in 1935-1936 the Abyssinians lost their war against Italy. The cause of defeat, aside from the most important political reasons that there were dissentient political groups, no strong party, and unstable policy, was the failure to adopt a positive policy of mobile warfare. There was never a combination of the war of movement with large scale guerrilla operations. Ultimately the Abyssinians adopted a purely passive defense with the result that they were unable to defeat the Italians. In addition to this, the facts that Abyssinia is a relatively small and sparsely populated country were contributory. Even in spite of the fact that the Abyssinian army and its equipment was not modern, she was able to withstand a mechanized Italian force of 400,000 for seven months. During that period there were several occasions when a war of movement was combined with large scale guerrilla operations to strike the Italians heavy blows. Moreover, several cities were re-taken and casualties totalling 140,000 were inflicted. Had this policy been steadfastly continued it would have been difficult to have named the ultimate winner. At the present time guerrilla activities continue in Abyssinia and if the internal political questions can be solved an extension of such activities is probable.

In 1841 and 1842 when brave people from San Yuan Li fought the English; again from 1850 to 1864 during the T'ai P'ing war, and for a third time in 1899 in the Boxer uprising guerrilla tactics were employed to a remarkable degree. Particularly was this so during the T'ai P'ing war when guerrilla operations were most ex-

tensive and the Ch'ing troops were often completely exhausted and forced to flee for their lives.

In these wars there were no guiding principles of guerrilla action. Perhaps these guerrilla hostilities were not carried out in conjunction with regular operations, or perhaps there was a lack of coördination. But the fact that victory was not gained was not because of any lack in guerrilla activity but rather because of the interference of politics in military affairs. Experience shows that if precedence is not given to the question of conquering the enemy both in political and military affairs, and if regular hostilities are not conducted with tenacity, guerrilla operations alone can not produce final victory.

From 1927 to 1936 the Chinese Red Army fought almost continually and employed guerrilla tactics constantly. At the very beginning a positive policy was adopted. Many bases were established and from guerrilla bands the Reds were able to develop into regular armies. As these armies fought, new guerrilla regimes were developed over a wide area. These regimes coordinated their efforts with those of the regular forces. This policy accounted for the many victories gained by guerrilla troops relatively few in number who were armed with weapons inferior to those of their opponents. The leaders of that period properly combined guerrilla operations with a war of movement both strategically and tactically. They depended primarily upon alertness. They stressed the correct basis for both political affairs and military operations. They developed their guerrilla bands into trained units. They then determined upon a ten-year period of resistance during which time they overcame innumerable difficulties and have only lately reached their goal of direct participation in the anti-Japanese war. There is no doubt that the internal unification of China is now a permanent and definite fact and that the experiences gained during our internal struggles have proved to be both necessary and advantageous to us in the struggle against Japanese imperialism. There are many valuable lessons we can learn from the experiences of those years. Principal among them is the fact that guerrilla success largely depends upon powerful political leaders who work unceasingly to bring about internal unification. Such leaders must work with the people; they must have a correct conception of the policy to be adopted both as regards the people and the enemy.

After September 18th, 1931, strong anti-Japanese guerrilla campaigns were opened in each of the three northeast provinces. Guerrilla activity persists there in spite of the cruelties and deceits practiced by the Japanese at the expense of the people, and in spite of the fact that her armies have occupied the land and oppressed the people for the last seven years. The struggle can be divided into two periods. During the first, which extended from September 18th, 1931, to January, 1933, anti-Japanese guerrilla activity exploded constantly in all three provinces. Ma Chan Shan and Ssu Ping Wei established an anti-Japanese régime in Hei Lung Chiang. In Chi Lin the National Salvation Army and the Self Defense Army were led by Wang Te Lin and Li Tu respectively. In Feng T'ien, Chu Lu and others commanded guerrilla units. The influence of these forces was great. They harassed the Japanese unceasingly but because there was an indefinite political goal; improper leadership; failure to coördinate military command and operations and to work with the people, and finally failure to delegate proper political functions to the army, the whole organization was feeble, and its strength was not unified.

As a direct result of these conditions the campaigns failed and the troops were finally defeated by our enemy.

During the second period, which has extended from January, 1933, to the present time, the situation has greatly improved. This has come about because great numbers of people who have been oppressed by the enemy have decided to resist him; because of the participation of the Chinese communists in the anti-Japanese war, and because of the fine work of the volunteer units. The guerrillas have finally educated the people to the meaning of guerrilla warfare and in the northeast it has again become an important and powerful influence. Already seven or eight guerrilla regiments and a number of independent platoons have been formed, and their activities make it necessary for the Japanese to send troops after them month after month. These units hamper the Japanese and undermine their control in the northeast while at the same time they inspire a Nationalist revolution in Korea. Such activities are not merely of transient and local importance but are direct contributions to our ultimate victory. However, there are still some weak points. For instance: national defense policy has not been sufficiently developed; participation of the people is not general; internal political organization is still in its primary stages, and the force used to attack the Japanese and the puppet governments is not yet sufficient. But if present policy is continued tenaciously all these weaknesses will be overcome. Experience proves that guerrilla war will develop to even greater proportions and that, in spite of the cruelty of the Japanese and the many methods they have devised to cheat the people they can not extinguish guerrilla activities in the three northeastern provinces.

The guerrilla experiences of China and of other countries which have been outlined prove that in a war of revolutionary nature such hostilities are possible, natural and necessary. They prove that if the present anti-Japanese war for the emancipation of the masses of the Chinese people is to gain ultimate victory such hostilities must expand tremendously. Historical experience is written in iron and blood. We must point out that the guerrilla campaigns being waged in China today are a page in that history that has no precedent. Their influence will be confined not solely to China in her present anti-Japanese war but will be world wide.

Even pack artillery specializes in hit-and-run tactics. Mules are an absolute requirement in a country abounding with difficult mountain trails, impassable for motors.

PART FOUR

Can Victory Be Attained by Guerrilla Operations?

Guerrilla hostilities are but one phase of the war of resistance against Japan and the answer to the question of whether or not they can produce ultimate victory can be given only after investigation and comparison of all elements of our own strength with those of the enemy. The particulars of such a comparison are many. First, the strong Japanese bandit nation is an absolute monarchy. During the course of her invasion of China she had made comparative progress in the techniques of industrial production and in the development of excellence and skill in her army, navy, and air force. But in spite of this industrial progress she remains an absolute monarchy of inferior physical endowments. Her man power, her raw materials and her financial resources are all inadequate and insufficient to maintain her in protracted warfare or to meet the situation presented by a war prosecuted over a vast area. Added to this is the anti-war feeling now manifested by the Japanese people, a feeling which is shared by the junior officers and more extensively, by the soldiers of the invading army. Furthermore, China is not Japan's only enemy. Japan is unable to employ her entire strength in the attack on China; she can not, at most, spare more than 1,000,000 men for this purpose as she must hold any in excess of that number for use against other possible opponents. Because of these important primary considerations the invading Japanese bandits can hope neither to be victorious in a protracted struggle nor to conquer a vast area. Their strategy must be one of lightning war and speedy decision. If we can hold out for three or more years it will be most difficult for Japan to bear up under the strain.

In the war the Japanese brigands must depend upon lines of communication linking the principal cities as routes for the transport of war materials. The most important considerations for her are that her rear be stable and peaceful and that her lines of communication be intact. It is not to her advantage to wage war over a vast area with disrupted lines of communication. She can not disperse her strength and fight in a number of places and her greatest fears are thus, eruptions in her rear and disruption of her lines of communication. If she can maintain communications she will be able at will to speedily concentrate powerful forces at strategic points to engage our organized units in decisive battle. Another important Japanese objective is to profit from the indus-

tries, finances, and man power in captured areas and with them to augment her own insufficient strength. Certainly it is not to her advantage to forego these benefits, nor to be forced to dissipate her energies in a type of warfare in which the gains will not compensate for the losses. It is for these reasons that guerrilla warfare conducted in each bit of conquered territory over a wide area will be a heavy blow struck at the Japanese bandits. Experience in the five northern provinces as well as in Kiangsu, Che Kiang and An Hui has absolutely established the truth of this assertion.

2.

China is a country half colonial and half feudal; it is a country which is politically, militarily, and economically backward. This is an inescapable conclusion. It is a vast country in which the terrain is complicated and the facilities for communication are poor. All these factors favor country with great resources and tremendous population; a protracted war; they all favor the application of mobile warfare and guerrilla operations. The establishment of innumerable anti-Japanese bases behind the enemy's lines will force him to fight unceasingly in many places at once both to his front and his rear. He thus endlessly expends his resources.

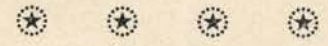
We must unite the strength of the army with that of the people; we must strike the weak spots in the enemy's flanks; in his front; in his rear. We must make war everywhere and thus cause dispersal of his forces and dissipation of his strength. Thus the time will come when a gradual change will become evident in the relative position of ourselves and our enemy and when that day comes it will see the beginning of our ultimate victory over the Japanese.

3.

Although China's population is great it is unorganized. This is a weakness which must be taken into account. The Japanese bandits have invaded our country not merely to conquer territory but to carry out the violent, rapacious and murderous policy of their government which is the extinction of the Chinese race. For this compelling reason we must unite the nation without regard to parties or classes and follow our policy of resistance to the end. China today is not the China of old. It is not like Abyssinia. China today is at the point of her greatest historical progress. The standards of literacy among the masses have been raised; the rapprochement of communists and nationalists has laid the foundation for an anti-Japanese war front that is constantly being strengthened and expanded; government, army and people are all working with great energy; the raw material resources and the economic strength of the nation are waiting to be used; the unorganized people is becoming an organized nation. These energies must be directed toward the goal of protracted war so that should the Japanese occupy much of our territory or even most of it, it is we who will gain final victory. Not only must those behind our lines organize for resistance but also those who live in Japanese occupied territory in every part of the country must do the same. The traitors who accept the Japanese as fathers are few in number and those who have taken oath that they would prefer death to abject slavery are many. If we resist with this spirit what enemy can we not conquer and who can say that ultimate victory will not be ours?

The Japanese are waging a barbaric war along uncivilized lines. For that reason Japanese of all classes oppose the policies of their government, as do vast international groups. On the other hand, because China's cause is righteous, our countrymen of all classes and parties are united to oppose the invader; we have sympathy in many foreign countries, including even Japan itself. This is perhaps the most important reason why Japan will lose and China will win.

The progress of the war for the emancipation of the Chinese people will be in accord with these facts. The guerrilla war of resistance will be in accord with these facts, and that guerrilla operations correlated with those of our regular forces will produce victory is the conviction of the many patriots who devote their entire strength to guerrilla hostilities.



The skilful tactician may be likened to the *shuai-jan*. Now the shuai-jan is a snake that is found in the Ch'and mountains. Strike at its head, and you will be attacked by its tail; strike at its tail, and you will be attacked by its head; strike at its middle, and you will be attacked by head and tail both. — SUN TZU.

THE GUERRILLA

By Lieutenant Fred J. Wilkins

THERE was no sign of life near the trucks. The little major gripped his sword a bit tighter and looked around the overturned trailer. At his signal riflemen scattered in the cane grove, hunting for signs of enemy troops; they didn't find any; they never did. . . .

Recurring successes of Chinese guerrillas brought home to the Japanese the fact that guerrilla warfare is not a matter to be laughed off. This form of battle that is so old it is new does not just happen. Almost forgotten, or classed as something below the social level of the professional soldier, irregular combat is a skilful method of waging war that yields results quite out of proportion to the effort expended.

Perhaps the chief reason military men have been scornful of such tactics is because of the claim that they are not in themselves decisive—they are not intended to be so. Again they look down their noses at our irregular and state that he can operate only in hilly terrain; that's correct, mountains — or Dublin's house tops, North Africa, Arabia, Finland's snows, or any other place where men understand guerrilla methods. Drill-book generals point out that we are discussing an old fashioned bit of froth, that Lawrence was a romanticist, and Allenby won in Palestine, anyway. Killing is old fashioned, too, but we still kill, and none better than the guerrilla.

To begin with, the soldier is often inclined to neglect the political and economic aspects of his calling; strategy, in the modern sense, cannot be separated from ideologies and beliefs, not when total war strikes at every part of a nation. Any method that can keep alive hope and sustain the political framework, even in the face of reverses in the field, has done a vast amount to win a war; to a large extent defeats on the field of battle may be counteracted by successes in other fields. Lawrence understood this; to him guerrilla warfare was bigger than harassing an enemy: he was building a nation. That he failed is no reflection on his dream or his method. Today, in China, the guerrilla keeps the war going; he furnishes no great victories, but he maintains hope and worries his foe against the day when strong field forces, now building, can drive the invader into the sea.

That part of the guerrilla's mission is one of his chief excuses for being; he is one part of the nation that hasn't been beaten. Again, mainly, political, the idea may be to simply prolong or make the struggle appear of larger proportions, thus inducing outside attention and aid. The Irish Rebellion was largely waged on this basis. With no field army, the guerrilla is the only one who could have brought the war to a satisfactory conclusion.

In a completely occupied nation, such as the Lowlands or Norway, guerrilla warfare may partake of a political and economic nature almost completely, with political and secret police the war wagers. Here again the primary object is to keep hope alive until field forces can be landed and complete the job in the regular manner. Politico-guerrilla warfare is a recent development, at least in its present form, coming into being since the introduction of machinery and rapid communication. Sabotage of enemy installations in the occupied territory and destruction of captured industrial facilities take the place of combat. Means and methods of attack and planning follow the same lines as other irregular operations having strictly military objects. Such warfare has the added advantage of being waged *before* actual hostilities break out. While now famous as Fifth Column work, such methods follow guerrilla technique to the letter. Known or suspected enemy agents, secret police and native sympathizers are the personnel targets; their deaths or disappearance naturally has a cooling effect on others seeking to coöperate with the conquerors.

Systematic sabotage of raw materials and destruction of manufactures, disruption of communications and supply lines passing through the country hamper the purely military side of the conquest, or make it too costly for the effort expended; contemporary military conquest, as always, must pay some dividend. Slowing of agricultural and industrial supplements to the war machine makes the enemy civilians less likely to retain their war enthusiasm at a high pitch. Every effort must be made to give the impression of accidents and the technique of sabotage highly developed. Crude attempts at attacking enemy troops should be discouraged; though every person dealing with the enemy or showing signs of coöperating should be disposed of. Unable to get coöperation, larger and larger field forces must be stationed in the land. Every soldier detached for guard duty is one less man that can be used in the field.

Underground political war of this nature is gradually mounting in the conquered nations of Europe; soldiers should and must study the uses to which ideas are being put. Take the V symbol as one example. Here we have an example of guerrilla warfare being waged with

nothing more deadly than one-twenty-sixth of the alphabet, but wait and see what results are obtained. Understanding of the proper use of political guerrillas is essential to the employment of troops waging irregular warfare.

The purely military aspects of the guerrilla's struggle are among the most glamorous in warfare; there is a romantic halo about his head, for always he has been a little man standing up against a big fellow trying to take his home. This has always been true; go back to Biblical times, or take the present, and the guerrilla has been doing a job that seemed too big for him. There is much of similarity in the men; there is an amazing agreement as to method, an agreement that is not so astounding when we consider that there is just one right way to do their job.

Irregular action is planned, even more carefully than regular combat is supposedly conceived. This fact is overlooked; that is why the guerrilla is confused with a bandit or partisan and thought of as a wandering sniper and thief. A guerrilla never wanders; he goes with a purpose. Irregular warfare, in the popular misconception, is waged by irregulars in the strictest sense—something like the Spanish civilians who grabbed their pitchforks and attacked Napoleon's columns. That was possible once, but today guerrillas are highly trained, and even in other days the successful irregular soon became a specialist, even though he never gave conscious thought to what he was doing. Guerrilla fighters are part of the regular military establishment today; they wear uniforms when engaging in battle, though naturally secret agents dress as necessary.

Guerrilla action may take the form of holding certain ground until field forces can arrive and take over, a field in which parachute troops and armored and motorized units are well adapted. This should not be confused with a delaying defense or a step by step withdrawal. Irregular action is offensive in nature, even though the main picture may be defensive—a strategical defense employing a tactical offensive. By a series of small-scale, local raids the guerrilla cripples and bogs down the enemy advance. There is not much point in arguments as to whether or not he is decisive or can hold the ground alone: the guerrilla is a preparer and a crippler.

Decision regarding the employment of guerrilla troops may rest with the high command; frequently such troops come into being and are taken over. High commanders should be familiar with this form of combat, so that detached small units may be employed to the greatest advantage, instead of being sacrificed in a heroic stand that accomplishes nothing.

At this writing Russian guerrillas are landing with both feet on extended German communication lines. Apparently there was considerable preliminary preparation for just this emergency, as the Soviets are very good at before-the-act actions regarding sabotage and harassment; civilians and army forces cut off by the advance of the Germans are doing the work and they are necessitating the use of abnormally large guards, men that could be put to better uses on the battlefield. There is no central direction here; cut off from their friends, the irregulars must act independently. Often only one operation is possible before they are run to earth. Yet their pre-war schooling in what and how to injure is a serious nibbling at the vulnerable German rear. Here is an excellent example of being ready.

Use of irregular troops is still dependent to some extent on terrain, and the question of their employment may be decided by favorable mountain and marsh lands. Certain parts of various theaters of action are more suited to guerrilla action than others: our Southwest is an ideal spot, while thickly populated eastern seaboard localities would be less desirable for irregular fighting. Broken terrain forces dispersion of troops, thus permitting attack on small groups and extended communications. Yet lack of what may be considered ideal ground should not deter the commander from acting on guerrilla principles; fit the ground to your ideas of surprise and speed and deception.

Guerrilla action without a general mission is apt to accomplish nothing more than temporary embarrassment to an enemy. Here was where Lawrence differed from other irregulars; he was one of the few, perhaps the first, who rationalized what he was doing and came to the conclusion that, to the irregular, the enemy field forces are not the prime objective. Due to poor industrial facilities, the Turks could barely keep their men supplied; the difficulty was further complicated by having to send supplies all the way to Arabia on a few railroads. It was the matériel side of the Turkish Army that Lawrence attacked; personnel losses inflicted were incidental and of small moment compared to the systematic destruction of bridges, roads and rolling stock.

Lawrence decided against the foolish attempt of driving the better trained and equipped Turkish field forces from the land—he was merely going to make it impossible for them to stay. That is the model for all guerrilla operations. Back through history, perhaps with no conscious thought, all irregular leaders have followed much the same pattern: avoid a pitched battle, but make it impossible for the other fellow to exist. Let him hold his line of forts and railways—only whittle until that is all he holds. Lawrence did exactly this; he and his Arabs did the whittling and the British field forces did the rest.

The all-embracing mission of the guerrilla is to decide on the most vulnerable point in the enemy fabric and then rip and tear at this point until the whole cloth gives way. This general objective is apart from the many smaller missions that are assigned to bring about the accomplishment of the chief objective.

Students of Lawrence and long trained in civil war, the Chinese guerrillas recognized this point. Like the Arabs their problem is largely one of facing a foe superior in the field; also one that can stand losses in men better than matériel. Japan must import most of her

raw materials, much of her machinery, fuel—almost everything necessary to wage war. The Chinese idea is to make the war as costly as possible to the invader in time, in men, in material wealth. Remember time, too. Every day the war drags, the field forces of China are just so much better trained and equipped.

Objectives of the irregulars consist primarily of metal. Every metal rail lost is a drain on the Japanese economy; every yard of copper wire cut down is harder to replace than the last. Naturally the disruption of supply and communication incident to destruction of railway lines hampers the purely military side of the conquest. The desire to make the war expensive takes such forms as causing the Japanese to expend large amounts of fuel and ammunition to no purpose. A sniper will creep near a fortified railway station and let go a few shots; instantly the countryside is blown apart by the garrison; miles away the guerrillas are planning their next move. False alarms are sent in by spies and Nipponese motorized columns dash about the countryside burning precious petrol in pursuit of non-existing bandits—or the trucks are ambushed.

Vital secondary aims include the task of keeping civilian morale high and the building of a strong spirit of nationalism, plus giving the invaders a bad eye in the international arena. Announcing a certain province captured, the Japs may have to admit months later that all they can control is the land within rifle shot of their posts. Then the steady losses in men, negligible in any one encounter but rising to considerable proportions as a whole, are not helping the morale of the enemy home front; despite big promises the Japanese find that the war drags into year after year and their friends and relatives return in the little ash boxes.

In a situation where guerrillas are better backed by field forces, or will be in a short time, their prime objective may be nothing more than the blocking of an advance until supporting troops can arrive. Objectives here would be anything that hampered the advance of the enemy columns, chiefly supply, avenues of approach and all rear installations, with the object of forcing him to turn aside until his rear and flanks are clear. The "scorched earth" policy could well be applied.

An imaginary situation might further illustrate. Suppose strong enemy forces were attacking the Eastern coast of the United States and threatening our vital industrial areas; all available field forces are needed to repel the attacks; other attacks, weaker, come against the West coast and through Mexico or the Gulf area. These last thrusts could be met by guerrilla action on the part of small units, particularly cavalry and motorized infantry, even if civilian vehicles had to be used. Enemy attacks on this Hemisphere may have to be met, in the initial stages, by small forces; the broken terrain of much of the two continents allows full sway to the daring of the irregular in his efforts to cripple invasion forces. Nominally defensive, guerrilla tactics can be adapted to the attack and used by expeditionary forces, especially when secret agents have prepared the way; Norway proved this.

Once the general picture is sketched in, the brush strokes that go to complete the canvas can be applied.

Success of any particular operation and of the campaign as a whole is dependent on surprise. Secrecy is based on intelligence of the enemy, and such information must be complete, accurate and up to date, for the guerrilla does not have the weight to push through an attack if his plans go wrong.

Constant scouting and the equally and even more important use of espionage agents and civilian informers is necessary. This would lead to the conclusion that planning guerrilla operations before hostilities break out is the wise thing; agents and spies are already on the ground; communication channels are planned. Failing in this every effort should be made to establish contact with political "outs," friendly civilians, or slip in spies. Persons familiar with the language, customs and district should be included in each guerrilla band, if these are operating from their homeland. At home or abroad every effort should be made to cultivate the good will of civilians and protect them from harm; they form an invaluable auxiliary.

Intelligence may be obtained in any way that promises returns: intelligence leads to intelligence, if you care for punning. Full advantage must be taken of any agencies such as radio, vehicles and aircraft. Portable radios are of great value in transmitting information; naturally fixed sets are subject to interception and should be changed frequently. Lawrence used armored cars as scouting and striking machines in the last war, and they are of more value today. Aviation will likely be limited, but small planes able to land on poor fields and easily concealed are of decided value. Reconnaissance by mounted forces, particularly over desert lands, is desirable and profitable.

By whatever method, all enemy installations in the area should be noted; any change that would make them vulnerable to attack, or movements of troops or supplies that would cause damage if attacked, should be noted at once by the various information services. On the basis of this information the guerrilla commander decides whether the probable enemy loss will outweigh the possible friendly losses. If the gain outweighs the cost he makes his plans.

The smallest body of men that can reasonably expect to do the job is taken; more add little to the blow, but much to the risk of discovery. Rehearsals should be held; at least the plan should be discussed thoroughly and each man knows what he must do—en route, at the scene, and in case there is a slip.

For a well planned operation involves going, doing and returning; a successful raid is almost over before it begins, hence going and coming are actually more important. Terrain is of value in movement; that is why mountains, marsh and woods are still favorite backgrounds. When movement must take place over desert

or plains, rapidity of movement must compensate for cover and concealment. Armored vehicles and cavalry, particularly portée, are first choices for this form of attack.

As for the actual attack—that is a surprise burst of fire, a bridge buckling, a shower of grenades out of the night. There must be no continuity of attack, no pursuit, no reserves. Irregular attacks that fail to surprise and overwhelm should be broken off at once; the troops scatter and return to their bases, or selected intermediate hiding places. The exception to this rule pertains to a deliberate hanging on and retreat with the idea of leading the enemy into a trap. For instance light armored units may strike a supply train and fall back a little bit at a time, luring heavier enemy machines into a nest of heavy tanks, then return and strike the now unprotected vehicles.

In any case losses should be avoided; this is an iron-clad rule if you are commanding native forces, or poorly trained men, since a few heavy blows will scare away those not already killed. After all, your idea is to inflict loss on the other side, not for him to injure you. Wandering raids and combats are discouraged and guarded against, though planned sniping by a few selected individuals keeps enemy troops jittery and gives your own troops something to do during long waits. Naturally such sniping must be conducted in such a manner that friendly civilians are not made the brunt of reprisals.

On friendly ground the guerrilla may partake of the nature of a partisan, hiding his weapons after an attack and reverting to an innocent farmer. A considerable part of Chinese success has been due to the way they have combined regular troops and civilians, frequently entire villages, in their assaults on the railways. Friendly inhabitants may hide guerrillas and their equipment, though each civilian must be treated as a separate case and none trusted, even in nominally friendly territory, until they have been proven trustworthy.

Ambush, the luring attack, and swift rushes on detached posts are favorite irregular tactics. Mountainous land with few roads offers an ideal setting for ambush, as does the winter and deep snows. Every effort must be made to force dispersion, thus weakening the enemy effort. Give the appearance of scattered, uncoördinated attacks, and your problem is simplified. Little attention may be paid you until serious damage has been wrought.

Training and equipment of the irregular is of great importance; it should be repeated that undirected individuals can do damage, but it takes well thought out methods and trained soldiers to cripple. Schools are held for irregular leaders and men in China, and the Russians have done a great deal in this line, chiefly in the field of politico-guerrilla combat. Regular troops will ordinarily be sufficiently trained but may require special instruction in various operations. Men selected obviously must be the best. Frequently working on their own, men and leaders cannot be just average.

It is always desirable and necessary to have troops familiar with an area, defend or attack in that shelter; changes in climate, altitude and foods and water may ruin an otherwise fine unit, at least until they are acclimated. Finnish troops waged guerrilla warfare against the Russians and got away with it because they knew the country, could operate across deep snow, were able to act in an independent manner and were willing to take calculated risks and some not so calculated. On the other hand, English forces in Norway wished to take advantage of the rugged nature of that country and fight an irregular campaign, but well trained German mountain troops, trained and equipped for snow and mountains, beat them to the punch. It takes more than willingness; you have to understand irregular tactics and then be equipped and trained to carry them through.

Advances in industry and the sciences have tossed a two-edged sword in the direction of the guerrilla: he has more to fight with, but he is rendered more liable to discovery. Canned foods and food concentrates have relieved him of much of his supply worries; automatic weapons enable him to use smaller numbers and still maintain a high rate of fire; infantry mortars provide him with artillery; motors permit a rapid method of travel.

Parachute troops and air infantry have opened an entirely new field to the guerrilla. Groups dropped in broken country can harass communications, do all that ground troops might be unable to do if they were forced to slip through enemy patrols and lines. Most of the ordinary employment of these troops is of an irregular nature, and the threat of their employment is enough to force the holding back of reserves, thus accomplishing one objective of the guerrilla.

Armored vehicles and trucks have been mentioned before; the gasoline supply problem will limit their use, but if at all possible of solution, this matter should be solved; motors give a long arm to the irregular, even if used only once. Enemy fuel depots are a prime objective and will help relieve the petrol situation. In fact any weapon and article of equipment that won't burden the guerrilla should be used, or adapted to give mobility, surprise and striking power.

Stripped of externals, there isn't a vast amount of difference between regular war and the operations of the guerrilla. Speed, deception, surprise, surely these have a place in so-called regular battle. Only the hit and run method of the irregular is different; that is where the guerrilla and the field army part company. Our troops should have training in irregular combat, particularly units like the cavalry divisions and motorized forces, which are such ideal agencies for this form of slaughter. Home Guard instruction should be almost entirely devoted to enabling them to defend their districts in this way of battle. The matter is worth some study; today's warfare is of a nature that makes every tool and technique, every weapon and tactic, worthy of use.

Organization of Guerrilla Or Raider Unit

*By Captain George Haig**

LONDON, Aug. 23 (AP). In withdrawing from Crete, the British left behind 12,970 men, many of them dead or captured, and an undetermined number at large.

These ragged, defiant bands, as described by officers returning from Egypt, steal out at night to kill German sentries and sabotage anything of value to the Germans.

They set mysterious fires around German airports and barracks. They live by looting German commissaries.

* * *

IN this present war the question has again arisen as to the effectiveness of a guerrilla campaign in modern war, and the question of parallel importance: "Can an effective guerrilla unit be established and trained in our own Army and what would be the nature of the organization and training?"

Guerrilla organizations have been surprisingly effective in their work in practically all of the major wars of the world, and as a matter of fact we have only to turn to the development of our own western frontier to realize how much bands of determined men, in this case the Indians, did retard the advance of supply lines and communications.

History has shown us that guerrilla type of warfare has been effective in the past, practically in every type of engagement. Our current news and service journals show us that guerrillas are also employed to advantage today. The dubious will say that the situations are too specialized and ask, "Should we form a unit in the off-chance that we will hit a situation comparable to those cited?" The argument would undoubtedly end with, "What good can we do with a guerrilla organization?" To answer this question let us look at the present means available to harass the enemy and interrupt his supply lines before launching an attack. First we have the air force to make nightly raids deep into the enemy territory to bomb industrial and rail centers, bridges and important highways. To supplement that we have artillery to fire on bridges and supply columns, ammunition depots and the like nearer the front, and this completes the means at their disposal to interrupt and constantly bother the installations behind the enemy lines. There are however many installations or key points in enemy territory that are exceedingly valuable, and at the same time difficult for observers to discover. A command post, for instance, would be hard to find from aerial reconnaissance or terrestrial observation, and yet its destruction would decidedly hamper the enemy until it was re-established and the organization was again under control. Working in conjunction with a division, with full access to the G-2 reports, the guerrillas would be sent through the lines with the specific mission of destroying definite elements of the enemy installations, which can't be destroyed by artillery or bombers. Supply lines, communication lines, command posts and similar objects would be the target for these troops. It will be much easier for groups of well trained men to locate railheads, dumps, CP's and similar installations by studying the traffic on the roadways, which are well concealed, than it is for an aerial observer who is naturally limited in his observations. It is also possible for the raiders to strike at a more opportune time by virtue of actually being on the scene and striking at exactly the right moment. The mere presence of our troops behind the enemy lines, spying on their activities, destroying their important supply and ammunition depots and sniping on the troops day and night is enough to make them nervous and break down their morale.

Such a group of men would have to have special training, be well adapted to their work through training and temperament and, above all, be well organized. If we did form such an organization it is suggested that we call them "Raider Troops" because no matter how broad-minded one may be, the term "guerrilla" has a varied implication mostly unfavorable and unpleasant; the term "Raider Troops" sounds more military, even though such troops might be nick-named "guerrillas."

Organization

The organization would best be that of separate squadrons, each consisting of a headquarters troop, and three line troops. Each line troop would consist of a troop commander, a first sergeant, and three platoons each having a lieutenant, one platoon sergeant and three squads, consisting of a sergeant, a corporal and nine privates. The headquarters troop would have a troop commander and four primary sections, namely Intelligence and Operations, Administration, Transportation, Supply and Mess. To keep the overhead in the line troops to an absolute minimum all details of administration, transportation and even mess would be left to the headquarters troop. The purpose of taking these functions away from the line troops is to increase their mobility and effectiveness. The sole responsibility of the troop commander will be the efficient training of

*7th Field Artillery Battalion, Fort Devens, Mass.

his organization for its combat duties. During combat, the operation of a troop, for the greater part, would be behind the enemy lines where it would be impossible for a troop commander to handle a mess or the transportation, on the other hand, the main function of the headquarters troop will be to remain at the base, doing the necessary staff work for operation and administration and supplies. The very nature of their work limits the impedimenta that they may carry. Shelter halves, food and blankets should be sacrificed for a comparable weight, or at least for a reasonable weight of ammunition and demolitions. The very supply trains that he is to destroy will well provide his fare if the action continues after his own rations have been consumed.

Equipment

With mobility and lightness of equipment, in view, it is important that a raider trooper must have a uniform, arms and equipment that will meet all the requirements. Therefore the following is a suggestion on the uniform, arms, and equipment of a raider unit: The uniform of such raiders should be adaptable for all seasons and all occasions, mounted or dismounted. And because they must travel light they must be able to "live" in their uniform, day and night without the benefit of tent or blanket.

Beginning with the shoes, raider troops should have shoes with heavy crêpe (gum) soles. Gum soles are not slippery over rocky or grassy country and on wet ground the feet will not get wet. They will not wear out as rapidly as leather, and lastly the footsteps over hard pavement or roads will have less noise in approach to the enemy encampments.

They should wear jodhpurs. Jodhpurs are more practicable for riding as well as walking. For extra service they should be reënforced with heavy material be low the knees for protection against the underbrush.

They may wear a khaki or woolen olive-drab shirt, but instead of a wind-breaker they should have a tunic well below the waist but above the knees. The collar may be opened when desired. On this tunic a woolen sash will well protect the most vunerable organs: stomach, kidneys, etc.

Then comes the headgear. At the present time no army has a headgear which is adaptable for all weather use. A cap similar to the winter cap worn by enlisted men of the U. S. Army with a large scarf or kerchief attached to the back of it will enable a raider to operate in any weather.

In tropical climates when the sun is almost unbearable, this kerchief attached to the back will protect the soldier when wrapped around the neck and face in Arab fashion, and it is also good protection against sand storms. In colder climates or at night when it is colder even in the desert, when such a kerchief is wrapped around the neck and head it will protect it from colds.

The only extra garment which may be carried by a raider is a trench coat or cape, which will serve as a raincoat as well as a cover at night.

With such a uniform, a raider can sleep outdoors without a tent or blanket, and without suffering, all year around, in temperate weather or torrid climate. Also such a uniform is somewhat unique (with perhaps a yellow or red sash) and will give the raider a distinction which will make him formidable looking.

As for arms they may carry the new light rifles, machetes, and at least one sub-machine gun to a squad. The machete is a very versatile weapon, it may be used to cut through underbrush and one does not need ammunition with a machete, hence it is silent. Of course every raider must carry hand grenades.

Training

When such raider units are organized they should first be trained like cavalry soldiers; mounted drill, target practice, care of animals, map reading, demolition and destruction, etc. They should also be trained in handling all makes of automobiles and arms as it may be necessary to pick up cars or tanks and arms from the enemy for their own use.

The second phase of their training should be toughening up of the raiders; hiking, living off the country, and so on. For communication no dependence may be placed on telephone, radio, light or any other burdensome or interception devices.

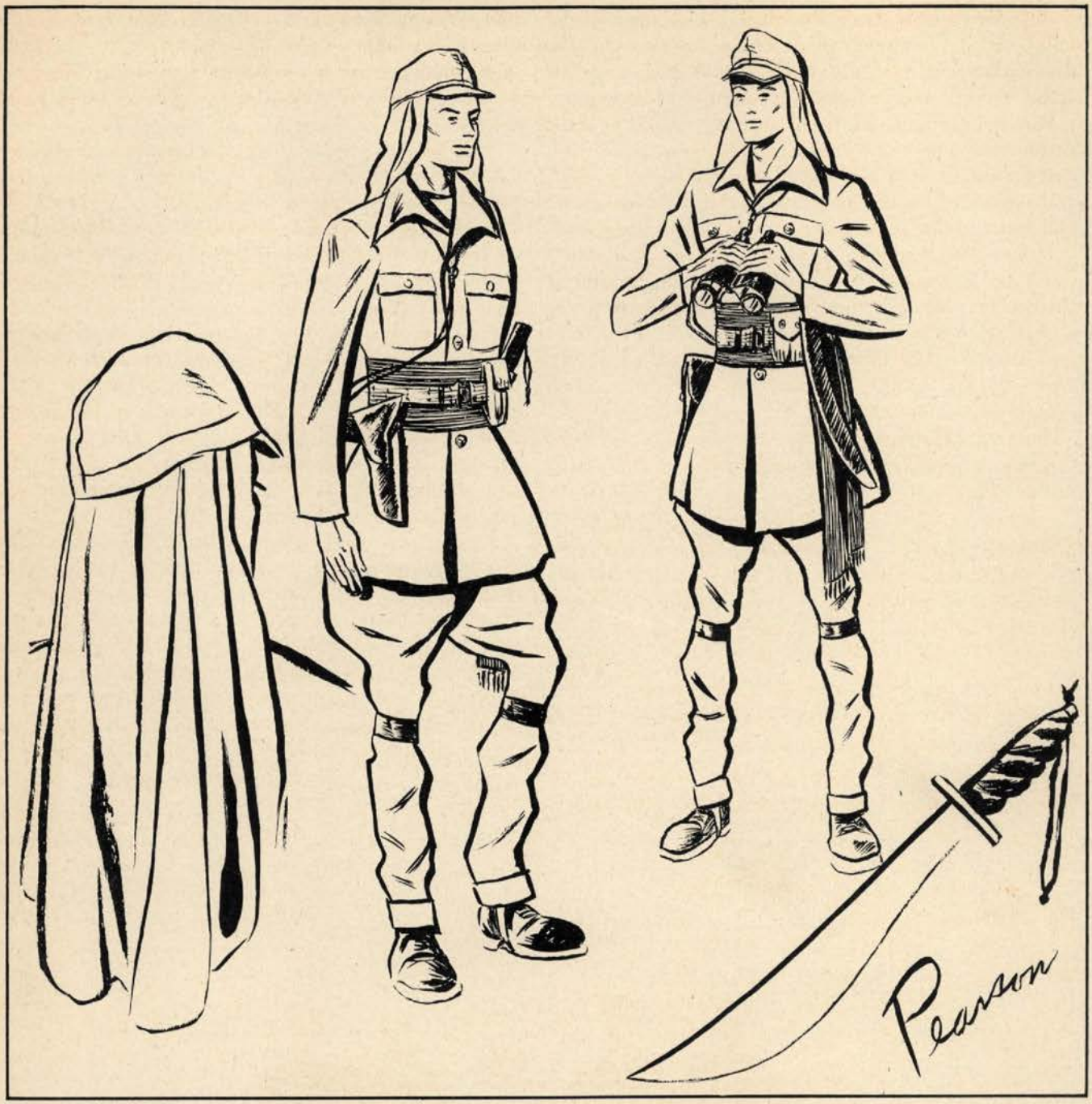
Officers should be trained in tactics. Before every operation, the troop commander should have a conference and discussion with his lieutenants and discuss all the details of the mission, deciding on an assembly, or rallying point. The raiders should be trained in the workings of the enemy organization and methods.

It is also important that in each troop there should be an expert on various commercial communication in stallations and men who can speak foreign languages.

The raider trooper should be mounted on horseback yet he may be transported by motor, or by any other means. He must also be trained to fight or do his operations on foot.

No definite rule can be given as to the workings of guerrilla warfare or tactics. But in order to train raiders, all possible use and purpose of guerrilla warfare should be listed and discussed, and each one illustrated by one or more methods.

The personnel should be selected from men already in the service instead of recruits. The majority of them should come from the cavalry as the cavalry trooper is better suited for this kind of warfare. But it is important that each squad should have one or two men from the Artillery and one or two men from the engineers. The purpose of this is that when the raiders are to attack a battery of Field Artillery the artillerymen will know better the set-up and installations of a gun battery thar other soldiers. And in like manner an engineer soldier will understand the strength and importance of bridges,



military installations and of demolishing them, from his own experience in their construction.

Missions

Let us now consider the duties of a guerrilla unit attached to a division and coördinated with a division. Their chief duties would be to filter through the enemy lines with the purpose of harassing the troops, interrupt lines of communication, seek out command posts and disrupt them, seek out the enemy supply and ammunition depots and destroy them, disrupt the supply trains, seek out enemy troops and tank concentrations, and in general hinder the enemy as much as possible without coming to grips with him, and without leaving sufficient trace for him to discover their whereabouts and operating procedure to enable him to trap and destroy them. Of course the value of guerrilla fighters in a defensive operation is very great. They can slow down the advance of the enemy by luring, misleading and trapping him.

The extent of these actions will normally be for a period of only a few days, since all the ammunition and demolitions will have to be packed the first trip, and there will be no means of replacement. Therefore at the completion of the mission or the expenditure of his ammunition the guerrilla must return to his base and resupply. It is therefore probable that the duration of his activities will be made at the most three days and nights. His activities obviously will be made during darkness and the days will be spent in the nearest surrounding cover in which he can hide himself from the enemy.

The troops must have a definite mission in support of a divisional or similar plan. These missions must be thoroughly and carefully studied with full access to aerial photos, and information relative to prominent enemy installations. In the action comparable to those that are going on today in Europe it is foolish to suppose that a band of men could go through the enemy lines and stay there for weeks on end going here and there and wantonly destroying the enemy installations without sooner or later being apprehended. Such an action would be of nuisance value to the enemy, but might not further the plans of the division in that there would be nothing to depend on. On the other hand, it is perfectly possible that a band of well trained men with specific instructions and a thorough knowledge of terrain and enemy disposition could slip through the enemy lines and accomplish their mission and return. An action of this nature would take in the neighborhood of three to five days.

Personnel

To develop these qualities in a man will require careful culling and training, and will require at the outset officers and men from all branches of the army interested in this work, willing to forget all differences of opinion as to the effectiveness of their own particular branch, and capable of instructing the group as to the workings of the smaller units so that they will better hamper the enemy who have similar installations.

The men must be at once aggressive and retiring, impulsive and deliberate, prepared for any eventuality yet cool in his mental actions, the raider must have the cunning of an animal coupled with the intelligence required to use modern arms to combat modern armies. Above all he must be self-reliant and confident and be aware of his job.

The officer must have all of these qualities, be able to render prompt and accurate decisions, have a well defined sense of values, and have the personality to keep the men under him working toward the objective assigned to him and not expose himself on targets of less importance. In short he must be a grand strategist on a small scale.

Although the success of such an operation depends largely on the experience, originality, keenness of mind, understanding of human psychology, quickness of mind and body, versatility, and courage of the commander of his troops, basic rules can be made in such a form that they may apply to one particular situation and yet may be so flexible that they may be applied to other varied situations as well.

Finally, guerrilla warfare is not an offensive warfare in the sense of offense by regular forces. It may best be exemplified by the following phrase, which should be the doctrine of every raider, "Make your presence known and keep your whereabouts unknown." One can make his presence known by many means such as sniping, destruction of bridges, roads, railroads, lines of communication, burning depots, and in many other ways, yet he must keep his whereabouts unknown. After all an unseen enemy is more formidable than one who can be seen.

Editorial Comment

CARDED

PARTISAN WARFARE

The partisan, or his Spanish counterpart the guerrilla fighter, or approved exponent of the methords and tactics of irregular warfare, is not to be confounded with the brigand or the freebooter. The Spanish translation of *guerrilla* is "a skirmisher or light horseman." He is essentially a soldier, but a soldier attaining his end by ways and means diametrically opposed to those expounded by the orthodox military school. His simpler but none the less forcible methods include deception, the ambuscade, the surprise, the raid, harassment and ruthless sabotage.

Judging from the teachings of Biblical history, the irregular warrior was a striking factor in the great days of Joshua and of Moses. From medieval times onward he has fought and bled in all lands. He played a glorious part in resisting the successive invasions of England by the Romans, the Picts and Scots, the Saxons, the Norsemen, and Normans. Nor should one omit passing reference to the military methods of the renowned Duguesclin in opposing the English invasion of France in the 14th Century.

Coming down through the dark centuries of sanguinary and bitter wars that changed and rechanged the map of Europe many times over, we arrive at the period when the seasoned veterans of Napoleon the Great met their match at the hands of countless hordes of guerrilla soldiers among the wild hills of Calabria and in the mountain fastness and grim Sierras of Spain and Portugal; and in Italy, when Napoleon was conquering it for his brother Joseph, the infuriated peasantry joined in the common cause of ridding their beloved country of the hated foe.

During the years 1807-1813 of *conquista* and *reconquista* of the French might in Spain and Portugal, the Iberian peasantry were banded together under several guerrilla leaders, one of whom was the heroic Mina. Having perfect knowledge of the woods and passes of the mountains, and with immediate information of the French, these guerrillas would appear suddenly from concealment and cut off the enemy; or, if repulsed, they disappeared like shadows into the forests and desert. Sometimes they came several thousand strong; sometimes a little band of ten or twenty men would effect some startling exploit. To pursue them appeared hopeless, for they vanished as water sinks into the earth. Later, Mina's band joined Wellington and, after having undergone a course of discipline, rendered signal service as regular troops. In all of the civil wars of Spain the guerrillas, especially those of the Basque Provinces, have played a prominent part.

When guerrillas in uniform are taken captive they should be treated according to the usual customs of war. In the Franco-German War, however, the Germans refused to recognize as soldiers or extend the privileges of war to the *Francs-Tireurs*—a body of French volunteer sharpshooters who to a great extent adopted the system of guerrilla warfare.

Following the fortunes of the partisan or guerrilla fighter to the Western Hemisphere we remember that the first victory won by U. S. troops was essentially a partisan action—Concord, April 19, 1775. Moreover, the swarthy Mexican half-breed turned upon his Spanish oppressor as the Spaniard himself had turned upon his Gallic invader. The Red Man, with his back to the wall, also exemplified the guerrilla in his valiant fight against extinction. Similarly, such incidents in warfare have occurred in all quarters of the globe. Then, too, we have a record of tireless but tiresome attempt at the suppression of national and international piracy and dacoity, but in this respect we should appreciate the divergent motives. Partisan warfare as we understand it implies loyal and patriotic actuation rather than a desire for personal gain.

Our own Civil War history teems with feats of daring in adherence to the most approved patterns of irregular fighting by partisan soldiers of real distinction, on the side of the Confederacy. Here we witnessed the unusual spectacle of more than one regular general officer adopting irregular tactics and with unequivocal success; i.e., Generals J. E. B. Stuart and Nathan B. Forrest—not forgetting Colonels Mosby and Morgan.

During the World War, especially in 1914, Belgian and French guerrillas materially hindered the German advance. In 1916 the name of Pancho Villa was a thorn in the side of the United States. In 1918 the exploits of Lawrence of Arabia amazed the military world. Later, in the Spanish Civil War; in China; in Finland; in Poland; in the Low Countries; in France; and more recently in the Balkans, Crete and in Russia, guerrilla warfare highly organized, has assumed major proportions.

Partisan or guerrilla fighting is always what the regular armies dread, and, when directed by a bold leader with sagacious military faculties for war, it becomes a serious threat to the enemy lines of communications. When the Russian Cossacks swarmed around Napoleon's flanks, his genius was para-

lyzed; it was then that he soliloquized: "The whole secret of the art of war lies in making one's self master of the communications."

In hilly and broken terrain or in jungle-growth and thickets, guerrillas are most effective. Throughout history the *mounted* guerrilla employing stealth and cunning has been predominant. Surprise is the essence of such operations—a surprise blow with retreat before the opponent can recover as a sequel; and in consequence, the tasks are of necessity framed on a small scale.

For sheer audacity, courage, ingenuity and individual resourcefulness the American trooper is by nature and training a potential *guerrilla.* Parachutists and air-borne troop tactics now present fertile fields of operations for our cavalry and other troops schooled thoroughly in scouting, patrolling and raid tactics. Partisan warfare during this age of ruthless *total war,* has gained a position and respect hitherto not accorded such methods. Guerrilla warfare obviously has *arrived* as a major factor in military art—worthy of our profound professional consideration and exploitation.

We doubtless will hear considerably more of the *guerrilla* before the termination of the present conflict!

* * *

The Necessity for Discipline

The question is frequently asked, "Why do we need discipline in the army?" The answer is that there can be no orderly effort of any kind, in the army or out of it, without teamwork, which is merely the ultimate expression of disciplined organization. We have ample evidence of this truth in every phase of life. There is no business which is not conducted under certain rules and regulations, regulations which govern all, employers and employees alike, in all of their comings and doings and goings.

The life of a factory, for example, is centered about a certain amount of machinery. Each part is tended by someone who feeds it, oils it, operates it. When the machinery is in operation, everyone must be in his proper place, looking out for his particular task, else the whole scheme of manufacture is upset. To insure against anything of this kind, we must have rules governing the conduct of the operators. Infraction of any of these rules leads inevitably to trouble with the manufacturing scheme and brings in its train some kind of correction for the guilty one, disciplinary correction.

Again, let us take the discipline of the football team for an example. Every play is worked out in its smallest detail. Each player has a certain part to play. When the signal is given, each player does exactly what he has been told to do. If one of them fails, the play goes to pieces. If the failure is not excusable, the player goes off the field for not giving up to the spirit of teamwork.

So it is with the soldier. He knows that he is a part of a machine that will work smoothly if every man obeys orders, plays his part. He sees the machine work every day of his life. He obeys orders. He sees his comrades obeying orders. He has every confidence in them. He knows what they can do and he knows that they will always do the right thing; that they will keep on playing the game according to the rules. To him an order is like a signal to the football player. Neither stops to see what his team mates are going to do. Each knows that the other members of the team are going to play their parts, just as he is playing his part. Each knows just how the play is going to work out. Each knows that he is going to be backed up and, knowing this, he puts his best effort into what he is doing. With each repetition of the play, in practice or in the game, his confidence in his team mates grows until, in the end, he feels as sure of them as he does of himself. This final result is discipline, the spirit of teamwork, the spirit that keeps a man in line when his brain is reeling, which sends him smashing into the play with his last ounce of strength and which lifts him from the ground at the sound of the whistle to stagger back into his place.

* * *

Probably the most illuminating and comprehensive discussion of the subject of "Discipline and Leadership" is the lecture delivered to the First Class at the United States Military Academy by the then Commandant of Cadets and later Superintendent, Major General M. B. Stewart. The lecture *in toto* appears in *The Officers' Guide* (fifth edition) from which the foregoing excerpt is taken. It is well worth anyone's time to read.

* * *

Courtesy

In a letter recently received from a trainee he stated that he had been "greatly impressed by the personal courtesy as practiced in our army." He said that he wished only that "all sales people and those having positions in commercial life requiring contact with the general public could be given a similar course of instruction in courtesy and personal consideration since it surely would make the world a happier place in which to live and work."

* * *

In *Officers' Manual* by Moss it is stated:

Ordinary courtesy consists of acts of politeness, civility, respect, and consideration. It is the lubricant that reduces friction in human intercourse; it is the oil that causes the machinery of human relationship to run more smoothly.

Military courtesy is but the observance, the practice, of ordinary courtesy in the military service.

In all civilian vocations, including business, courtesy is a vitally important factor, and the employee who is invariably courteous possesses a real asset, often leading to advancement. On the other hand,

lack of courtesy is a decided handicap. Of two employees equally or nearly equally efficient, the one who is more courteous possesses a great advantage over the other.

If such is the importance of courtesy in civilian life, how much more important must it be in the military service which demands more sacrifice, fortitude, hardships, and severe dealing than are required in ordinary civilian pursuits? Rigorous discipline and difficult duties can be greatly helped or assuaged by a knowledge and practice of various forms of courtesy. Impersonally, the Service gains by the use of courtesy; personally, the individual benefits. Courtesy is a graceful vehicle for military efficiency. In all armies the manner in which military courtesies are observed and rendered by officers and men is an index to the manner in which other duties are performed. "Courtesy among military men is indispensable to discipline." – (FM 21-50, Military Courtesy and Discipline.)

Air Support Commands Created

Since the publication of a featured article in our July-August, 1941 issue—"Air Force in Support of Ground Forces," by General Brereton—five *Air Support Commands* have been created within the framework of the Air Forces Combat Command to provide effective and close air support of the Army's ground units.

The support commands include observation aviation (both lighter- and heavier-than-air); light bombers, dive bombers, aerial photograph planes, gliders and air transports for parachute troops and air-landing troops. This is a unified grouping of all the aviation elements that a ground force needs to achieve local air superiority and to insure the success of its mission.

Within the Army Air Forces, the first four Air Support Commands are under the control of the 1st, 2d, 3d, and 4th Air Forces, respectively, of the Air Forces Combat Command. The 5th Air Support Command will be under control of the Air Force Combat Command.

The First, Second, Third and Fourth Air Support Commands will operate with the First, Second, Third and Fourth Field Armies, respectively. The Fifth will operate with the Armored Force. Thus each of the Army's major strategical and maneuvering units will have an air support organization that is specifically identified with it.

This plan for support aviation will not require any change in the principle that all types of units of the Air Force Combat Command must be trained and used in support of ground forces. When conditions make it necessary, air support aviation may be used for special Air Force missions, in conjunction with naval forces or with ground forces other than those to which they are specifically identified.

It is stressed that flexibility in the use of aviation will be increased rather than diminished under this program.

Retrospection

In our September-October, 1940 issue of The Cavalry Journal there appeared a passage in the featured article, "Blitzkrieg," that we may well remember. An excerpt is as follows:

Germans Err

The prize of the B.E.F. and the First French Army was one to bedazzle any but the coolest judgment; and most unwisely, as the future may very likely prove, orders were given that it should be attained regardless of the cost involved. In this decision, it may fairly be surmised, the Germans were guilty of a cardinal error.

Not only did the effort impose an enormously bigger call on men and *matériel* with results far short of the original aspiration but on the chance of securing an immediate gain, *the opportunity, at least temporarily, was lost wherein to stage a lightning invasion of Great Britain;* an invasion which, in the state of public confusion and military denudation then prevailing in the island kingdom coupled with the Royal Navy's preoccupation with the immediate work of rescue and evacuation, might well then have been successful.

Had the Germans been content to "contain" the Allied armies in the North while at the same time ensuring that Weygand's army in the South was firmly held, out of their very considerable resources such an expeditionary force could have been got together which, opposed by nothing much more than raw recruit formations, should at least have been able to force a landing, the ultimate effect and consequences of which would have reached far forward into the incalculable.

The temptation to try to cut off and surround the British Expeditionary Force and "put it in the bag" *en bloc,* was more than the *Fuehrer* could resist, whatever his Generals may or may not have counselled.

Reserve Officers

Reserve officers, not on active duty, should consult their unit instructors without delay relative to several changes recently made by the War Department that might affect their status; i.e., requirements for certificate of capacity; certain reappointments in the Officers' Reserve Corps, etc.

Equine-Amity

Eight riding horses and an Anglo-Arab stallion, purchased by the Remount Division of the Quartermaster Corps, have been sent to the Venezuelan Army. The stallion will be used for stud purposes and the riding horses will become part of the Venezuelan Cavalry. Other horses may be sent to South American countries as a part of the United States' plan to promote Pan-American amity.

Elephant Guns

Reports indicate that instead of hurling tanks at tanks, like elephants butting elephants, both the Russians and Germans made extensive use of concealed and mobile antitank guns—even light artillery, emplaced in trucks in canalized positions—as the more effective means of combating opposing armored units.

For tests during maneuvers, General Headquarters recently organized three Provisional GHQ Antitank Groups "as a means of developing tank-shattering gun fire that will be flexible enough to surpass the speed of an armored force and massive enough to defeat it."

The three groups total approximately 144 37-mm. guns and 160 75-mm. guns.

Self-Propelled Gun Mounts

Fifty-four high-speed, self-propelled gun mounts for the Army's new provisional 93d Tank Destroyer Battalion were delivered by the Ordnance Department in less than 60 days after the equipment was ordered.

As currently constituted, the Battalion consists of thirty-six armored half-track cars mounting 75-mm. guns, eighteen Jeeps and "Swamp Buggies" mounting 37-mm. guns and ten light tanks.

Now in an experimental stage, the provisional tank destroyer battalion will make its first tactical experiments in the large-scale maneuvers being held this fall. Its guns can be sped into position, fired without time lost by emplacing, and quickly move on to other positions without losing time incident to limbering when weapons are towed.

The half-track cars mounting 75-mm. guns carry a crew of four men, two-way radio, have a gross weight of 17,500 pounds, including the crew; are capable of 50-miles-an-hour and possess a high degree of rough country mobility.

The 75-mm. gun is so mounted that the driver of the self-propelled gun mount can remain in his place when the gun is fired. Position of the gun enables the half-track car to be hidden behind a rise of ground, with only the gun itself exposed to view. The gun crew is protected by an armor-plate shield. The gun's elevation and traverse correspond to those of the standard mount. Pilot model of the half-track car with 75-mm. gun was constructed at Aberdeen Proving Ground.

The Jeeps mount 37-mm. guns, some with the gun facing forward and some to the rear. Pilot model of a "super-jeep," or "Swamp Buggy," constructed at Aberdeen Proving Ground, is a four-wheel drive, underslung vehicle with an unusually low silhouette. Its 37-mm. gun points forward, its engine is in the rear and its crew includes a driver, gunner and loader.

Encephalo

As a result of a recent discovery all horses and mules in the Army that were expected to participate in the current maneuvers in the South and Southwest were vaccinated against both the eastern and western variety of sleeping sickness.

Two types of the disease, an eastern and a western, separated by the Appalachian range, have been recognized for some time. The eastern variety is the more virulent.

Recently an outbreak among horses in the Boca Chica flats bordering on the Gulf of Mexico was found by officers of the Veterinary Corps to be due to the eastern form of the disease. This is the first time that this type has been found to occur in the western regions of the United States.

The vaccine is made at the Army Veterinary School, Washington, D. C., from chicken embryos inoculated within the egg shell by a special process. During periods of mass production fertile hen's eggs that have been incubated for ten days are used at the rate of 900 eggs a day.

Bliss Gets Remount Unit

Troop B, 252d Quartermaster Squadron (Remount), has been transferred from Fort Robinson, Nebraska, to Fort Bliss, Texas, for permanent change of station.

Appreciation

Grateful acknowledgment is tendered The Post Exchanges located at the home stations of cavalry regiments for donating Cavalry Regimental Distinctive Insignia for reproduction in our July-August issue.

The original insignia, arranged in a glassed-in frame in substantially the same order as appeared in The CAVALRY JOURNAL, now hangs in the Office of the Chief of Cavalry.

Sweet Tooth

The Army has made a toothsome change in its type "C" canned field rations. The ounce of chocolate has now been replaced by five pieces of hard candy, individually wrapped and in assorted flavors.

The substitution is based on results of recent tests on fatigue conducted at the University of Minnesota which prove that a soldier has more energy output if sugar is consumed periodically throughout the day rather than large quantities at mealtimes. The candies are issued on the theory that they will not be eaten at mealtime but will be consumed from time to time during long marches.

Please give the inclosed subscription card to a non-subscriber and use Change of Address Cards.

DEADLINE DATE NEXT ISSUE, NOVEMBER 10th.

Editor's Mail

EDITOR, THE CAVALRY JOURNAL:

In the Editor's Mail of the May-June CAVALRY JOURNAL there appeared an excellent letter from the Quartermaster General relating principally to Field Ration "C" as issued to the Army today.

There is one point about this ration which I have never been able to understand. The ration itself is excellent; it is ample, tasty, of sufficient variety to make it desirable, and can be eaten without any work of preparation, except for the coffee, if desired, all of which make it far superior for the purposes intended to any ration we have ever had before.

But why in the world is it packed as it is? Packed in round "beer" cans, it is just about the hardest ration for the soldier to carry in the places he has to carry it. Carried in the haversack or saddlebag of the dismounted or mounted soldier, it causes a bulge and does not readily lend itself to easy packing with other articles which must be carried. Carried in a vehicle, it will not stand on end unless braced, and if laid on its side, it rolls all around until it hits the floor and comes to rest in some far corner, usually under the seat.

Add to this that it cannot be stacked unless kept in boxes, that it requires more room because of its shape than necessary, and that if you wish to eat it cold you must "dig" the contents out of a deep can, and I think you have a lot of minor, but sound, objections to the packaging of this ration.

Not to be destructive only in my criticism and to offer what I think is a sound remedy, please consider the advantages of a different shaped container "can." Packed in a large size oval, or square with rounded corners, sardine can (you have bought many sardines in such cans), what would you have?

a. A can easily carried in the haversack, saddle-bag, or vehicle. No bulge, roll, or fall.

b. Easily stacked, as the bottoms of such cans fit securely over the tops of others because of the flare "flange" on the bottom.

c. Less room required to box or stack an equal number of rations.

d. And not the least—more easily consumed direct from the can. When opened the can would be more like a plate and no digging required.

When this ration was being developed, I asked a member of the "board" why such a can was not used, and cited the points I have mentioned above. The answer was that the round "beer" cans were more easily obtained commercially. I presume they were cheaper too. But now we must have these rations in really large quantities. I doubt that there would be any real difference in the cost of the cans. Besides I feel that the advantage of the one over the other to the "carrier and consumer" would warrant a small increase in cost, if necessary.

While on the subject of this ration, may I ask another question? Why not use this ration in lieu of that "terrible mistake," the "cooked" or "prepared" meal the soldier has inflicted upon him for lunch every day he is in the field or on the march? The cooked lunch represents the greatest waste of government rations in the Army. Packed in a sack or piece of wrapping or newspaper, I will leave it to any of our more than a million soldiers if ever one has tasted much better than a like amount of hay or straw when it came time to eat it. Dried out, jammed and crushed, or in wet weather, sodden and soggy, the most of it is thrown away by the disgusted soldier. Then, take into account the work of preparation during the wee small hours of the night. At best it is a sorry way to feed your men.

Weigh against this the issue of the Type "C" cans of suitable shape and how many votes do you think would be cast for the present method? There would be the further advantage that if due to unforeseen good luck, a lunch could be served by the kitchen, the canned lunch is just as good for the next day, and nothing has been wasted.

The Quartermaster General in his letter favors this idea and states that when used in this manner, the "A" and "B" ration is reduced accordingly. The only drawback seems to be the provision in Army regulations that "C" will be used only when the use of "A" or "B" is not practicable. I believe it not only is not practicable, but also it is a waste to use "A" or "B" rations for prepared lunches. If commanders would take it upon themselves to direct the issue of "C" rations for lunches, providing, of course, they can obtain them, instead of prepared lunches, the advantages would so quickly prove themselves that I doubt any real question would ever be raised as to why the "A" or "B" rations were not used for this purpose. Before this can be done, however, the Quartermaster General must do something about making the "C" ration available to the troops in sufficient quantity to make such issues possible.

From all this you will recognize that I, for one, am all for the "C" ration, but how I would like to see its packing and authorized use changed to more fully meet the requirements of its "carrier and consumer," Private John Rearrank. Do you suppose there's a chance?

Yours,
"X."

WASTE NOTHING . . . —Let's saVe before we haVe to . . . —

TIRE TOOL★

EDITOR'S NOTE: On page 22 of our May-June, 1941 issue, we published a picture of the "Miracle Tire Remover" tools. We now present a different kind of tire tool which also has merit.

* * *

A METHOD to speed up and ease the time wasting, back breaking job of changing tires has challenged the efforts of inventors since the first days of the automobile. Many are the fantastic contraptions devised, some of them almost larger than the vehicle itself and requiring several men to operate, and most of them harder to manage than the old fashioned job of hammering and wrenching off the flat.

But at last a really effective device has been hit on—one that can easily be assembled out of commonly available materials, that is simplicity itself to operate and that gets the work done in a jiffy. This device was conceived by Major C. Elford Smith, QMC, at Holabird. The parts for it consist of a piece of chain, four wood blocks, a couple of metal rods, two hooks, a spare piece of scrap metal and an ordinary jack.

Briefly described, it works in this way. First, lay the tire flat and place one of the blocks on each side of the casing, then on these lay the ends of the metal rods, which, of course, cross in the center. Block these two rods together in the center and set a jack on the block thus formed. The next step is to get a piece of scrap metal of some sort, drill holes in either end of it, and then set hooks through these. (The hooks can be bent out of other spare metal.)

Now take a piece of chain and attach it to the hook on one end of the metal cross piece, place this on top of the jack and then run the free end of the chain down through one side of the wheel and up through the other and fasten it to the opposite hook attached to the metal piece on the jack. Now crank up the jack. The chain pulls the rim up from the bottom and the metal bars, pressing down on the four blocks, push the casing downward off the rim. In far less time than it has taken to describe the process the rim springs free and the casing can be pushed off by turning the tire over and repeating the process. For wheels without slots in the rim, drop the chain through the center of the hub and slip a bar through it to give purchase.

★From *AM*.

General Lear Reviews 2d Cavalry Division

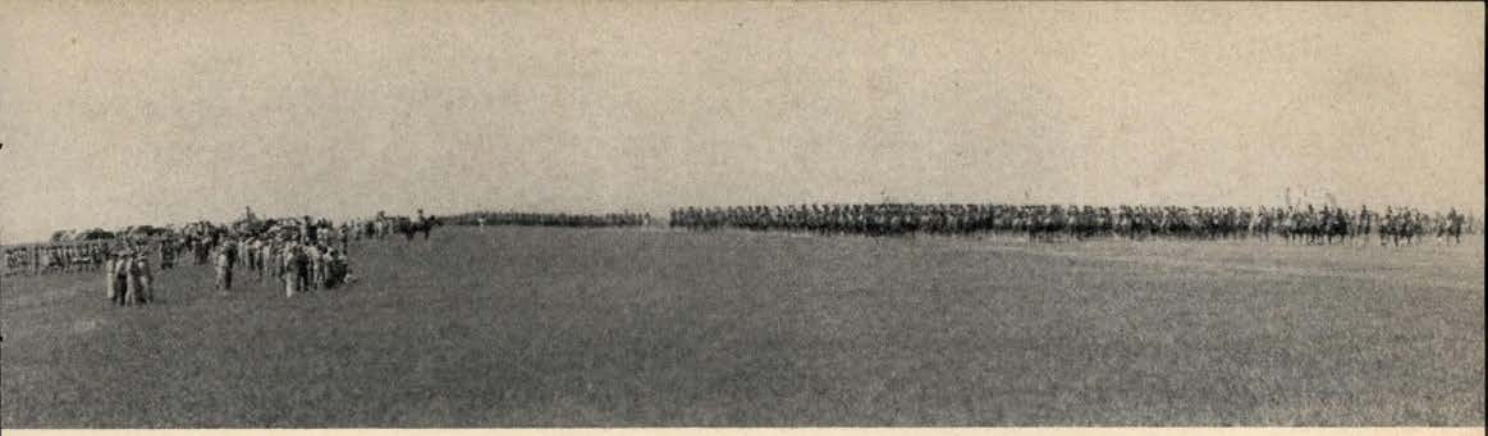
"I CAME to Fort Riley to see for myself whether or not the division was ready to take part in summer maneuvers," declared General Ben Lear last July 19th after reviewing the Second Cavalry Division. "What I have seen today pleases me highly. I find it is ready and I am entirely satisfied with its progress and training. The review this morning was splendid and I am proud to belong to the mounted service!"

The morning of the review found several hundred spectators gathered in the vicinity of Randolph Hill at the north end of the military reservation to watch the 9,000 men, 7,000 horses and 2,000 motorized vehicles assemble for the review. Promptly, at the designated hour, General Lear and his staff rode into the reviewing ground as planes of the First Observation Squadron passed over in salute. General Lear rode in front of the long ranks of Troopers lined up for inspection. He and his staff were then joined by Major General John Millikin, Division Commander, as they proceeded to take their positions in the reviewing stand.

The 14th Cavalry band played "The General's March" and the review was underway.

The first unit to pass the reviewing stand was the 1st Observation Squadron. Major C. T. Mower, Squadron Commander, was seen to salute as he roared past the

Left to right: Lieutenant Colonel William B. Bradford, Chief of Staff, Second Cavalry Division; Major General John Millikin, Commanding General, 2d Cavalry Division; Lieutenant General Ben Lear, Commanding General, Second Army; and Colonel Henry R. Richmond, Assistant Chief of Staff G-1, Second Army.



generals only a few feet above the ground. Six other planes followed slightly higher. Three echelons in formations passed above the reviewing stand three successive times, each time changing from left echelon to column to split V formations.

Then came the 3rd Cavalry Brigade led by Brigadier General Terry de la M. Allen. The 2nd Cavalry, commanded by Lieut.-Colonel John T. Cole was the first regiment to pass. The 14th Cavalry was next with Lieut.-Colonel John T. Pierce in command.

The 4th Brigade, led by Colonel Duncan G. Richart, followed the 3rd Brigade. First came the 9th Cavalry under the command of Lieut.-Colonel C. A. Wilkinson, and then the 10th commanded by Colonel Paul R. Davison.

Colonel Ralph Hospital, commanding the division artillery was next in procession. His command is comprised of the 3rd Field Artillery Battalion, commanded by Lieut.-Colonel Pierre Mallett, and the 16th under the Command of Lieut.-Colonel Peter Rodes.

Lieut.-Colonel Andrew E. Forsythe commanded the motorized equipment which was the last unit past the reviewing stand.

Immediately following the review, General Lear was asked by reporters whether training with "simulated" weapons would be detrimental.

"Troops do not need full war equipment for training," he said. "The German army trained for a number of years with wooden rifles and imitation tanks and other such weapons. Whether or not we have old weapons or insufficient weapons for modern war does not affect our training."

General Lear added, however, that he "understood industry had caught up with its schedules in arms production and we can expect an accelerated pace of arms manufacture and supply."

In addition to praising the men, General Lear also commended the officers.

"The personnel we have for training, both in men and young officers, is making wonderful response to all our demands. We have a feeling of tremendous responsibility for training them for combat. That is the state of preparedness we must reach, whether we do or do not make use of it for war. Enlisted men, Selectees and officers are responding most satisfactorily."

Needless to say, this high praise from the Second Army Commander greatly cheered the troops. They felt relieved that they had not "let their officers down." And the latter, of course, were proud of their men. Their joy was still further increased when their Division Commander, Major General John Millikin, stated that he, too, was extremely pleased with the review, and that he is mighty proud to be in command.

Now the young troopers are undergoing a real test in the southern maneuvers. They have been well-trained by means of many tactical and strategic marches that followed General Lear's review. Their officers are confident they will prove to be the hard-hitting, crack horse cavalry that General Lear wants, and that he will be able to say after maneuvers as he remarked following the review, "I am proud to belong to the mounted service."

Left to right: Lieutenant General Ben Lear in conference with Major General John Millikin during review of Second Cavalry Division.

General Hawkins' Notes

The Missions of Cavalry in Modern War

MANY persons are asking about the missions of cavalry in modern war. It is the great cross-country mobility, under almost all conditions, of our powerfully armed cavalry that makes it so valuable. This quality must be given the first consideration, by those generals who have cavalry as part of their commands, in determining the employment of this cavalry. In other words, the missions of our modern cavalry must be given so as to take advantage of this quality. The combat units of the cavalry can keep, almost always, off the roads and should be expected to do so except where the use of roads is absolutely essential.

Since a cavalry division can maneuver across country with each squadron or similar unit partially deployed in an habitual maneuver formation, like successive lines of platoon columns from which complete deployment can be taken in three or four seconds, the division can march or maneuver without great danger of incurring serious losses from sudden airplane or tank attacks. Proper security measures should prevent those attacks from coming as a surprise. Despite these measures, however, such surprises will occur occasionally. With adequate deployment they should not be serious.

Thus, a cavalry division, with covering detachments in front and combat patrols on its flanks, should be free to move rapidly by any route across country without anxiety lest it be caught in a situation from which it could not extricate itself. *With the proper initiative given to and demanded of squadron commanders,* and sufficient training in marches and tactical exercises, such a division can be exceedingly useful.

Everybody knows that in this way the German panzer divisions, breaking through a gap in the lines or moving around the flanks, have created disorder and dismay in the armies of their opponents. Cutting communications, surprising headquarters and reserves, destroying supply dumps, terrifying the inhabitants – these operations caused demoralization in the armies and prevented them from making firm stands against the following German infantry divisions. Not trained to cope with such open warfare situations through the initiative and resource of battalion commanders, the higher commanders and staffs became helpless. Of course, we know now that the Allied armies did not possess the weapons to deal with such situations. The French did not have an air force capable of neutralizing in the smallest measure the German air force. The British air force, although outnumbered, could have given great assistance had it been under the command of the army chiefs instead of being a separate and independent force acting on its own without proper coöperation with the armies. In fact such coöperation can never be expected unless the air force is subject to the orders of army commanders as a component part of the army. Perhaps of even more importance, the Allied armies did not have antitank guns of the proper kind and in sufficient numbers or adequate organization; they had only inadequate numbers of mechanized troops and did not know how to use what they had; and last but not least, they had no modern cavalry.

Under these circumstances, the lack of training for open warfare cannot be wholly blamed. In the future, however, we will be very much to blame if we do not have all of these necessary arms and qualities. It will not do to trust alone in any one of these features of a modern army.

The question before us in this discussion is how to use our modern cavalry in such situations. First of all, we must have the cavalry in sufficient numbers. A handful of cavalry such as seems now to be contemplated cannot be expected to contribute important results. In a situation in which our army is being attacked and in which enemy mechanized divisions are attempting to do what the Panzer divisions did in France, an adequate force of our modern cavalry could play an important rôle.

Remembering the facility with which our cavalry should be able to maneuver across country and its powerful armament, the necessary forces of cavalry, in such a situation, should be assigned the mission of intercepting and attacking a column of enemy mechanized troops that has broken through our lines or moved around our flanks. By using interior lines across country, our cavalry force will have much shorter distances to accomplish, in order to meet the enemy at a certain point on the road, than the enemy has to reach that point by that road. Thus, by keeping cavalry forces in rear of our battle lines in the spaces between roads it can be called upon to move by a short line to attack in flank any enemy mechanized column that is reported as moving on one of these roads. Cavalry, moving in the cross-country formations referred to above, is especially suitable for such missions. Of course, mechanized troops, if available, could be used for this purpose if roads are convenient and run in the right directions; but if not, and the country involved is difficult for machines to traverse, cavalry is the only arm having the kind of mobility required and possessing the flexible

character that enables it to extricate itself if it "bites off more than it can chew." Mobile antitank battalions moving on the road to meet the enemy mechanized columns should be sent also from the general reserve of such troops; but the cavalry aims to attack in flank, by surprise if possible, and especially to attack the motorized troops which act in close conjunction with the tanks. Our own mechanized troops may be occupied in attacking the enemy main forces in a properly conducted active defense, or already assigned to some other mission, or they may be inadequate in strength and should not commit themselves to an attack against superior enemy forces except in the counterattack. They may be used in addition to the cavalry. We should use everything we have available.

If this cavalry force, not supported by some tanks of our own, strikes the enemy in flank, and some of the enemy tanks turn upon it, we have our antitank guns. If these are insufficient, we can get away without much damage on account of our open formations and cross-country speed. In retreat, we could move across country in a direction that would be embarrassing for the enemy tanks to follow. For example, if the enemy mechanized column is moving south and our cavalry attacks it on its eastern flank, and some tanks turn out of the column to attack our cavalry, the cavalry, if unable to repulse the tanks with its antitank guns, could withdraw in a northeasterly direction. The enemy tanks, with a mission to the south, would not want to follow the cavalry. The latter could then swing around to the west to attack the enemy column again and probably hit his motorized infantry.

What opportunities for cavalry leadership and initiative!

If the cavalry succeeds in striking the flank of a motorized column it should put all its machine guns into action first of all, then its riflemen. Perhaps if the enemy motorized infantry is surprised, some cavalry squadrons might attack mounted.

A numerous cavalry might also make it uncomfortable for enemy unsupported mechanized troops in camp at night. This would be a special opportunity for the cavalry divisional artillery as well as its antitank guns.

All of this might be something like *guerrilla* warfare against enemy mechanized troops that have gone too far away from the supporting infantry divisions of the main army. Cavalry in modern war, even in such large units as divisions and cavalry corps, must learn to operate more and more through the initiative and energy of its squadron commanders. *This cannot be emphasized too much.* It is a totally different conception from the old tightly woven organization and the highly centralized command.

Another mission of our cavalry would be to guard the flanks of our infantry divisions. Despite the opinions of some of our civilian writers and speakers, the main force of an army consists of infantry divisions as evidenced by the great number of infantry divisions in all the armies that are fighting in Europe, Africa, and Asia today.

Another mission is to act as a covering force for our advancing army on the offensive. If our mechanized divisions are engaged in a wide turning or enveloping movement and are far from the rest of the army, as seems to be the principal use of mechanized divisions in Europe in the present war, the army needs cavalry in front of it. Motorized infantry alone cannot be relied upon for this duty. It is too vulnerable itself to surprise attacks. Motorized infantry must be covered by mechanized troops or by cavalry. If the country is such that light tanks and armored cars cannot be spread over it conveniently, cavalry must be used for the security mission. Of course, when the enemy has no cavalry there is not so much danger that motorized troops may be taken in flank by surprise attack. They may rely on scout cars and armored cars moving in front, on, or near roads. An energetic and resourceful enemy, however, even without cavalry, may contrive to induce a motorized troop column to run into a trap of concealed troops on the right and left of the road.

In the defense of river lines cavalry is essential. In the spaces between roads cavalry can be placed where motor vehicles cannot go so well. Motorized infantry is extremely valuable in such situations, as is obvious, but cavalry is also essential not only to patrol wide areas between roads but also to resist an enemy column that has forced a crossing and penetrated into areas where motors cannot carry troops. The combination of motorized troops and cavalry is ideal for the general reserves of an army holding a river line.

If our army is making a slow withdrawal, such as the Russians now appear to be attempting, a very large cavalry force in each field army would be invaluable. Not only could this cavalry move in rear areas, as previously described, to surprise and attack in flank the enemy mechanized and motorized divisions that have pushed through or around our main forces, but also it could fight delaying actions against the enemy infantry divisions.

Most of this discussion so far has dealt only with defensive situations. Let us now consider situations in which our army has acquired the initiative and is advancing offensively.

First, let us consider for a moment our air force. There can be no doubt that our air force must be divided into units some of which are permanently assigned to each of our field armies. A great GHQ air force must be kept for missions assigned by the Commander-in-Chief of our armies, but some air force must also be assigned to cavalry divisions and corps. There must be observation planes and light bombers.

Our mechanized divisions will need the close support of our army air forces. The success of the German panzer divisions in France and other theaters of war was due in no small measure to the German air force,

which was unopposed by Allied separately commanded air force. We must have this support, therefore, both in defensive and offensive operations. With this support it is probable that in the future the use of armored troops will reach amazing proportions. Nevertheless, however brilliant the future may be for armored forces as an arm of the army, it is certain that any enemies against which our armies may be called upon to fight will be far better prepared to deal with our mechanized forces than the Allied armies have so far been to deal with the German panzer divisions. Enemy air forces will oppose our armored forces or neutralize our supporting air force. As improvements are made in the quality of antitank guns and in the organization of antitank troops, the armored troops will have to be less audacious in separating themselves so far from the main force of the army. At least, there will have to be a link between the main body of an army and the far flung armored divisions. Cavalry in great numbers can be that link.

Thus, for offensive operations, we have a new mission for modern cavalry. As a link between our slower moving infantry divisions and the fast moving armored forces, cavalry can play the double rôle of protection for our main army bodies and of support for the advanced spear heads. Of course, it is realized that these advanced armored troops rely on their own support in the form of motorized infantry in armored carrier cars. At the same time, it must be realized that motorized infantry even in armored carrier cars is very vulnerable to air attack and to flank attacks made by enemy cross-country troops such as cavalry. Armored carrier cars could be knocked to pieces by the antitank guns and artillery of the cavalry.

As of old, one of the missions of our cavalry will be to attack in flank the enemy who is withdrawing in front of our main forces. Menaced in front by our main infantry divisions, threatened and demoralized by our armored forces converging on the flanks and rear, the retiring enemy forces will be thrown into disorder and flight by cavalry attacks on the flanks between our advanced armored divisions and our advancing infantry divisions. The cross-country ability of cavalry is of great importance in this mission.

Another old mission is still of great importance. Delaying action against enemy reserves, either alone or in coöperation with air force and armored forces, may win battles for our army. Again, in such operations, the cavalry should be employed for cross-country movements.

If the use of parachute troops becomes really important, cavalry is one of the answers.

Thus, cavalry retains most of its old rôles, and those which have been taken by air force and armored force are only somewhat modified. The changes in the missions of cavalry and in the tactical manner of performing those missions are due to the following considerations. Cavalry has much more fire power than formerly, including machine guns and antitank guns. Cavalry can no longer charge in solid close-order ranks. Indeed, this was discarded by our cavalry nearly a half century ago. Except for sudden encounters of small units, the mounted attack must be supported by very heavy fire action which is the first to begin the engagement. For large units, the combination of mounted action with dismounted action will be more frequent in an attack than purely mounted action. Dismounted action, especially defensively, will be the usual rule. *Cavalry must keep off of roads.* Its cross-country mobility enables it to do this better than other arms. Cavalry must learn to march habitually in semi-deployed lines or columns of squadrons. Cavalry camps must be in a dispersed order.

Cavalry must be able to carry with it its ammunition and food for a week without replenishment from supply trains except when opportunity permits less drastic hardship or when ammunition has been unavoidably expended in a shorter period. Cavalry cannot operate in a waterless country for more than two or three days.

More initiative and freedom of action than ever before must be given to squadron commanders.

We can summarize the missions of cavalry in a list of missions if we keep in mind that there can be no rules for its employment except the one rule that it must be employed according to its powers and limitations and its distinguishing characteristic—*ability to operate across country*. It can be combined readily with other arms, but a cavalry unit as large as a division should have its own permanently assigned aviation.

Summary of Cavalry Missions

1. Reconnaissance and protection for other troops.
2. Defensive action against enemy armored forces attempting to encircle our armies and demoralize the communications and rear installations—something in the nature of *guerrilla* warfare.
3. Defensive operations along a river line.
4. Delaying actions, either against enemy reserves during offensive operations of our army, or against enemy encircling or pursuing troops during a withdrawal of our army.
5. To act as a link between our advancing armies on the offensive and the distant armored forces attempting to envelope the enemy or pushing through gaps to disrupt enemy communications and rear installations. This link may have the double mission of protection for our main army and support for our advanced spearheads.
6. During an attack by our army in which our armored forces envelope and attack the flank and rear, our cavalry may coöperate by attacking the hostile flanks between our armored forces and our advancing main bodies of infantry.
7. Cross-country operations against enemy parachute troops.
8. Any *important* mission that cavalry can perform better than other troops.

Thus, cavalry has not been replaced or should not

be replaced, by armored forces or air forces. Whatever be the importance of armored troops and air forces in the minds of professional soldiers or civilians, and however brilliant their future may be, they do not replace cavalry. We need everything.

In view of the great success of the German panzer divisions in the war and the limelight that has been thrown upon them, one can understand why the layman wants to discard cavalry, about which he knows very little. It is less understandable why he wants to discard infantry, because he can read in the newspapers of the great number of infantry divisions that have been and are being used. It is truly amazing that any professional soldier should be satisfied with little or no cavalry, when the potentialities of our modern cavalry are so great. *At the very least, a cavalry corps should be a component of every field army.*

Modern war is a hurly-burly. Every man is a warrior —skilful in the use of weapons in the war of ground— outwitting and outfighting his enemy—fierce and aggressive in both defense and in offense—hardened by practiced marching—able to resist fatigue, to do without food and water for long periods—indifferent to shells and bombs—animated by desire to clash with the enemy —cheerful under hardship—able to preserve his own health and strength for the one purpose of beating the enemy.

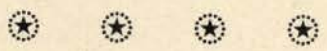
It is a mad scramble between small units. Every commander of a unit from the squad up must be able to fight his own battles and at the same time to coöperate with other units.

These qualities are necessary in every arm of the service; but well conducted training in the cavalry lends itself particularly well to the establishment of such qualities. A corps of cavalry in a field army would give to the commanding general who knows how to use it a feeling of security, of power, and of complete readiness for any eventuality.

With a highly developed initiative, especially in squadron commanders, the cavalry can meet anything, any enemy, either by attacking and defeating him or harassing him, or falling back before superior force without losing contact and without failing to protect the army from surprise or from the unimpeded and unopposed advance of enemy infantry, tanks, or any combination of ground forces. Even the enemy air forces will find poor targets in the cavalry, and the enemy's army will never know when to expect sudden attacks on flanks and rear or how to avoid demoralizing surprises.

One thing more. Many persons compare the movement of a cavalry command at 5 or 6 miles per hour with the speed of moving mechanized or motorized troops in a strategic movement. But a cavalry command, like an infantry command or artillery command, can be moved by railway or by trucks to a strategic point in the same or less time than armored troops can be moved by truck or motor vehicle. Once the cavalry has arrived at the strategic point, its cross-country mobility, or what might be called its *maneuverability,* becomes important in comparison with any other troops.

If troops were needed in the vicinity of Philadelphia it would be silly to say that armored forces could move there from Washington at the rate of from 20 to 40 miles per hour whereas cavalry could move toward Philadelphia at the rate of only 5½ or 6 miles per hour, because, as before stated, the cavalry could be moved by railway trains or by trucks to the scene of action where it could then perform its rôle.



"War means fighting. The business of the soldier is to fight. Armies are not called out to dig trenches, to throw up breastworks, to live in camps, but to find the enemy and strike him; to invade his country, and do him all possible damage in the shortest possible time. This will involve great destruction of life and property while it lasts; but such a war will of necessity be of brief continuance, and so would be an economy of life and property in the end. To move swiftly, strike vigorously, and secure all the fruits of victory is the secret of successful war."

—GENERAL THOMAS J. (STONEWALL) JACKSON.

Old Wine in New Bottles

By Colonel Dorsey R. Rodney, Cavalry*

DURING the past year *The Cavalry School* has been through a rather strenuous period of physical expansion and a revamping and revitalizing of courses of instruction. So it is well to pause for a moment and give a brief description of the aims and accomplishments involved.

From a physical standpoint, the most noteworthy changes have been the completion of the Academic Building, construction of the Motors Building and the Communication Building, remodeling of barracks for student officers, and construction of temporary barracks for student enlisted men.

The first expansion of the School from about 25 Reserve and National Guard officers to a total of 160 officers and 510 enlisted students of all categories took place in the summer and the students were placed in a tent camp. They were still in camp at the approach of winter and drawing these officers directly from civil life and putting them in tents, with snow on the ground, seemed a little grim to some of them, but it was a noticeable fact that during that time there was not a single case of sickness. Somewhat later the student officers were moved into the new temporary barracks near Engineer Bridge, and still later all the officers were moved to the remodeled barracks formerly used as an Academic Building, which makes a very fine arrangement as they are very comfortably housed and are within easy walking distance of all centers of instruction. A total of 13 temporary barracks with necessary mess halls, storerooms, and recreation buildings near the Engineer Bridge now house 100 student noncommissioned officers, 75 student horseshoers, 35 student saddlers, 100 student motor mechanics, and 100 communication students, in addition to 100 officer candidates. These barracks are within easy walking distance of all p'aces of instruction. During the flood in June it was necessary as a precautionary measure to evacuate these buildings for about two days, but the high water never actually reached the buildings.

Photographs of the principal new buildings appear below. It was fortunate that the new Academic Building was completed just in time for the enlargement of the School and the other new buildings rendered the expansion possible.

But it is in the changes in the courses that the most significant modifications are seen. The students coming to The Cavalry School at the present time do not possess the background or experience of those heretofore attending, so that necessarily the caliber of instruction has had to be changed somewhat. While it has always been the aim to make instruction at The Cavalry School as practical as possible, in common with the presumed aim at all service schools, that feature is particularly stressed at the present time on account of the changed background of the personnel of present classes. No demonstration troops whatever are now available to the School, so that any exercise involving the practical command or use of organized units must be put on by the students themselves, using the student groups. This has definite advantages as well as certain disadvantages.

It might be well to show in somewhat more detail the organization and operation of the School. The Cavalry School is now separate and distinct from Post Headquarters and has, besides the Staff and Faculty, a Cavalry School Detachment (White) consisting of 326 enlisted men and a Cavalry School Detachment (Colored) of 470 enlisted men. These two detachments are organized into sections or compartments, each with its own particular function in connection with carrying on instruction. The Cavalry School Detachment (White), besides furnishing the necessary enlisted assistant instructors for the different departments of the School, supplies all the cooks, mess attendants and administrative personnel of the entire school. The Cavalry School Detachment (Colored) supplies the grooms and orderlies and will furnish the transportation section.

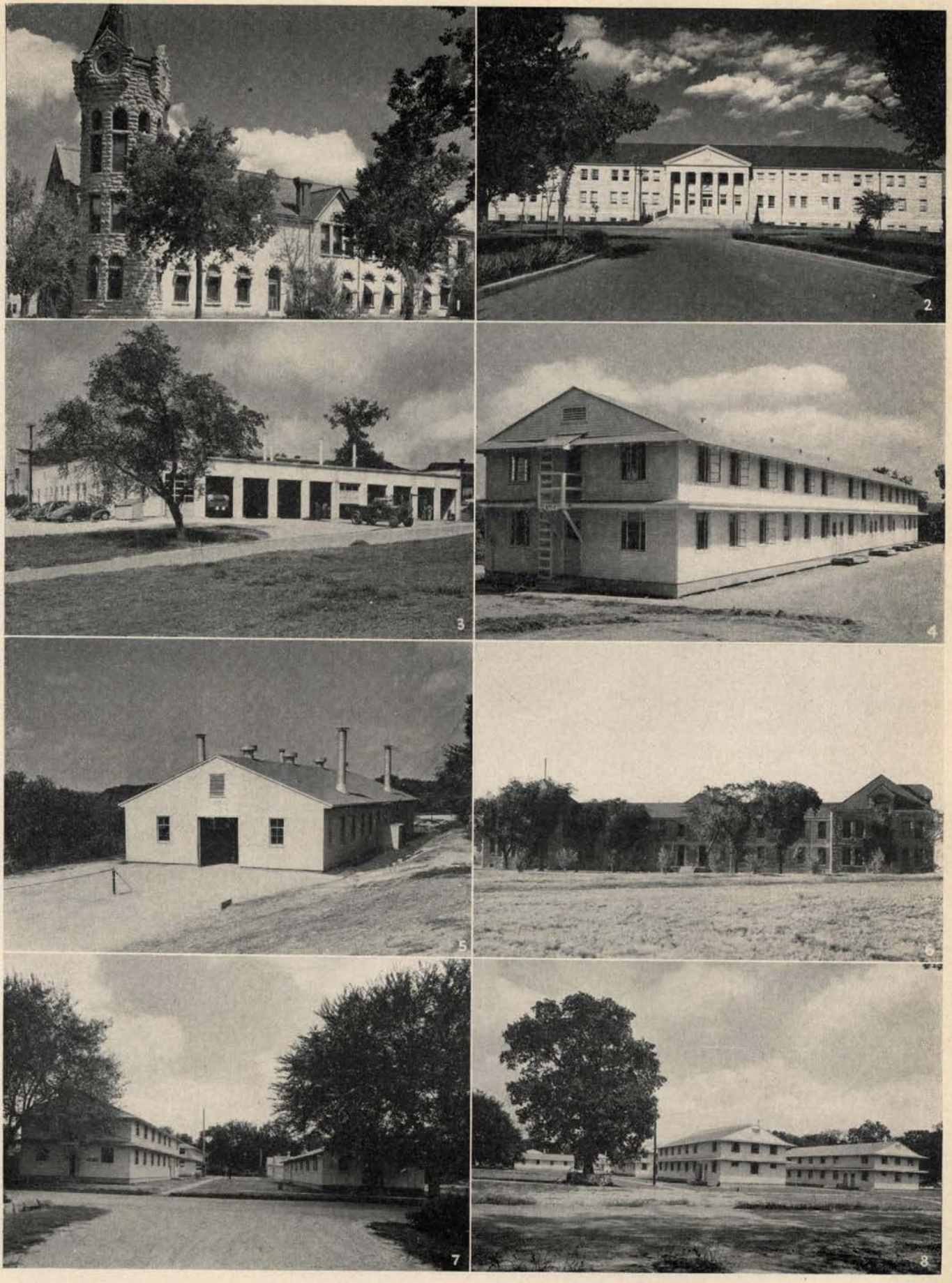
The Secretary (Lieutenant Colonel John C. Macdonald), who is the Executive of the School, has under him a staff of executive assistants of nine officers and approximately 100 enlisted men. These control and operate the School Headquarters as well as the following activities, viz:

School for Saddlers
Book Department
Library
Print Shop
Reproduction Plant
Machine Shop
Carpenter Shop
Transportation Section

This last section (Transportation) is now being organized and it is expected that soon the School will have its own vehicles, drivers and maintenance personnel, and thus be independent of other organizations on the post as regards transportation. It will be a happy solution all around!

Before long a section of Public Relations and Morale will probably be necessary and thought is being given to the organization of such a section.

*Assistant Commandant, The Cavalry School, Fort Riley, Kansas.



1—Post headquarters. 2—Academic building. 3—Motors class building. 4—Communications class building. Two barracks end-to-end with fire wall between. 5—New horseshoeing school. 6—Student officers' barracks. 7—Officer candidate camp. 8—Enlisted student camp.

The instructional part of the School is divided into six departments, viz:

Department of Tactics
Department of Weapons
Department of Communications
Department of General Instruction and Publications
Department of Horsemanship
Department of Motors

In the Department of Tactics there are 11 Regular Army and 4 Reserve officer instructors. Great effort has been made to have much of the instruction in this department given on the ground in the form of practical exercises, and it is very rare that an exercise is suspended or changed on account of inclement weather. The basis of the instruction in each subject is laid by a conference or series of conferences explaining the principles involved. This is followed by conference problems or illustrative exercises in which the student applies on the map in the classroom the principles explained, then by practical drills in the field with actual equipment against an actual or represented force, and culminates in field or terrain exercises in which students selected from the class demonstrate their ability to actually apply the principles taught and practiced. Such problems are set up using the student classes, organized as horse or horse-mechanized troops or units, as the participating troops, and wherever possible include the use of actual equipment as it will be found in units, actual or represented enemy forces, and frequently ball ammunition.

The Department of Weapons has two Regular Army and five Reserve officer instructors and 25 enlisted assistant instructors. It gives thorough basic instruction in all cavalry weapons, with perhaps particular emphasis on the M-1 rifle, light and heavy machine gun, caliber .30 and caliber .50 machine guns. Most of the actual firing with weapons consists of combat firing, with particular stress on proper methods of command and control, and night firing is covered in some detail.

The Department of Communications has at present two Regular and six Reserve officer instructors, assisted by 23 enlisted assistant instructors. Besides a thorough course in code practice and cryptography, a large part of this course is taken up in command post exercises on the ground, and the officer students, particularly, are given abundant practice in drawing up and staging such exercises. A limited number of the students are given training as Radio Mechanics.

The Department of General Instruction and Publications has at present three Regular Army and eight Reserve officer instructors. Here proper methods of instruction are taught and stressed, and much practical work is given in ordinary troop administration. In addition, an interesting feature has been the introduction of a course in discipline and customs of the service, and an attempt is being made to formulate a course in the development of leadership. This department also prepares all the Cavalry Extension Courses and is just now expanding to take charge of the preparation of a large number of training films. When the scenarios of these films are completed, it is expected that the actual production will be made at Regular Army posts and at Hollywood.

The Department of Horsemanship has at present six Regular Army and eight Reserve officer instructors. Effort is being made to set up a small body of carefully selected noncommissioned officer assistant instructors. This department, while teaching Animal Management, Horseshoeing, Care of Leather Equipment, and Horsemastership in general and Horsemanship in particular, is now specializing more than formerly in basic principles of riding, road marching, gaiting and swimming. Part of this apparent change is caused by the fact that many of the students now coming to The Cavalry School have had very little experience with cavalry or with horses. A recent addition to the instruction in this department is the introduction of a short course in acetylene welding and the borium treatment of horseshoes.

The Department of Motors has two Regular Army and seven Reserve officer instructors and 34 enlisted assistant instructors. The courses include an Advanced Motors Course for officers and a Motor Mechanics Course for enlisted men. Each course is of three months' duration, with the officers entering in groups of twenty every three months and the enlisted men entering in monthly increments of thirty-four. The objective of the Advanced Motors Course is to train and qualify students for duty as motor officers to include second echelon maintenance of wheeled type vehicles. The objective of the Motor Mechanics Course is to train and qualify students for duty as motor mechanics of wheeled type vehicles to include second echelon maintenance, and to give the student a good background for third echelon maintenance. Every effort is made, in both courses, to present a thoroughly useful and practical course of instruction. The Department of Motors is the newest department of The Cavalry School, but it is well equipped and well organized to perform its task.

There are naturally many problems which arise due to the enlargement of the School and which are novel in their way. As an example, it probably never occurred to anyone that there would ever be any question as to the supply of horses to be used by students in the Horseshoeing School, but such is the case. Most officers will recall that their problem has usually consisted in finding competent horseshoers, but here apparently the problem is reversed and consists of finding sufficient horses to shoe. It takes over 3,000 horses a month to supply the school with "patients" and when the 2d Cavalry Division is absent from the post the only sources of supply are the horses of the School and those at the Cavalry Replacement Training Center.

Another interesting experience is in the matter of

swimming horses. Of course, practice and training are very desirable, but recently all classes were marched about 24 miles to the Blue River and from a very difficult and boggy "take-off" swam every horse without any special training or practice. Many of the horses were remounts who probably had never seen a river and the men had in many cases never ridden the horses previously. Very little difficulty was experienced. The men swam in complete uniform, less equipment.

The School has no means or opportunity of training remounts over a period of time as was formerly done, and on account of the expansion of the classes and the shortage of horses, the remounts are put into full duty very soon after their arrival at the post. Contrary to the expectations of many people, they are turning out exceptionally well and no difficulty is experienced. Special precautions naturally have to be taken in regard to selecting riders for these green horses and other minor details, but on the whole the situation is easily adjusted.

During the last two weeks of each course the students are separated, and those destined for mechanized units specialize in that class of instruction.

It may be safely stated that The Cavalry School without a great deal of furor has expanded its facilities and revised its scope to fulfill its enlarged and varied mission, and it is continuing to turn out, as it always has done, graduates competent in their respective spheres and filled with enthusiasm and pride of service.

Cavalry Replacement Training Center

*By Major Peter A. Fredericksen, Cavalry**

INTENT on its purpose of providing basically trained individual soldiers as replacements for horse and mechanized cavalry units capable of operating efficiently in garrison or field with combat regiments, the Cavalry Replacement Training Center has just completed its eighth week of training of the second increment. Improvements in organization and methods based on experience gained during the first increment have facilitated the training program. Consequently greater progress has been made and a higher degree of proficiency obtained than was possible during a similar period of the previous increment.

* * *

Experience has shown that the examination of trainees for induction is not uniform among reception centers. Men are being received who are capable of limited service only. These are being formed into a special training unit with a review to their possible reclamation.

* * *

Two new chapels are rapidly nearing completion. These will greatly improve the facilities for divine worship.

* * *

An important function of the Classification Section is the selection of specialists for testing in the main occupation listed on their classification card. These men are given a week's duty in jobs requiring their specialty. Their performance is observed and rated. A list is thereby compiled of specialists whose capabilities are known. Eighty per cent of those tested have been given a rating of "satisfactory" or better.

* * *

The scope of training in the Motors Department has expanded with the receipt of additional vehicles, spare parts and tools. Tank tools have also been received making it possible to give instruction in tank maintenance. Forty-four additional M-1 scout cars have been received.

* * *

The pressure for vehicles for messenger service was relieved by the addition of twenty-five new bicycles. These were allotted to the various departments and headquarters. They are also used for the testing of prospective motorcycle riders in balance and coördination.

Field training for scout car and truck drivers at the present time consists of road marches and problems in reconnaissance. Tank assignments include cross country driving, i.e., rough ground, steep banks and ditches.

Three practice marches have been held for the inculcation of march discipline. Two of these were to Wichita, Kansas. Five hundred men were convoyed to witness the championship C.R.T.C. baseball team in action. One thousand men were convoyed to Topeka, Kansas on Labor Day as guests of the State Convention of the American Legion. The convoy consisted of forty trucks, forty scout cars, eighteen motorcycles and two tanks.

* * *

Proficiency in riding among the horse troops has progressed to the point where it is possible to hold horse shows for trainees bi-weekly. Great interest and keen competition is evident in these shows. Three special teams are being organized—musical ride, monkey drill and jumping. It is hoped to develop a musical ride team of fifty men, and teams of twenty-four each for jumping and monkey drill.

Two new stables are under construction. The rocking of corrals, aisles and a twenty-four foot boulevard has been completed.

* * *

The consolidated report of rifle practice M-1, Course

*Public Relations Officer, CRTC, Fort Riley, Kansas.

B (Modified), for the second increment shows a gain of 11.3% over the number qualified in the first increment. Firing was done at two and three hundred yard ranges. The figures are as follows:

Number fired	5,200
Number qualified	3,772
Per cent qualified	72.5%
Number of Marksmen	3,245
Number of Sharpshooters	429
Number of Experts	98

When compared to regular organizations the per cent qualified may not seem high, however, it must be remembered that here the ammunition allowance is limited, and that every trainee must fire for record after only two weeks of preliminary instruction. There is no dropping back for further training and subsequent opportunity for qualification.

The weapons department has reached the half-way mark in its pistol instruction. The consolidated report of the results obtained reveals the following:

Number fired	2,857
Number qualified	1,670
Per cent qualified	58.4%
Number of Marksmen	1,421
Number of Sharpshooters	183
Number of Experts	66

* * *

Basic training taught during the past month in addition to horsemanship, weapons and motors has been map reading and combat subjects. Proficiency has been attained in the use of the field compass, aerial photographs, mosaics, slopes, gradients and conversion table, scouting and patrolling, advance guards, approach marches, deployment and fire orders.

Studies are being made for the changes in the training schedules incident to the change in time of reception of trainees from a quarterly to a bi-weekly basis.

* * *

Realizing that a valuable aid to good morale in the U. S. Army is a well rounded, organized and efficiently executed recreational program the C.R.T.C. has organized a program that meets the recreational needs of all the men at the Training Center.

As is to be expected the greatest attraction is the great American game of baseball. In this department the men point with pride at the enviable record of the C.R.T.C. ball club, the Centaurs. Comprised solely of selective service men they have compiled a record of 23 wins and 8 losses to date, meeting the best semi-pro ball teams in the state of Kansas. Resembling a Kansas cyclone the Centaurs roared through the Kansas state Semi-pro Baseball Tournament. As a result of their brilliant playing they were presented with the coveted invitation to participate in the National Semi-pro Tournament.

Boxing has its share of the recreational program. Individual platoons conduct boxing matches, winners of these contests represent troops in inter-troop matches, winners of these matches compete in inter-squadron bouts. Final winners comprise the boxing card Friday evening in the outdoor arena.

Supplementing these major sports is a program of minor sports including volley ball, soft ball, ping pong, horseshoes, etc. The system of inter-platoon to inter-squadron competition is used effectively.

As well received and as enjoyable as boxing and baseball, are the talent shows. Each squadron has its talent show director under the supervision of the squadron recreation officer. Individual squadrons, are responsible for one show per week.

Dramatics too, play a major rôle in the program. True, as yet no Barrymore or Robert Taylor has been discovered but the recent production "Top-Kick" displayed excellent dramatic and directing ability. In addition to supplying the needed acting and directing, the making of necessary sets and lighting were intrusted to the hands of capable trainees. Recently an officer visiting C.R.T.C. voiced this opinion: "In all my visits to various camps this is the first camp that I have come upon which has its own dramatic group."

For the intellectuals there is a well stocked library. A novel feature to note is that the number of requests for non-fictional reading material surpasses the fictional.

Also of interest are the classical music programs during which time selectees present piano, vocal and violin recitals.

* * *

Distinguished visitors during the month have included Adjutant General M. R. McLean of the State of Kansas, J. K. Brelsford and James E. Smith, Chairman of the Kansas American Legion Convention Committee, in connection with the visit of this command to Topeka on Labor Day, Lieut. Col. G. D. Wahl, G-3, Seventh Corps Area, Lieut. Col. H. H. Gledden, assistant G-3, Lieut. Col. T. D. Joiner of the Classification Section War Department, and Col. F. W. Miller, G-4, Seventh Corps Area.

* * *

The following officers have joined this command since August 1st: Lieut. Col. Frank H. Barnhart, Lieut. Col. Brock Putnam, Capt. Robert E. O'Brien, 1st Lt. John S. Cruikshank, 1st Lt. Andrew B. White, 2nd Lt. Duane G. Cason, and 2nd Lt. Gerald L. Talbot.

* * *

The following reassignments have been made: Lieut. Col. Wayland B. Augur, to GHQ; Lieut. Col. Harold P. Stewart to Ft. G. G. Meade, Md.; Major Elbridge H. Springford to 2nd Cavalry Division; Capt. Phillip W. Tiemann to Armored Force, Ft. Knox, Ky.; and 2nd Lt. William G. Gordon to 2nd Cavalry Division.

LOCATING NORTH

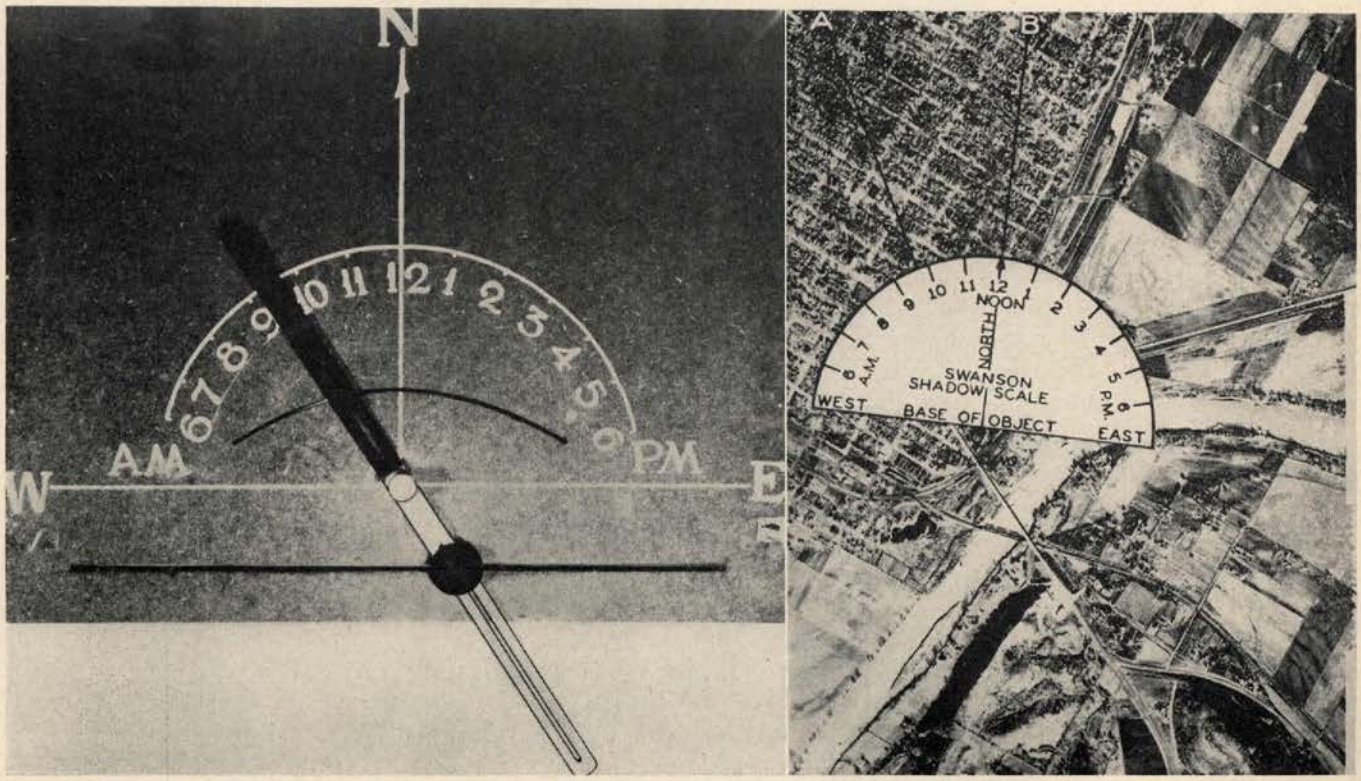
On An Aerial Photograph

*By Lieutenant George D. Swanson, Cavalry**

NORTH may be located on an aerial photograph by the use of a shadow scale. To explain to the classes at The Cavalry School the method of finding North from an aerial photograph, a large scale model (2′ x 2½′) was constructed. This model (see photo) consists of a movable sun, a *water tower* and a shadow that shortens and lengthens. The sun may be moved to show the position of the shadow in the morning, noon and afternoon. In the morning the shadow is west of North; at noon the shadow points true North; in the afternoon the shadow is east of North. The shadow is approximately 13° away from North for every hour away from 12:00 noon.

From the large scale model a protractor size shadow scale was devised. Take the aerial photograph of Manhattan, Kansas, and draw a line in the direction of the shadows. Lay the shadow scale on the aerial photograph so that the bottom center of the scale is resting over the object that cast the shadow. Rotate the scale until the time of day the aerial photograph was taken corresponds to the time on the scale. Then true North is in the direction of the North line on the scale.

*Faculty member, The Cavalry School.



Left—Model shadow scale. *Right*—Line A is direction of shadow; line B is true North.

RIVER CROSSINGS*

By Lieutenant Robert I. Dice, C. E.

TO march relatively inexperienced horsemen fifty miles, in less than a day and a half in temperatures ranging from 95° to 100° Fahrenheit is interesting; to swim an unfordable stream during this march with these same students, neither men nor animals having had any previous training in swimming operations is incredible—but accomplished fact.

The subject of River Crossings is first presented to students at The Cavalry School in a conference devoted mainly to river crossing tactics and the use of engineer equipment as illustrated by training films. The river crossing instruction is climaxed by a combined demonstration and practical exercise, which for the Fifth Basic Horse and Mechanized, the First Officer Candidate, and the Fourth Noncommissioned Officers' classes included forty-four miles of marching and a complete river-crossing exercise, during which approximately two hundred students swam the Blue River north of Manhattan, Kansas.

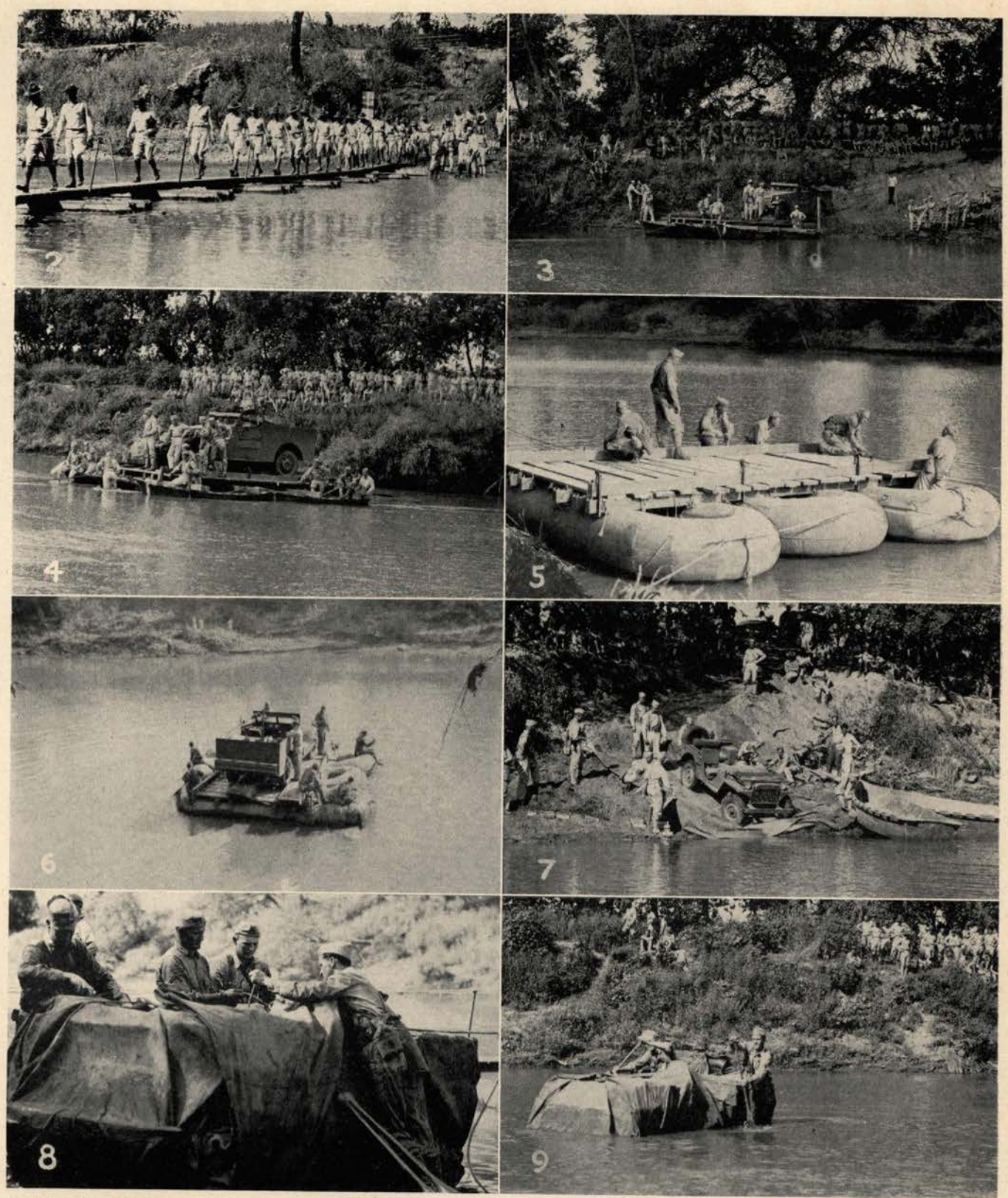
The exercise, under the direction of Lieutenant Colonel Edward M. Fickett, the Chief of the Department of Tactics, began at two o'clock Sunday, August 10, 1941, when the Basic class and the Noncommissioned Officers' class, comprising two troops of a provisional squadron, moved out, mounted, for Casement Ranch on the Blue River above Manhattan, Kansas. The Officer Candidate class executed the movement in trucks due to lack of suitable animals. It is interesting to note that because of the crowded schedule at the School, the Noncommissioned Officers' class completed a covering detachment problem on the march to the river crossing site. At the bivouac area on the west bank of the Blue River, the Officer Candidate class prepared the camp site while security detachments were posted from the Noncommissioned Officers' class to protect the site selected for the river crossing the next morning.

Figure 1: Assault boats crossing the river under cover of smoke.

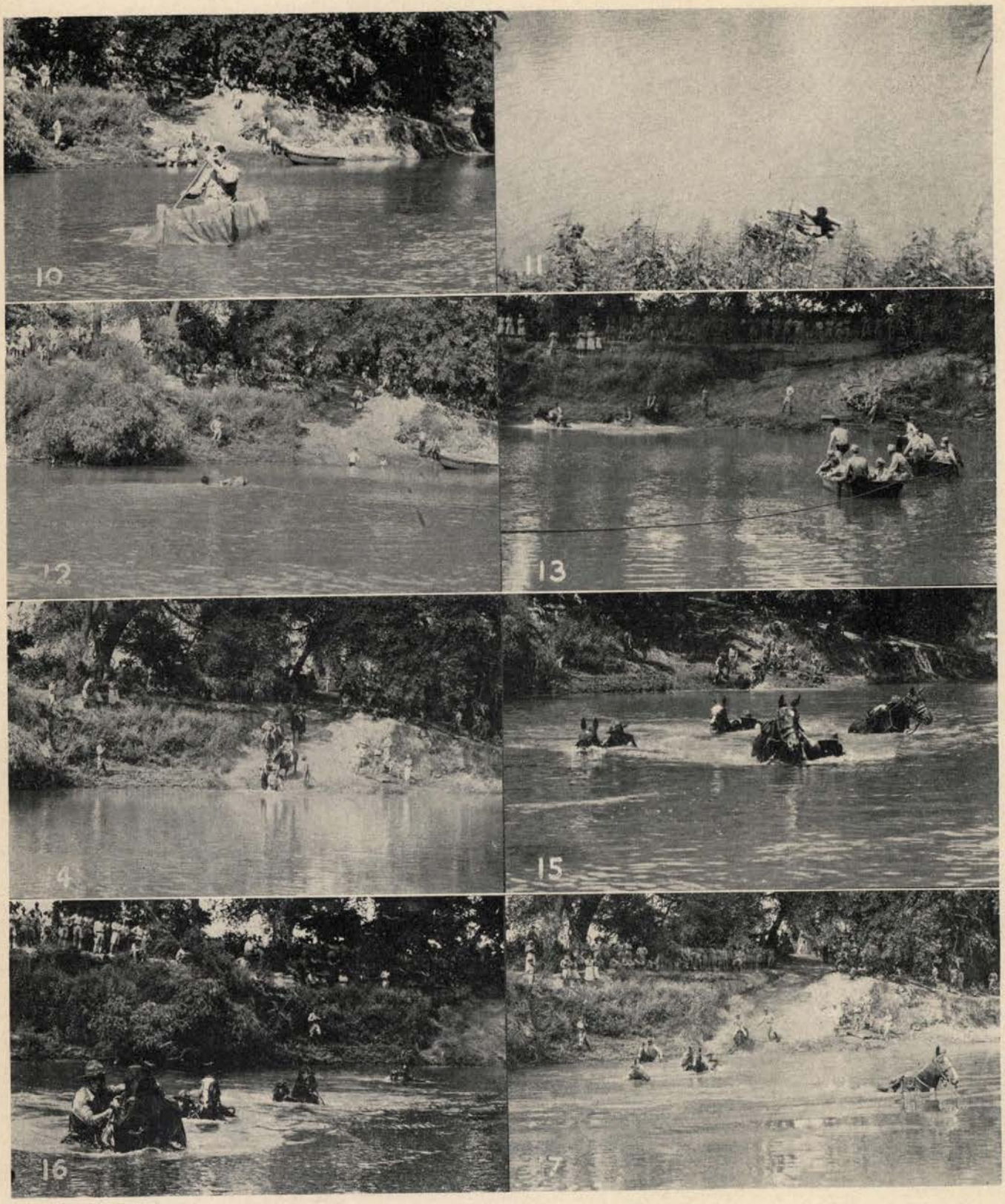
Shortly after dawn the three classes moved to the river. Assault boat parties selected from the Officer Candidate class were met under cover on the near bank by the Engineer assault boat crews, and guided along concealed paths with their boats to the river. The assault boats pushed on across the river under cover of smoke laid on the far bank (Figure 1).

Normally, after the first wave of troopers has succeeded in making a crossing in assault boats, and has cleared the far bank of hostile small arms fire, the remainder of the command will complete the crossing as rapidly as possible by swimming their animals. Simultaneously with the swimming operation, accompanying engineers will construct footbridges, ferries, and possibly ponton bridges to assist in crossing the heavier equipment. However, for the purpose of instruction, the engineer operations for this particular exercise preceded the swimming of animals. The footbridge (Figure 2) was constructed below the site selected for swimming, and later served as the downstream safety barrier. Scout cars were ferried across the river, first by use of a ferry constructed of six standard assault boats (Figures 3 and 4), and then on a ferry constructed with three experimental rubber boats. This type of equipment (Figures 5 and 6) has been used very successfully by the Germans, not only in the construction of ferries, but also in the construction of complete floating bridges. The ¼-ton truck, or Baby Jeep, was wrapped in a tarpaulin on the near bank and pushed into the stream by the squad of six men normally assigned to two of these vehicles (Figures 7 and 9). Two men of the squad paddled the vehicle across the stream with no difficulty (Figure 9). However, sending a swimmer across the stream with a towline would probably be more satisfactory in swift currents or high winds. This method of floating the Bantam was developed by Major C. H. Valentine of the Cavalry Board early last spring, and requires no pumping of water from the tarpaulin. The tarpaulin is reënforced under the wheel treads with leather to prevent tearing of the paulin while sliding the vehicle into the water or during beaching of the truck. The boat improvised from a Gold Medal cot, as suggested in a recent article in The Cavalry Journal, was also highly successful, and probably would be completely stable if more fully loaded (Figure 10). The float constructed from four pack saddles by Captain J. E. Glattly, 14th Cavalry, is believed to have some advantages over the Chamberlin float. Each saddle is completely wrapped in shelter halves, except for the open top, and

*As taught at The Cavalry School.



2—The footbridge was used to carry life preservers back to the near bank to permit re-use. 3—Assault boat ferry. The stern of the ferry must be supported by snubbing posts during loading to prevent swamping of boats. 4—Assault boat ferry: Note the reduced freeboard. The scout car is nearly the maximum load for this type of ferry. 5—Rubber boat ferry. The boats are compartmented, but bulkheads were found to be weak. 6—Rubber boat ferry. No special precautions are necessary for loading operations with this ferry. 7—Wrapping the jeep. 8—Lashing the tarpaulin. 9—High and dry! The floating jeep is remarkably stable.



10—Boat improvised from a gold medal cot. 11—The four pack saddle float. 12—Two man equipment float. 13—Safety crews upstream. 14—Entering the stream. A dismounted instructor assists the students. 15—Riders swimming animals from upstream side of mount. 16—Riders downstream from swimming animals. 17—An unbroken column has little difficulty.

the four saddles rafted together, two abreast. This method of construction results in a float of four separate compartments, having no joints between shelter halves below water. The float is more stable and retains its buoyancy longer than other types tested (Figure 11). A two-man saddle and equipment float, constructed with the saddles in tandem, was quite satisfactory (Figure 12). It is emphasized that all equipment used in the engineer operations and the improvised methods of floating equipment with the exception of the flooring used in the construction of ferries, which, however, could readily be secured locally for wartime use, is integral with either the Engineer Squadron or the horse elements of the Cavalry Division. Tarpaulins used as vehicle covers should not be neglected as a source of waterproof float covers. Troop "A," 9th Engineer Squadron, commanded by Captain C. M. McAfee, supplied the engineer troops participating in this demonstration.

The most striking phase of the exercise was the successful swimming of the Blue River by approximately two hundred students who had had no instruction in the swimming of animals before reaching the river's edge. Furthermore, the mounts had never been trained in swimming. Due to the inexperience of men and animals, elaborate safety precautions were observed. In addition to the footbridge serving as a downstream barrier, two assault boats, manned by engineer crews and containing two lifeguards each, were secured immediately above the crossing by a cable (Figure 13). Every rider who entered the water wore a kapok life preserver. Two riders, who were momentarily incapacitated, one by being kicked in the abdomen and the other by being kicked in the head while in the water, probably owe their lives to the use of these jackets, although the lifeguards were alert and prompt in reaching the injured men.

The selection of a proper site for the swim is undoubtedly one of the most important factors in a successful river crossing with inexperienced animals. A river bottom which drops rapidly at the near bank will commit the animals to the crossing with little opportunity for refusal. A gently sloping bottom at the far bank will permit the animals to leave the water calmly and quietly, which is very desirable when the rider dismounts during the crossing. Of course, a short swim for untrained animals is mandatory.

After curb bits were removed from the bridles, reins separated, and saddles stripped of field equipment, the students of the Basic class began swimming the stream by sets of four. Each set of four was instructed and coached over the public address system by Colonel Fickett during the swim, riders entering the water singly and in pairs (Figure 14). Stirrups were crossed over the pommel. Riders were instructed to move the animals into the stream as quietly as possible while allowing no refusals. Calmer or bolder animals were pushed forward past reluctant mounts. Approximately fifty per cent of the horses entered the water very willingly. Firmness of control by riders and use of the bolder animals to lead the way in each set of four was so successful that no animal failed to cross to the far bank. Each rider was instructed to leave the saddle as the horse's forehand rose in the first swimming stroke. Some riders were instructed to leave the saddle to the upstream side, others to the downstream side (Figures 15 and 16). The sole advantage of the rider leaving the saddle to the upstream side of his animal is that the rider can more readily keep his swimming mount headed directly across the stream. When the rider accompanies the animal on the downstream side the man is not only held free from the swimming animal by the current, but also should the horse get in difficulty, the rider may leave the animal instantly. As has happened in every river crossing held by The Cavalry School, the only animals which experienced difficulty in swimming, experienced it through misuse of the reins by the student, and the mounts extricated themselves only after the rider had dropped the reins or abandoned the animal completely. Since control of the animal in the water is important only until the horse takes his first swimming stroke, during which period the rider should remain in the saddle, and since accompanying the mount on the downstream side enables the animal to swim more nearly free and unhampered by his rider, the advantages of this method seem to outweigh the slightly better control obtained by accompanying the horse on his upstream side. All classes having benefitted from the detailed instruction made possible by separating sets of four of the Officers' class by short intervals, the Noncommissioned Officers' class swam the river with practically no distance between sets of four. If the column entering the water remains unbroken, very few animals evidence any unwillingness to make the crossing (Figure 17).

The purpose of the exercise:

"To march or move the combined classes to a bivouac area in the vicinity of a stream or suitable body of water, where the normal engineer equipment of an engineer troop of the cavalry division, horse, available for stream crossings can be displayed and employed; to practice crossing streams by various methods including swimming; to observe a demonstration of the employment of engineer equipment available for crossing streams; to give practice to one class in providing security for the march; to gain practice in march conduct, discipline and control, bivouacs and shelters, and hygiene and sanitation," was amply accomplished.

CARDED RAIL TRAFFIC*

O.Q.M.G. Commercial Traffic Branch Controls and Co-ordinates War Department Materiel Moving by Commercial Railways

THE Quartermaster General is the traffic manager for the Army. His assistants regulate, coördinate and control movement of carload lots of War Department matériel by commercial transportation. They officially change and modernize methods of loading matériel with the innovations in mechanized and motorized armored forces with which the public is becoming familiar. As defense production rolls equipment from the assembly lines of private industrial organizations, commercial transportation facilities are redesigned to receive and forward it for distribution.

With mechanization came new rules governing the loading of such matériel and in coördination with the Association of American Railroads and the Interstate Commerce Commission, The Quartermaster General delegates the preparation of instructions relative to the movement of War Department matériel by commercial means to his Commercial Traffic Branch. The swift adaptation of the rules to the rolling program gives credit to the vision of experts of military and railway profession who mapped uniformity and safety into a practical system of emergency loading of equipment. The regulations are summarized in a special supplement by the Association of American Railroads operations and maintenance department mechanical division and have been distributed as a handbook to commercial traffic men primarily assigned to Quartermaster loading of War Department mechanized and motorized units on open top cars of the railways. Movement of the matériel by rail conserves fuel and insures safety to a higher degree than is possible by highway caravan. Another important saving is the time element. Close adherence to the loading rules has maintained high efficiency in schedule and protection of human life and property in connection with the hazards of high speed, multiple track railroads, tunnels, and electrical conductors involved in troop movement. The time element proved the test recently in a demonstration in swift loading of thirty-seven flat cars of light tanks, two tanks to the car, mounted in less than 1½ hours—80 minutes from ramp to blocking, at Fort Knox, Kentucky. Again time was saved at Fort George G. Meade in the outfitting of a new kitchen-car with field ranges direct from the Aberdeen Proving Ground for servicing troops in maneuvers to Fort Sill, Oklahoma.

The following résumé of the *General Rules* shows consideration that the Transportation Division of The Office of The Quartermaster General gives to loading of matériel safely, speedily and securely.

General Rules

(Methods and materials specified represent minimum requirements. The loading of matériel for which no definite illustration has been provided should conform

*Courtesy, *The Quartermaster Review.*

as nearly as possible to the best example that can be derived from information given. Every effort must be made to secure properly and safely all loads before they are offered to the railroads for movement.)

Selection and Preparation of Cars

1. Cars must be inspected to see that they are suitable to safely carry loads to destination. Cars should have good sound floors, and all loose nails or other projections, not an integral part of the car, should be removed. Nails, bolts, etc., necessary in car construction, when loose, should be made tight rather than removed.

Brake Wheel Clearance

2. No part of the cargo must be closer than six inches to any part of car brake wheel. Consistent with the proper location of the load, this clearance should be increased as much as possible.

Maximum Load Weights

3. In determining the maximum weight of load, the following shall govern, except where load weight limit has been reduced by the car owner.

Marked Capacity of Car (Lbs.)	Total Weight of Car and Load (Lbs.)	Load Weight (Lbs. less Lt. Wt. of Car)
40,000	66,000	66,000
60,000	103,000	103,000
80,000	136,000	136,000
100,000	169,000	169,000
140,000	210,000	210,000
200,000	251,000	251,000

Example

	(Lbs.)
Capacity of car	100,000
Total weight of car and load	169,000
Light weight of car (to be subtracted)	37,000
Permissible weight of load	132,000

Load must be so placed on the car that there will not be more weight on one side of the car than on the other. One truck of the carrying car must not carry more than one-half of the load weight.

Trailers used for handling bulldozers, etc., over highways, must not be placed on railroad cars with such equipment loaded thereon. These items should be removed, placed on car floor and block in accordance with specifications.

Clearing Limits

4. The height and width of load must be within the clearance limits of the railroads over which it is to be moved. Army and Railroad officials must check on clearances prior to each move.

Stakes, Braces, Blocks, Cleats, Wedges

5. Such items must be of hardwood, fir, spruce, or long leaf yellow pine, straight grained and free from strength impairing knots.

Wire

6. Wire used for securing loads should be No. 8 Gauge black annealed wire.

Nails

7. The following sizes of nails are specified throughout the various illustrations: 20 d (4 inches) 40 d (5 inches).

Fuel in Tanks of Individual Units

8. Paragraph 105, Interstate Commerce Commission Regulations, governs as quoted:

"Automobiles, motorcycles, tractors, or other self propelled vehicles, equipped with acetylene gas cylinders or gasoline or other fuel tanks are exempt from specification, packing and labeling requirements provided such cylinders and tanks are securely closed. When offered for transportation by carriers by rail or highway, drainage of fuel tanks is not required. When offered for transportation by rail express, fuel tanks must have been drained and securely closed."

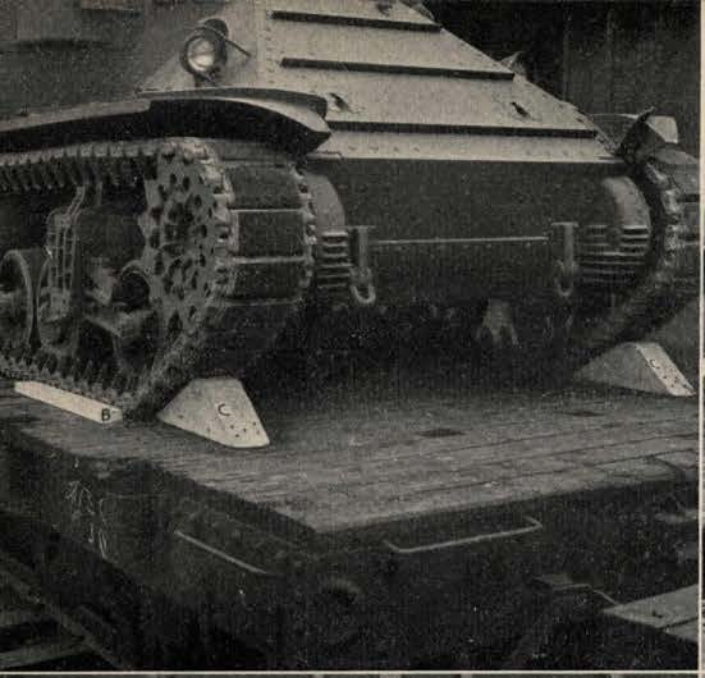
Brakes on Individual Units

9. All pieces of equipment which are provided with brakes, must have the brakes applied before moving over the railroads.

Additional Citations

Basic Field Manual (FM 25-10) pars. 184, 186, 187 a:

184. General Procedure—*a.* In case of shipment of individual motor vehicles or where the organization does not accompany its transportation, vehicles are turned over to the quartermaster for shipment. In this case the quartermaster is responsible for furnishing the necessary personnel and material for loading and blocking equipment. *b.* In organized rail movements of troops and their transportation, organizations are grouped and their vehicles are loaded and blocked by their own personnel on suitable railroad cars. Vehicles are usually shipped on flat cars (36 feet to 60 feet in length), gondolas (36 feet to 60 feet in length) or special box cars (usually 50 feet in length) designed for the handling of motor vehicles. Automobile cars or flat cars with wooden floors are the most desirable types because of the ease of loading and blocking. *c.* For tactical organizations being moved by rail, the necessary administrative orders are issued by the commander of the tactical organization through his staff covering details of methods of loading. Normally a quartermaster officer is charged with the responsibility of making the necessary arrangements with the railroad company for the type and number of cars required and point and time of delivery. Sufficient notice should be given this officer to allow him ample time to procure the equipment. If the tactical organization is isolated, the supply officer of the organization is responsible for making the necessary arrangements with the railroad company. The inspection and preparation of railroad equipment before and after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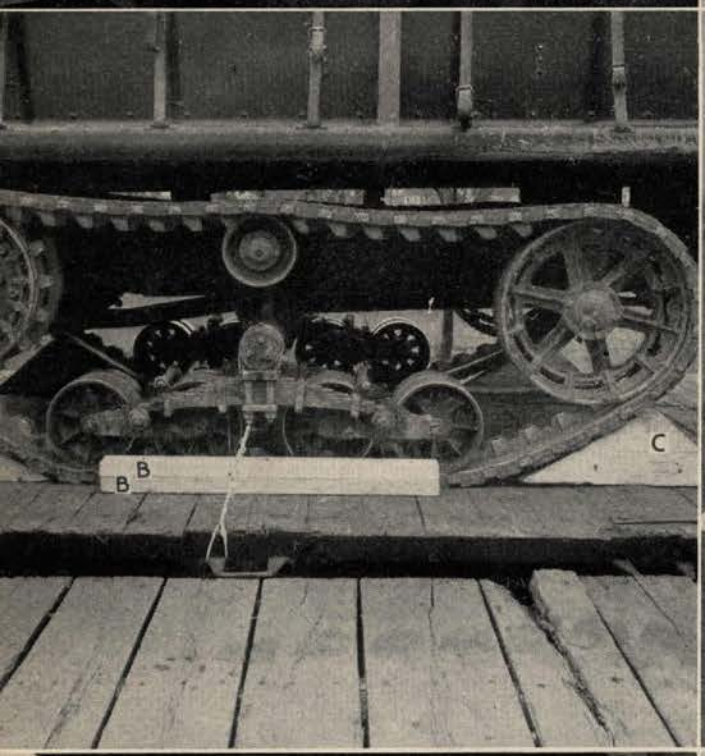
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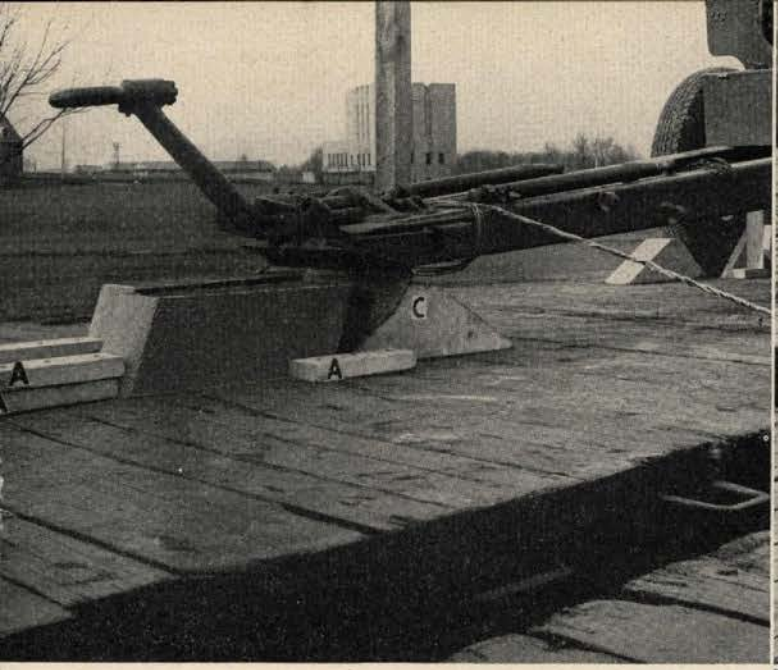
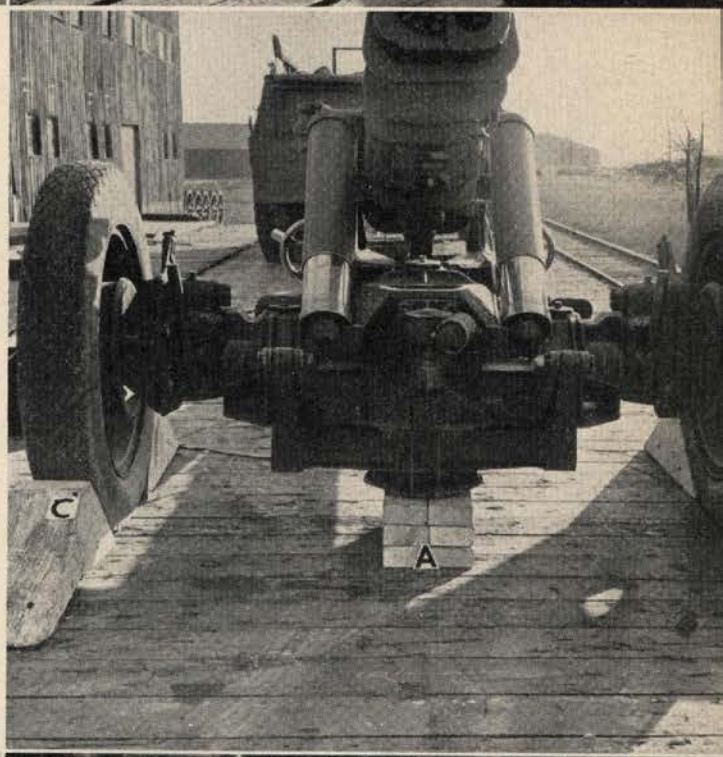
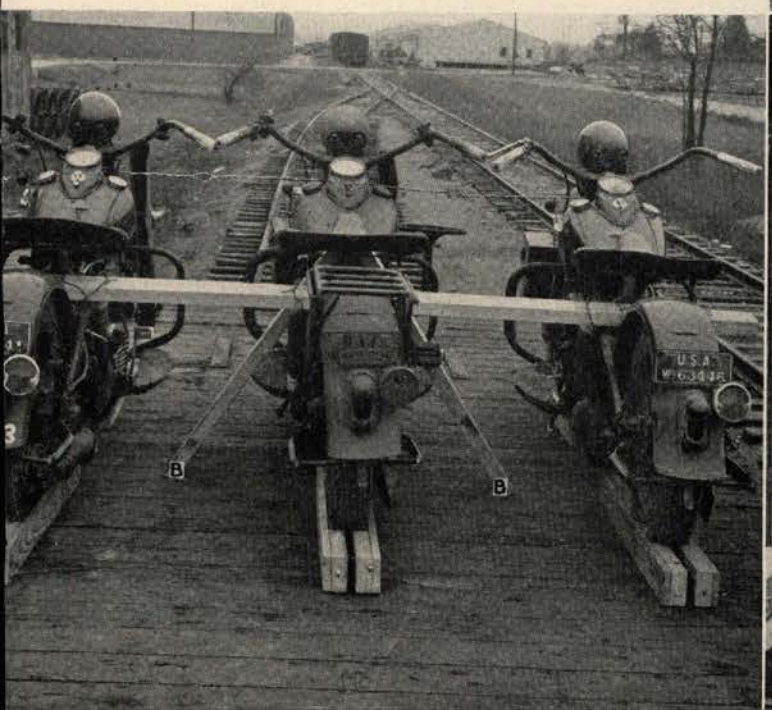


In addition to the distribution of the rules Commercial Traffic Branch controls and coördinates War Department traffic moving by commercial railways, steamship lines, motor lines, air lines and other means of commercial transportation; it reviews technical aspects of contracts, claims and related papers and during the fiscal year this Branch has provided routing for 1,534,981 men by rail, 689 by steamship and 203 by air. It has issued 15,663 freight route orders involving 176,691 carloads of freight and more than 100,000 carloads of construction materials unloaded at new camps; it has purchased railroad equipment amounting to $2,994,991. Serving in the Transportation Division of O.Q.M.G., Commercial Traffic Branch operates with a staff of 20 officers and 206 civilians.





loading, such as removing brake handwheels, is accomplished by railroad employees. Whenever it is possible to do so, permanent teams should be used for loading and blocking. Because of their increasing familiarity with their particular jobs, these teams will be more efficient and will accomplish more work than would different teams for each organization. In the long run this procedure will result in a saving of time and labor.

186. Facilities for Loading Motor Vehicles.—Whenever possible, vehicles are loaded and unloaded by their own power over permanent end ramps or platforms. Movement from one car to another along the length of the train is made possible by cross-over plates or spanning platforms. When no permanent ramps are available, improvised means must be used. Railroad ties are generally available and make excellent building material for this use. Any improvised means of loading must be carefully inspected for safety before it is used. If vehicles must be shipped in gondolas that do not have drop ends, a crane with sling, frequently obtainable from the railroads, is very useful in loading. In the case of shipments in side-door box cars, a dolly-type jack must be used to warp the vehicles into position within the car. In any event, advance loading details should be sent ahead to prepare the loading facilities and have them ready when the vehicles arrive at the entraining point.

187. Securing Motor Vehicles to Cars.—*a.* In securing or blocking a vehicle, three motions of the vehicle must be eliminated: lengthwise, sidewise, and bouncing motions.

Army Regulations 30-955, Section III, pars. 17-26, incl.

17. Type of car to be used.
18. Maximum loading; two or more vehicles to a car.
19. Blocking.
20. Protection of pneumatic tires.
21. Draining.
22. Accessories, tools and removable parts.
23. Tool boxes.
24. Responsibility of shipping officer.
25. How described.
26. Parts to be listed in detail.

Army Regulations 30-935, pars. 1, 2, 4, 5, and 6

1. Dimensions and capacities. *b.* Baggage, freight and stock cars.

2. Messing En Route, Equipment for: When the time required for the journey will exceed 48 hours and the number of men to be transported is 30 or more, baggage cars or suitable box cars will be used on the basis of one car for each 200 men or fraction thereof, as kitchens for preparing meals en route and the carrying of the necessary rations therefor. See par. 135, TM 2100-152.

4. Ordering cars. See par. 8, AR 30-930.

5. Types of cars suitable for various vehicles.

6. Calculating trackage.

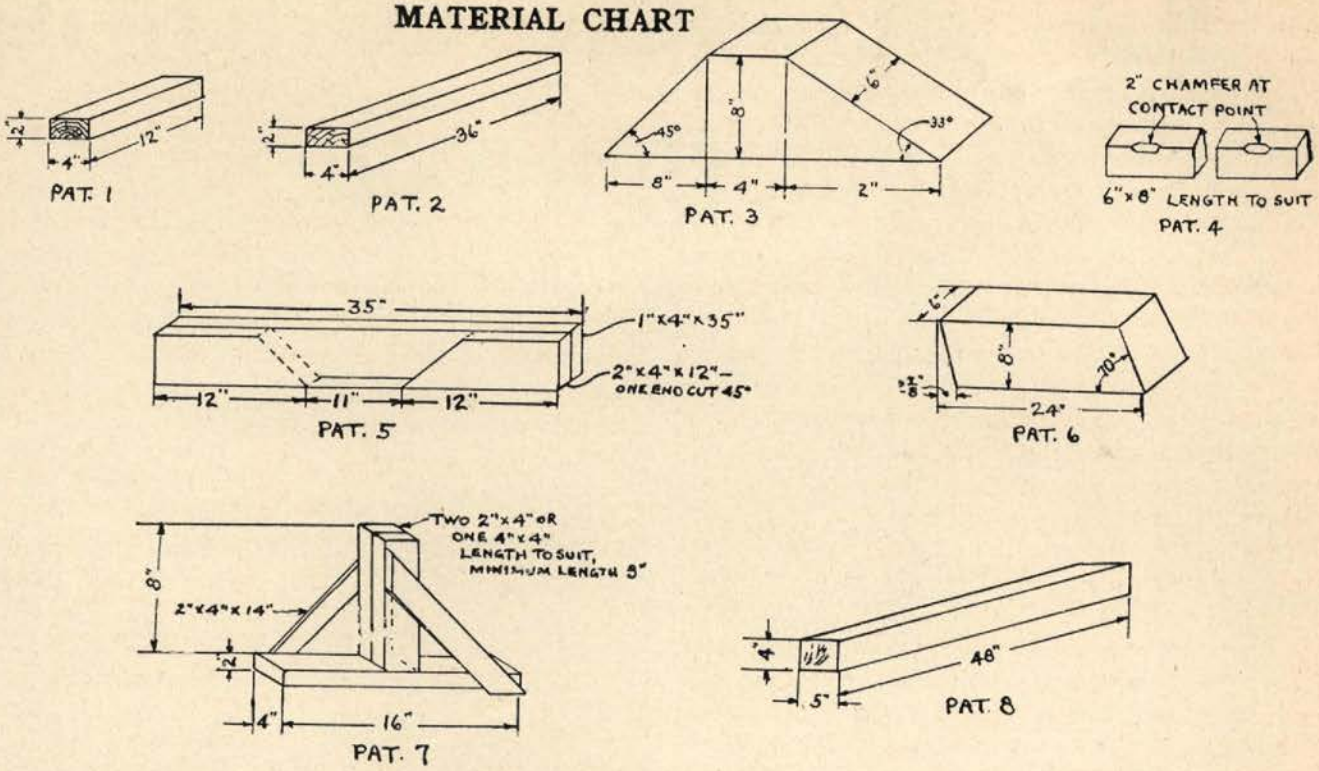
War Department Circular No. 56 (1940), Section IV. On installation and use of the U. S. Army Field Range M-1937, on troop trains. Additions by War Department Circular 63 (1940) on decrease of fire hazards when ranges are installed in railroad cars with wooden floors and by War Department Circular 39 (1941) requiring only white or ethyl gasoline (motor fuel) to be used in operation of range, Field M-1937 and removal of all gasoline in ranges and containers before entering tunnels into New York City, with replacement after passing through tunnels.

Handbook for Quartermasters (1930) par. 436.

Method of installing field range No. 1 in baggage or freight cars.

1. To install the field range No. 1 in a baggage car as a part of an emergency kitchen equipment, when kitchen cars are not available, construct a box 7 feet long by 3 feet 6 inches wide and about 12 inches deep, inside measurements, with bottom, using 1½ or 2 inch material. Line the sides, ends, bottom, and top edge of box with galvanized iron or zinc. Place box in car on 2 by 4's, running lengthwise on one side of car about 2 feet from the side, giving a 4-inch air space between bottom of box and floor of car. Box to be securely fastened to 2 by 4's. Align box so that when range is set up the center of smokepipe opening, as shown in handbook plates will be in alignment with the center of top ventilating window, through which it is intended to carry stovepipe. Range to be set up with oven toward front of train where possible. Fill box with dirt up to about 2 inches of the top. *Do not use sand under any circumstances.* Place a brick flush with top of dirt at each of the four corners where oven will be set. Place range in box so that front and oven end will be 4 inches from end of box and deep enough in the box so that when oven door is opened it will lie flat on edge of box. Place a brick at each front corner in the 4-inch space between the front end of range and end of box in order to prevent range from shifting. Place boiling plate in box, the end resting on top of angle iron on rear of range. Place a brick under each front corner of boiling plate flush with top of dirt. Six bricks, placed three to the side will serve to hold the range securely in position while the car is in motion. The alamo attachments are not used when range No. 1 is installed in the above manner. 2. Fasten range and boiling plate firmly to box by means of strap iron or wire at points shown. 3. Fill space between range, boiling plate, and side of box with soft mud to prevent heat from escaping. Three and even four field ranges may be installed in a car. 4. Box can be held firmly in position by securely cleating or nailing 2 by 4 inch strips upon which it rests to the floor of car. *This is important and must not be neglected.* 5. The following additional equipment to that supplied with each range is necessary: 2 galvanized-iron water cans, 2 galvanized-iron buckets, 1 stovepipe elbow and 100 feet of wire.

MATERIAL CHART



Material List for Securing Matériel

(In connection with minimum requirements for securing matériel on flat or drop end Gondola cars.)

Pattern 1 Cleats 2″ × 4″ × 12″. Each piece should be secured lengthwise of car with 40 d nails.

Pattern 2 Cleats 2″ × 4″ × 36″. Each piece should be secured with three 40 d nails.

Pattern 3 Blocks 6″ × 8″ × 24″. Heel of block should be secured to car floor with three 40 d nails; portion under tire should be toenailed to car floor with two 40 d nails.

Pattern 4 Timbers 6″ × 8″ × suitable length. Each piece should be toenailed to car floor with 40 d nails.

Pattern 5 Cradles. Each piece should be secured to car floor with 20 d nails.

Pattern 6 Blocks 6″ × 8″ × 24″. Each piece should be toenailed to car floor with five 40 d nails.

Pattern 7 Support. Each piece should be secured to car floor with six 40 d nails.

Pattern 8 Stakes. 4″ × 5″ × 48″ hardwood. Stakes should extend 4 inches below car stake pocket and should be secured with one 40 d nail driven directly below stake pocket.

Wire—8-Gauge black annealed wire—A. four strands of wire should be used to secure passenger cars, motorcycles, and wheels of all types. Wires should be twisted sufficiently to remove slack. B. six strands of wire should be used to secure trails. Wire should be twisted sufficiently to remove slack.

Nails—20 d (4 inches) 40 d (5 inches).

Mechanized and Motorized Army Equipment and Major Caliber Guns Loaded on Open Top Rail Equipment

I. Light and medium tanks, and prime movers—flat, or drop end Gondola cars.

II. Heavy tanks—flat cars.

III. Half tracks—flat, or drop end Gondola cars.

IV. Four wheel trucks, trailers, and passenger cars (single or dual wheels)—flat, or drop end Gondola cars.

V. Six wheel trucks (single or dual wheels)—flat, or drop end Gondola cars.

VI. 37, 75, 90, and 105 M.M. Mounted Gun or Howitzer—flat, or drop end Gondola cars.

VII. 155 M.M. Gun M-1—8 inch Howitzer Carriage—flat cars.

VIII. 3 inch Anti-Aircraft Gun—flat, or drop end Gondola cars.

IX. 37 M.M. Anti-Aircraft Gun—flat, or drop end Gondola cars.

X. One or more, two wheel motorcycles—flat, or drop end Gondola cars.

XI. One or more three wheel motorcycles—flat, or drop end Gondola cars.

XII. Pontons on Carriers—flat, or drop end Gondola Cars.

XIII. Heavy pontons on Trailers—flat, or drop end Gondola cars.

Railroad Field Loading Cavalry Troop

By Major Henry R. Westphalinger*

"CANDO," that mythical individual who is an exact antithesis of "Cannot" insists the ingenuity displayed by the Rogers Rangers in the popular novel *Northwest Passage* still lives. One example that proves this claim is that the progressive troop commander of today can load his troop in the field for rail shipment without any specially prepared loading facilities. During the years 1934-1938 the Cavalry School instructed its students with a demonstration showing what field expedients could be used to load a troop of Cavalry for rail shipment. While this was a carefully rehearsed demonstration that clicked like a Notre Dame football team, it was staged with such apparent ease and simplicity that it seems well to discuss what can be done with a little anticipatory planning.

The following materials, generally available along a railroad right of way in the field, are needed:

A railroad spur
40 Railroad ties (if necessary taken from the spur)
or
35 bales of hay and 20 saplings or stakes 2" x 4" x 5'

With the foregoing materials an excellent loading ramp can be constructed. Sketch No. 1 shows an efficient type of loading ramp quickly constructed from railroad ties. The base for the crib work of ties is leveled with pioneer tools. In some cases it may be desirable to fill in this base to eliminate the use of additional ties. Two ties separated by 6½' are then placed parallel to the track on this base. Two more are then placed horizontally and at right angles to the track of the first two ties. This process is repeated until the desired crib is about one foot below the level of the car floor. The next step is to place two ties sloping from the top tie that is parallel to the track and to the ground and then deck over or form a platform with ties. On the sloping runway ties are alternately placed flat and on edge which provides a rough surface for the horses to climb. Part of the upper corners of the sloping ties must be removed with an axe to permit decking of the horizontal part of the ramp. It is not necessary to bring the horizontal portion of the ramp to the level of the stock car floor since the horses can readily step up the remaining four to six inches into the car. The ground ends of the sloping ties should be embedded in the ground to provide stability to the ramp. Additional stability is secured by staking the lowest tie of the ramp with a tent stake or other stake to prevent slipping. It assists in loading to place hay (preferable) or dirt on the entire ramp way. Fresh earth will cause timid horses to hesitate going up the ramp. However it normally dries out quickly and in wet weather this effect does not bother them.

This type of ramp can be easily made in 10-15 minutes if all materials are at the entraining point. Spikes, nails or special tools are wholly unnecessary. Certainly the time of 3½ minutes to load a car of 22 horses with such an expedient can not be greatly improved upon by a permanent structure.

Several types of ramps can be improvised by utilizing bales of hay. Sketches No. 2 & 3 show the construction of one such type of ramp. This is constructed by utilizing bales of hay staked in place as revetment and additional bales to fill in and then packing the cracks between the bales with dirt. This provides a substantial

*Ordnance Department, Fort Riley, Kansas.

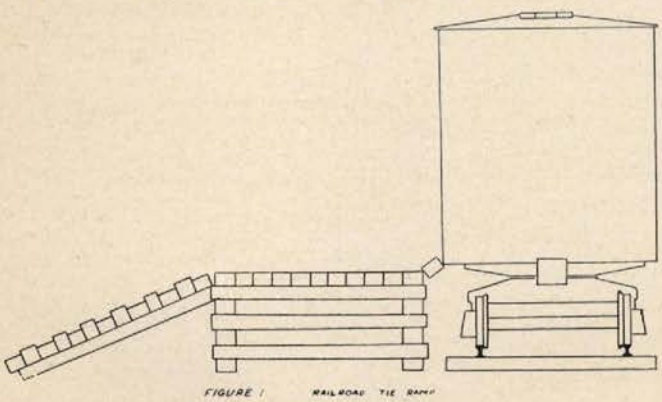


Figure 1: Railroad tie ramp

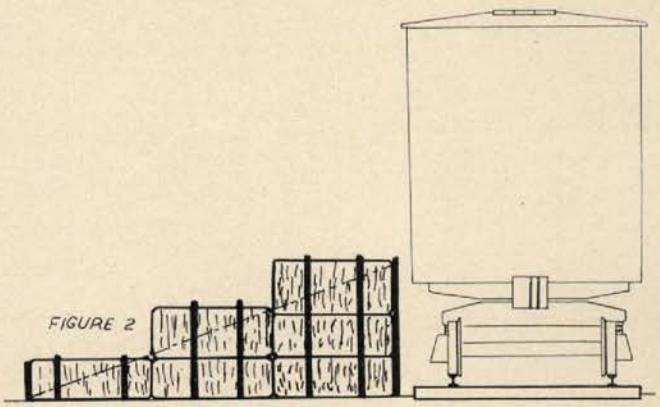


Figure 2: Railroad hay ramp

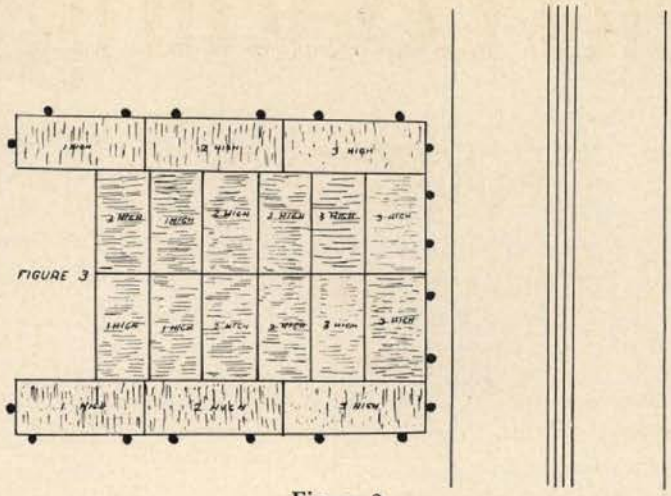


Figure 3

and effective ramp over which horses can be loaded just as fast as with any other type ramp. However it requires a longer time to build than the railroad tie ramp. Its life is remarkably long; being dependent on the deterioration of the bales of hay due to rotting by rain rather than on wear in use.

To speed the loading of the horses up the ramp and into the car only selected men should be used. A crew to load cars should be selected from men of known ability and should consist of the following:

Two men to lead the horses into the car.

Two men to assist by gently urging from a position along side the runway of the ramp. One of these men to be the N.C.O. in charge of the detail, and

Four men, two in each end to hold the horses in place in the car, keep them quiet, and remove halters.

The individual trooper should turn his horse over to this crew for loading. A known bold horse should be loaded first and then the other horses should follow without distance. In this way a timid horse will readily load. The last few horses, if possible, should be horses that are known to load easily. It is a moot question whether or not it is necessary to load head and tail.

If the head and tail loading is to be used the 18th, 19th, and 20th horses loaded should be turned around in the car to face out so that the last two can be led directly into the car without turning around in the very limited remaining space.

Normally, the use of force to load is unnecessary and undesirable. Should a horse refuse to go up the loading ramp it is generally best to start him over again directly behind a steady horse. Horses should be accustomed to loading during garrison training by actually practicing loading. The railroads are most coöperative in loaning cars for this purpose. Little difficulty should be expected in loading even when untrained or fractious horses are involved. Malodorous cars due to their dirty condition will sometimes cause difficulty in loading but this can be eliminated by requiring clean cars. Hay placed on the runway and sanded car floor facilitate loading. The danger from sand colic from such a practice is more apparent than real. Further, the hay is quickly trampled into the sand and the horses will not eat it.

In loading a troop an additional ramp should be constructed if the kitchen and combat trucks are to be shipped by rail. This should be constructed at the end of the spur to permit loading of these trucks on a flat car or in an end loading automobile car. Sketch No. 4

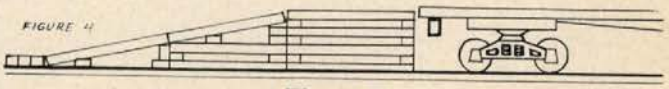


Figure 4

shows how such a ramp can be quickly constructed with railroad ties. It also can be constructed using hay as outlined in the foregoing description. Since the width of the track of any such ramp is necessarily narrow the approach thereto will require some filling with dirt to prevent the rails deflection of the truck's wheels when ascending the ramp. This is especially true in wet weather.

With the construction of suitable ramps discussed it might be well to turn to the sequence which should be followed in loading the troop. Obviously, the sequence to be followed may vary with different conditions and any logical procedure will produce the desired results. The following procedure should normally be followed:

Selection of the entraining point from a map,

Reconnaissance of entraining point,

Selection of entraining point from personal reconnaissance,

(Full use should be made in loading cars from a bank of a narrow cut or other similar advantage. Loading from a fill should be avoided if possible.)

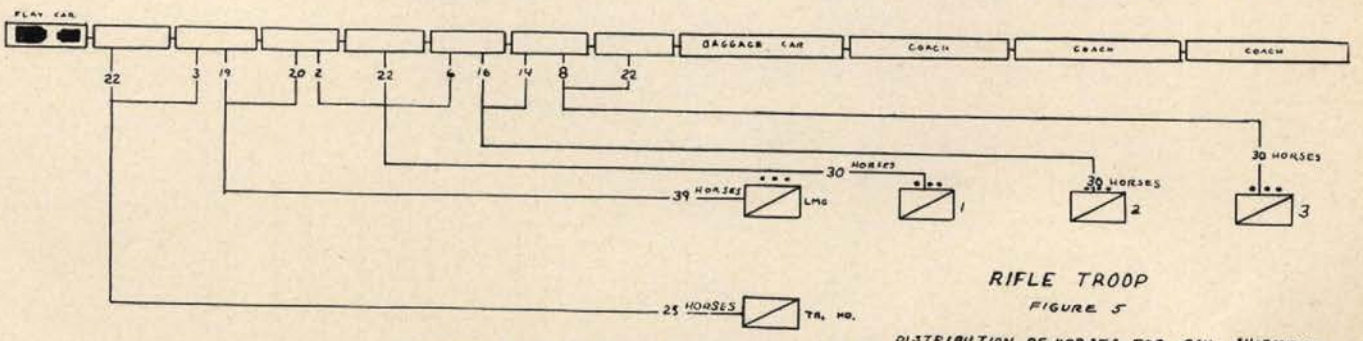


Figure 5: Distribution of horses for rail shipment

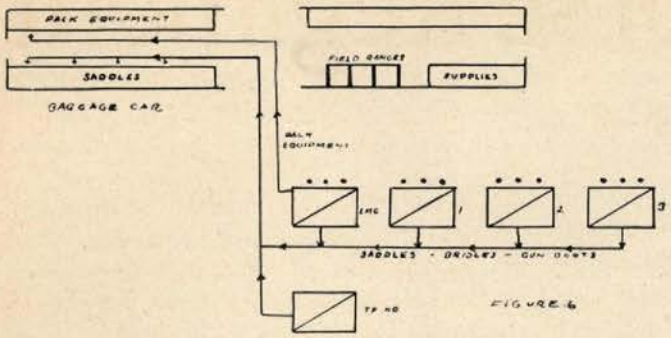


Figure 6

Cars should be spotted in the desired place.

The kitchen and combat trucks should be used to haul such materials as are required while the troop is marching to the entraining point.

A sufficient detail should be sent (about ten men) in trucks to actually construct ramps, unload equipment into baggage car and load trucks on car.

It is conceivable that under certain conditions it would be desirable to keep the mess equipment on the kitchen truck. If the kitchen truck is to be used for cooking its car should be relocated from the end to a position next to the coaches.

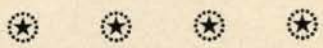
The troop should be halted in a suitable formation such as is shown in sketch No. 5. The packs should be opposite the baggage car and the Rifle Platoons horses unsaddled opposite the coaches to be occupied by the personnel of the platoons.

Since a loading ramp will not be supplied for each car, while the L.M.G. Platoon is loading its horses the other platoons can be sacking (use grain sacks), tagging, and loading its saddle equipment.

Sketch No. 5 also shows a distribution of the horses in the cars. There are many other ways of distributing the horses equally as satisfactory as this one.

Sketch No. 6 shows a method of storing the packs, saddle equipment, barrack bags and mess equipment. Arms, a limited amount of ammunition, saddle bags and cantle rolls should accompany the personnel in the coaches. This equipment should be carefully stored between the seats and properly secured in the overhead baggage racks. Not to exceed three individuals should occupy four places in the seats. This seating arrangement permits the individuals to get some sleep en route.

By following the foregoing methods of loading, a troop can expeditiously entrain with a minimum of confusion and delay.



Reorganization Plan of Cavalry Troops

A reorganization of the Headquarters and Service Troop and the Special Weapons Troop of horse cavalry regiments is planned to provide greater antitank protection.

Several troops of these two types are organized provisionally and are being used experimentally in the present maneuvers with the object of evolving final types of organization to meet modern conditions. Basically, however, the plan requires the replacement of .50 caliber antitank machine guns with 37-mm. antitank guns; and pack animals will yield to motorized weapon carriers until a suitable antitank gun that can be packed on animals is developed. The plan ultimately will affect the composition of the Headquarters and Service Troop and the Special Weapons Troop in the ten regiments of horse cavalry in the 1st and 2d Cavalry Divisions and the 56th Cavalry Brigade; and in the 3d and 11th Cavalry Regiments, which are separate units.

Under the provisional plan the Special Weapons Troop, now part horse and part motor, will be completely motorized. Instead of the .50 caliber machine guns it will receive six 37-mm. antitank guns. The 81-mm. mortars will be retained. Its 143 riding horses and its 40 pack horses will be replaced entirely by motor vehicles.

The scout car platoon and the motorcycle platoon will be eliminated from the Headquarters and Service Troop and will be transferred to the Special Weapons Troop, where they will be combined into a single, large reconnaissance platoon. The removal of these two platoons is the only change that will occur in the Headquarters and Service Troop.

Supply of a Horse Regiment

By S-4

Editor's Note: This is the fifth of a series of articles on this subject.

THERE was not much time which could be wasted by S-4 in making plans to meet the situation we left him in at the close of our last installment in The Cavalry Journal. A sensible, practical, and simple solution of the plain job of providing supplies and ammunition to the regiment for tomorrow is what is necessary and it must be determined quickly; there will be much to do to successfully execute any plan now. But a plan must be made and presented to the regimental commander for approval and also in order that he may be fully advised.

First let's consider rations for the men. A hot evening meal is now being served to the troops. One meal, breakfast is necessary, is on the troop ration packs; it is the same load they marched with this morning and which has not yet been consumed. Another meal is in possession of the men, the "C" ration issued that morning at the same time their cooked lunch was issued to them. There is one-third of a ration, one meal, still on the trucks in addition to supper now being served; this normally is that part of the ration which would be issued as a prepared lunch for tomorrow, or it can be used for breakfast if prepared by the truck kitchens.

Because of the time trucks will be needed for operation during the night, and the fact that S-4 estimates 2:00 AM as the earliest hour he can get the trucks back to the regimental area with supplies, there will be very little time for the cooks to prepare a cooked lunch for the men for tomorrow. This of course does not apply to those trucks of front line troops which are not to be a part of the convoy. S-4 decides the practical thing to do is to have those troops whose kitchen trucks will be on convoy, dump the one-third ration they have on kitchen trucks at troop mess locations to be either prepared as breakfast, or replace the ration pack load which otherwise will be served as breakfast, the meal to be cooked on the "buzzy-kot." For lunch tomorrow troop commanders will be instructed to have the men eat the "C" ration previously issued them. The front line troops will do the same thing with their rations, except that with their trucks available to them throughout the night, breakfast can be prepared on the truck-kitchens, however their kitchen trucks must be withdrawn from "up front" well before daylight; S-4 considers 3:30 AM the latest they should remain with the troops, and when his plan is translated into orders those trucks will be directed to report to an assembly point, preferably the present train park to which all drivers know the route, not later than 3:45 AM.

By this plan S-4 has insured breakfast to all troops, irrespective of any unforeseen delays which may occur to his convoy. Besides this all troops will have lunch and supper in their possession and will not have to depend upon the trucks for either of these meals. If conditions make it at all possible S-4 will see to it that tomorrow's supper is prepared on the truck-kitchens, rather than on the "buzzy-kot." But it is too far ahead, and the situation too uncertain to definitely plan on this, so he plays it safe.

Next S-4 considers grain. The evening feed is on the saddles, but if the horses are to have the same number of feeds available to them as for the men, without resort to the trucks, three feeds are required, and only two feeds are available. It's a case of doing with what you have. One of the two feeds will be fed in the morning, the other will be carried on the saddle and fed at noon. The well trained stable sergeants may be depended upon to spread these two feeds so that each horse will have at least a small feed tomorrow evening if the trucks do not deliver grain by that time. And as S-4 knows the horses have been grazed during the day this is a real help.

What about hay? Granting that it will be available at the truckhead, what chance is there that it can be gotten forward to the horses in time to be fed during the night? Remember S-4 estimates that the best he can do, receiving supplies at 11:00 PM, will be to get supplies up to the regimental area by 2:00 AM; too late to distribute and feed hay with a sure thing fight on tap for the morning. Hay delivered by the division train this night will be "out" for feeding before tomorrow night. No authority has been received from division to procure hay locally, as Division G-4 indicated would be the case if considered necessary. Is there any hay available if he had the authority to buy it? Yes, there is; S-4 noticed some in the farmer's barn near the windmill he used for a reference point for truck drivers earlier in the day, and there were two piles of baled hay under tarpaulins in the same farmer's fields. Should he take the bull by the horns and buy as much of this hay as he needs and trust that he will later receive the necessary authority? If he does this and he can get the farmer to deliver all or even a part of it he will be doing the sensible thing. He does however send a message to division requesting authority to make such a purchase, just to be in the clear, but he cannot wait for a reply before buying under the circumstances. This matter is sufficiently important that he gets the approval of the regimental commander at once; sends his command truck with a message to the Supply Sergeant directing him to contact the farmer at once and arrange the pur-

chase of baled hay if possible, but hay in any event, and enough grain for one feed if the farmer has it. In stating the amount he wishes to buy he takes into consideration the needs of the First Squadron.

Then gasoline and oil must be considered. S-4 has already handled that by having extra gasoline and oil brought forward for the scout cars and motorcycles. They will fill from the containers and the empty containers will go back to the truckhead on the convoy, there to be traded for full containers. Nothing unusual or out of the ordinary in this respect.

Last but not least, and in its importance by far the first consideration of S-4 is the ammunition. Expenditure reports have not yet been received from the troops and they are not due for at least another hour. S-4 knows the situation with regard to ammunition pretty well without having such reports. There hasn't been any real fighting as yet and he has brought up two truck loads of ammunition for rifle troops, except for a small portion of machine-gun and mortar. He estimates that he has in the hands of the rifle troops three days, or units, of fire; in machine-gun and special weapons troops slightly less, say two and one-half units; and for the scout cars and motorcycles his experience tells him that owing to what they have been doing during the day, reconnoitering across the river and to the flanks, that they probably have consumed about one-third of their load. S-4 does not expect any ammunition to be delivered to him at the truckhead. In the telegram sent to division that morning by the adjutant it had been stated no ammunition required. Should S-4 stand by this and make another trip to the Army depot for ammunition; take a chance that what he has on hand will meet the situation; or send a message to division requesting more ammunition to be delivered to him at the truckhead when the other supplies are delivered? One thing he does not do is take a chance, with any supplies, much less ammunition. When supplies or ammunition are not where they are required at the time required, no heaven sent inspiration is going to move them to that point in the twinkling of an eye and thus save the battle. He is short of trucks (three gone) so if possible he wants to avoid another trip to the Army depot; his drivers have been on the job, not driving all the time of course, since early this morning and they have a hard night ahead. S-4 decides the thing to do is ask division to send up a part, or all (depending on the decision of the regimental commander) of the regiment's share of the reserve ammunition carried on the division train, these trucks to be attached to the regiment until such time as loads are consumed or transferred, when they will return to control of the division quartermaster.

The above is an exception to the usual method of handling ammunition replenishment and in most cases it would not be approved by the division G-4. But let's examine the situation a little further. Our regiment is on the line; it is the only one that is, though certainly one more will be by morning; there is a shortage of three trucks and there may be more before morning. Division G-4 will solve the problem with full knowledge of just how he plans to handle ammunition replenishment for the whole division the next day. If he turns trucks over to our regiment he can feel assured the ammunition will get forward during the night and be close up in the rear of the point where it may be needed early tomorrow. On the other hand it is planned for the whole division to move up during the night, and that being accomplished, the division ordnance officer will have his ammunition control point established before daylight with the trucks carrying the division ammunition reserve on hand in that vicinity. If the regiment was to continue to act independently of the division the obvious thing to do in the situation would be to attach the trucks carrying the regiment's share of the reserve to the regiment. The chances are that G-4 will, if he receives a request for attachment of ammunition trucks, instead send trucks to the truckhead with ammunition to be transferred as required, the division trucks thus emptied to return to Army depot for a reload. That will put a burden on S-4, but with the division employed as a whole tomorrow and an ammunition control point in operation he can feel assured that he will be able to obtain all he needs when he needs it.

S-4 by asking for attachment selects the most certain method, and as said before if the regiment were to continue to act independently there would be no question but his request would be approved. In this case G-4 should not approve. The discussion is more to illustrate both methods to a degree, than to outline what is done in this particular instance.

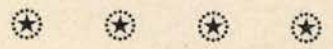
While it takes considerable time to write, and to read, all of the above conditions which S-4 must consider in order to revise his plans to fit the changed plan of employment for the regiment, under actual conditions he would not take five minutes time to weigh all these points and arrive at his own revised plan and be ready to discuss it with the regimental commander. Receiving the regimental commander's approval of his plan, the first thing S-4 does is send a message to the Machine-Gun, Special Weapons, Headquarters, and the reserve troop commanders to send one truck each with detail of four men to report to the train park at once to haul hay. Next he sends a message to division making his request for attachment of ammunition trucks and including information that he is three trucks short. He then proceeds to the train park himself, by scout car or motorcycle, the Supply Sergeant having his command truck. Arriving at the train park it is not long before the trucks begin to arrive; if loads have not been dumped in troop areas, they are dumped now, and before this is finished the Supply Sergeant is back with the information that he can get about two-thirds of the amount of hay desired and enough grain for one feeding. The farmer has one truck, one small pick-up truck and two wagons which he and his sons will use to deliver with if helped in loading, but he insisted that he

get two dollars a ton extra for all hay which he delivers. S-4 gets in his command truck, tells the Supply Sergeant to bring the other trucks, and heads for the farmer's house. There he completes the transaction with the farmer by giving him a signed receipt (requisition) stating the amount of hay and grain received, the stipulated price, and that it was received by requisition and payment therefor not made. He makes this receipt in at least five copies and places a certificate on each for the signature of the farmer to the effect that he has delivered the hay and grain as stated and has not received payment therefor. S-4 gives one copy to the farmer, keeps one copy for his own file, and takes the other three including the original to send to division through channels, telling the farmer that the division finance officer will pay him in cash or by check within ten days. Had the necessary instructions for local procurement of supplies been issued beforehand by division, S-4 would have had the necessary blank forms on which to execute such receipts, and in some cases would have been given cash as an Agent Finance Officer to enable him to pay cash for supplies requisitioned. Not having cash or prescribed blank forms S-4 makes up his own receipt form, being careful to state all necessary information: what, how much, price, etc., and includes a certificate for the vendor to sign. Such a paper executed in a situation as outlined will accomplish the same results as one made out on prescribed forms. The two dollars per ton extra demanded for hay delivered by the farmer is included in the purchase price.

The trucks having arrived S-4 has them loaded with hay and grain for the First Squadron, planning that the farmer will deliver to the balance of the regiment which is the shorter haul. Leaving the Supply Sergeant to handle the delivery to the regiment, S-4 proceeds with the other trucks to the train park where he picks up the Transportation Officer and directs him to deliver the hay and grain to the First Squadron. S-4 in his command truck then leaves for the command post of the First Squadron, going via the regimental command post to learn if the brigade commander has arrived, and of any further changes in plans which may cause him to further revise his own. The brigade commander has arrived but there are no changes beyond the fact that the regimental commander has advised the commander of the first squadron that he is no longer acting independently in his sector, the whole sector being taken over by the regiment with no change in present troop dispositions. This changes S-4's responsibilities slightly but it does not change his plans in any respect. He is now more directly responsible for the supply of the First Squadron than was the case when it was detached and acting independently.

The brigade commander's staff is with him and S-4 promptly contacts the brigade S-4, informing him fully as to his own situation and his plan for tonight and tomorrow. The brigade S-4 after hearing his plan agrees with it, and on a map indicates a point where the brigade train (less ammunition trucks and ambulances) will be assembled under brigade control by 4:30 A.M.

After his conference with the brigade supply officer S-4 continues on his way to the command post of the First Squadron arriving there ahead of his forage trucks which had taken a longer and less exposed route than his own.



"Theoretical training is invaluable, as in any profession, but, as in most others, it forms merely the groundwork, as no two military situations are ever exactly alike. The necessity of professional education should not be minimized in the slightest degree; it is too highly important; but the best informed theoretical soldier without practical comprehension will often find his plans go wrong. To complete the qualifications essential to the successful soldier, there must be added persistence, force, initiative, and personal leadership."—GENERAL JOHN J. PERSHING in *My Experiences in the World War.*

Second Armored Division Maneuvers in Tennessee

By Lieutenant Colonel Oscar W. Koch, Cavalry

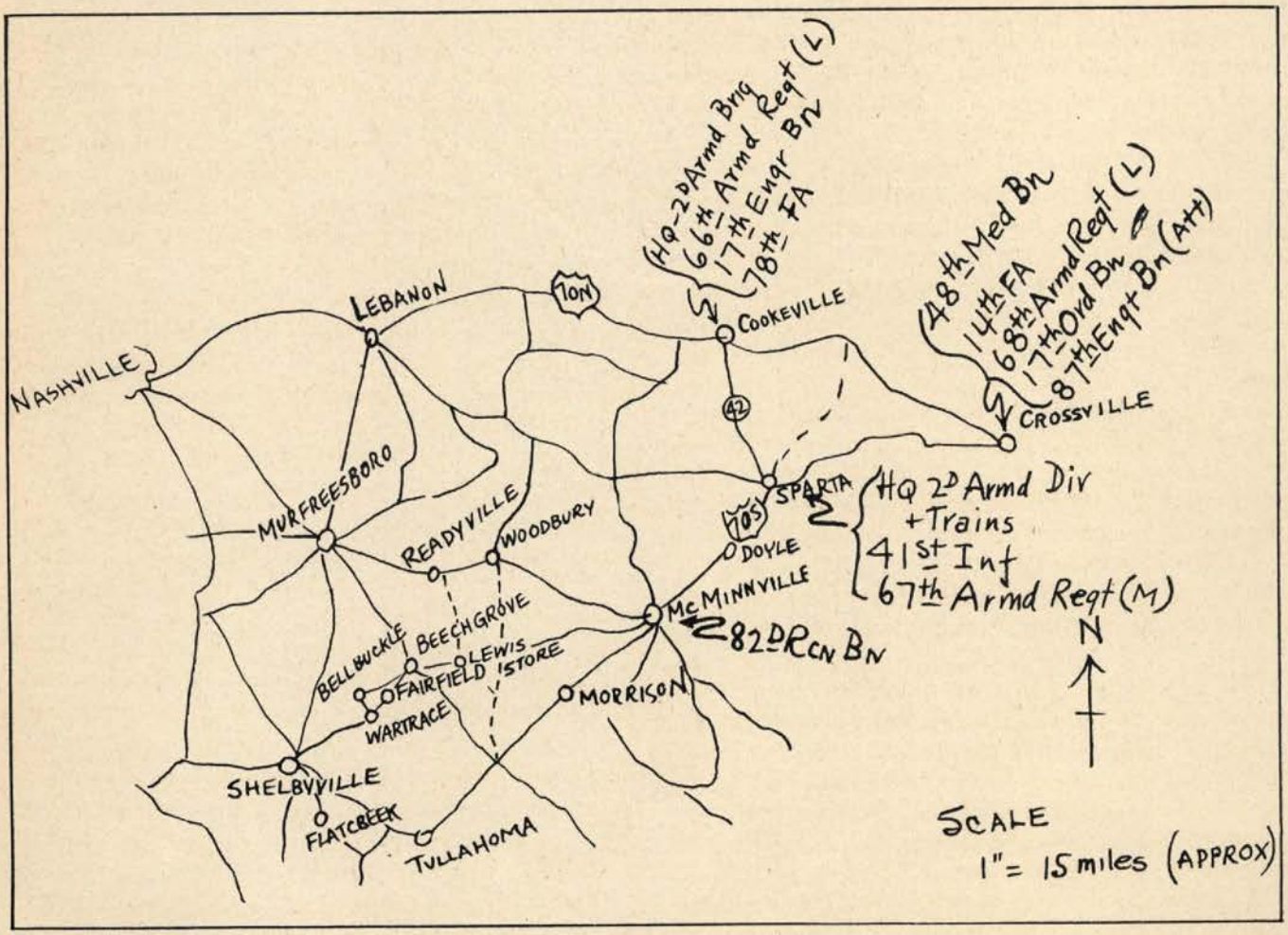
"YOU can say what you want, but this thing at the time had no parallel in the tactics of American arms. If nothing more, it showed how reliance upon the initiative of subordinate commanders can carry an attack to a successful conclusion with a minimum of direct instructions, although the attack order is given 75 miles away."

So spoke Colonel Blank, enjoying his coffee with some of his old cronies at the Army and Navy Club some years later. He was, of course, recounting some of his experiences of the first maneuver of the Second Army maneuvers held in the last two weeks of June in Tennessee in 1941.

"There were a lot of troops for those days, including the VII Army Corps (provisionally the Fifth triangular division and the 27th and 30th square divisions). There was also a host of attachments, normal for that size command. Lieut. Gen. Ben Lear was the Second Army Commander. Maj. Gen. Frederick Smith commanded the VII Corps, and Maj. Gen. George S. Patton, Jr., the Second Armored Division.

"I was with the Second Armored Division," continued our narrator, "and so in a position to get a good idea of what was going on, particularly as far as our own division was concerned. As this story concerns mostly the action of that division, I may not give the others due credit. I ask you in good faith to charge that off to that intangible something—esprit—rather than an earnest desire in the direct form of prevarication.

"To give you the general situation, without the usual academic technicalities—and by the way, let me use your pencil, waiter—here was the big picture." Therewith



Sketch A

Colonel Blank drew a sketch on the tablecloth, the kind that causes unpremeditated grief to the laundry a few days later. (See Sketch A.)

"Up here in the northeast the division was assembled by rail and motor movement to terminate in concealed bivouac the night of June 15-16. The movement was made in secrecy and well out of the maneuver area, which was roughly in a rectangle running north and south from Murfreesboro and Woodbury as the northern limits. The tanks and half-tracks, in short, all but the wheeled vehicles, were sent by rail. The motor column marched by two routes in two days from Fort Benning.

"Little was known of the war situation, except that in G-2'ing the problem, if we were to the northeast of the maneuvers area, our activities would probably be in that area and some miles away. Shortly after arrival we did hear what the war was about.

"Roughly, on June 14 our 'Red' forces invaded Blue territory, overpowered the Blue border guards and were on June 16 concentrated in the area east of a creek running generally north and south between Wartrace and Fairfield. Covering forces were in contact.

"The Red Fifth Division was an independent division acting as an advance force for the Red Army. The Second Armored on arrival on June 15-16 passed to control of the Fifth.

"The mission of the Reds was to delay the enemy west of Manchester, and upon arrival of the Second Armored, to assist the advance of the Red First Army by driving the enemy west of Bell Buckle," Colonel Blank explained. (See Sketch B.)

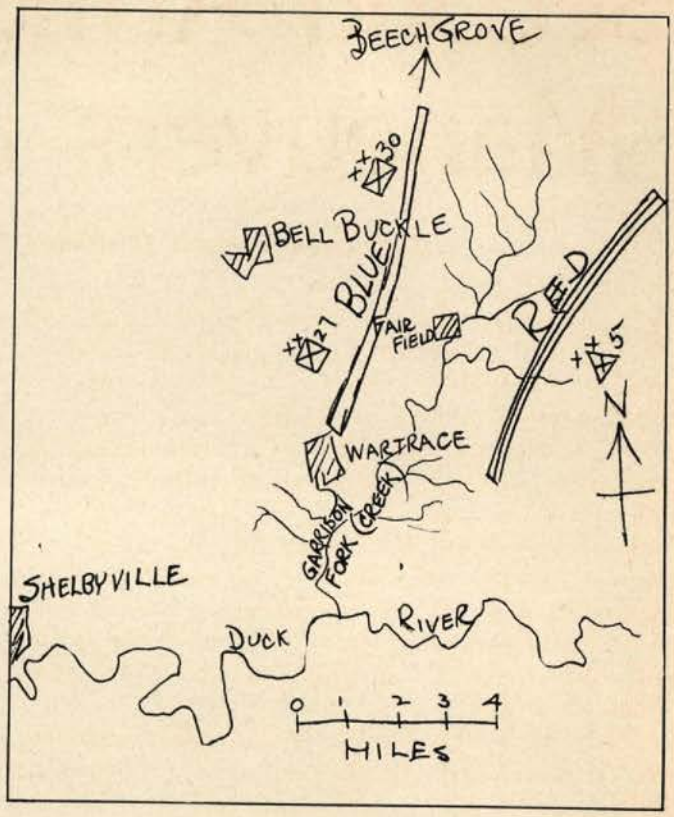
"We found out later, as might have been expected, that the Blues were to consist of the other two divisions (27th and 30th) and attached troops, with a mission of driving our Red force to the east. The preponderance of enemy infantry strength was because of organization of about four Blues to one Red.

"When the situation was actually plotted on the map, it looked like our right honorable Fifth Division was in for a tussle, for, also according to the problem, it was ruled that though the Second Armored could start its reconnaissance on the 16th, its combat elements could not move until after midnight on June 16-17, as theoretically the unloading would take that long.

"To go on, it looked as if the Fifth couldn't possibly hold out. Terrain was not a great favorable factor, and a series of nine delaying positions was reconnoitered by them.

"All day of the 16th, from 5 AM on, the division ground and air reconnaissance elements were active, seeking to determine the pattern of the enemy dispositions, and the favorable roads and routes thereto for use during the attack. Having made a wide and deep reconnaissance successfully during the daylight hours, the plan for attack was drawn up.

"You talk about your field orders! There was nothing much to the one issued by the division commander to the assembled unit commanders at the division command post near Sparta at 6 PM, June 16. Bear in mind that the division had arrived during hours of darkness and was in concealed bivouac. As far as is known there was no one present who had made a detailed reconnaissance of the area. I'll bet you never saw orders like it in your service. For that reason I've preserved mine, and when at long last I write my memoirs, as is custom, I'm going to write a chapter on this exercise."



Sketch B

Colonel Blank therewith produced the field order in original form from his billfold. (See Sketch C.) (Reduced by ⅓ for publication.) "You note that this isn't mimeographed, but reproduced by another duplicating process. Why? One of the orders of the day in the division was that no typewriters were to be carried in the forward echelon. It worked, too.

"So you see, all that was necessary with that well-trained command was included. Not mentioned were roads, but the direction and plan of maneuver, plus various empirical formulae that had been expounded many times by the division commander. He didn't want a combined attack. He wanted—and he got—an uncoordinated attack from, as the order shows, all directions, first here, then there, against which there could be no adequate or prepared defense. Surprise was, of course, a factor, but unless they got information in time to meet these attacks, it was little help to the enemy, whether they knew where they were going to be hit.

"The Fifth Division held off successfully until the day on which the Second Armored was to enter the picture. The Fifth fell back to the third delaying position

1—Full field inspection of about one-third of the equipment, 2d Armored Division. 2—Artillery vehicle. 3—M-3 light tank. (Note extra gas cans.)

by the end of the first day. The next day the Second Armored did its stuff.

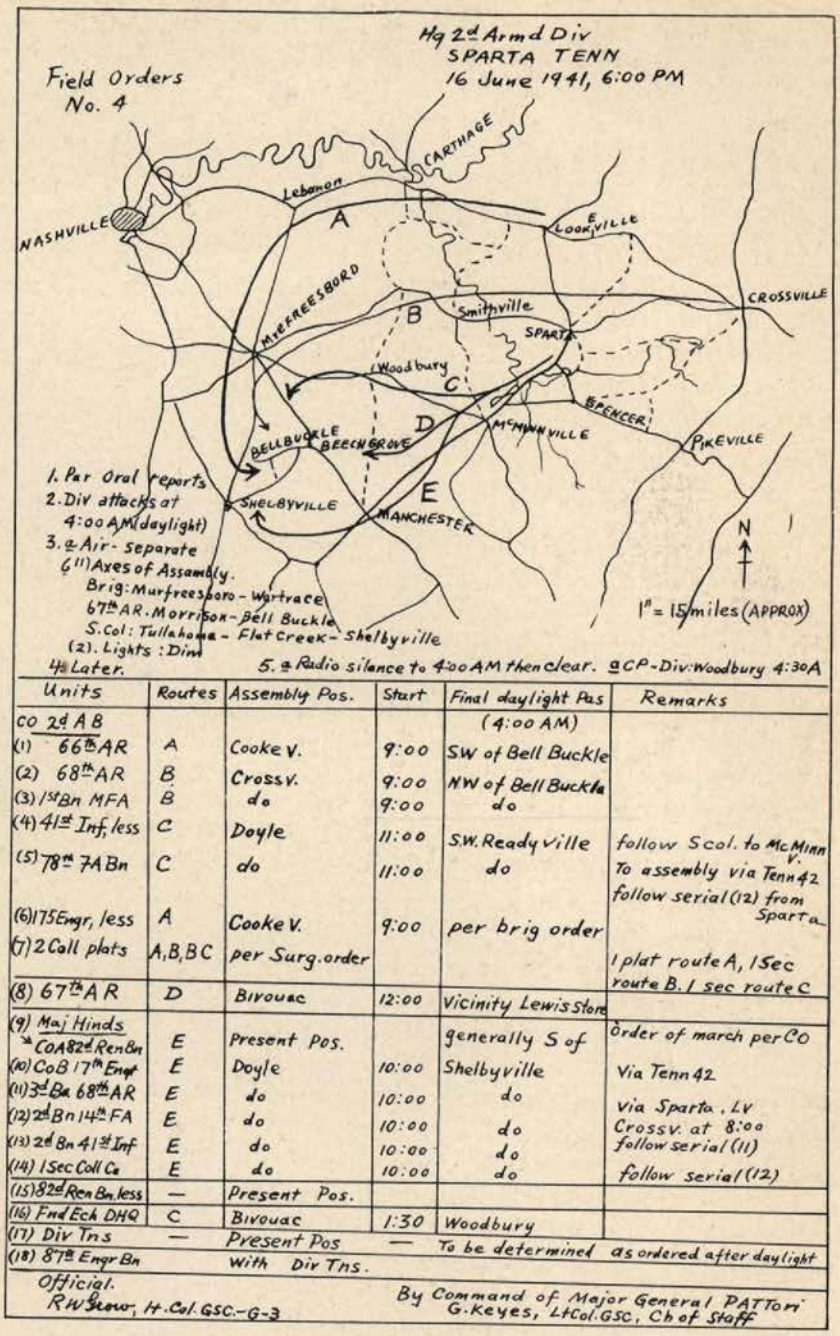
"But before we get to that, you should know that these outfits were just a little different. The G-2 of the armored division actually planned the reconnaissance desired from the division reconnaissance agencies. The agency, other than the normal air attachment, was principally the reconnaissance battalion.

"This battalion was in reality a miniature division, with two reconnaissance companies, a tank company and an infantry company. Such a unit, properly employed, could execute just about any reconnaissance mission assigned to it. The regiments also have reconnaissance platoons and companies, organically, for the unit reconnaissance.

"As noted in Sketch C here, the reconnaissance for routes A and B were both performed by the regimental reconnaissance companies, and that for the routes CDE by the reconnaissance battalion. All of the agencies reverted to their organic control at 6 AM on the 16th, so as to be able during the night of June 16-17 to lead their units over routes selected during previous daylight hours.

"So the plan for attack was, briefly, to use four columns, A, B, C and E to make an encircling attack on the Blue position, and to hold Column D, the medium tank regiment, to administer the *coup de grace*. As you can see, the regiments started so as to have all columns moved from concealed bivouacs under cover of darkness for a daylight 4 AM attack.

"On the morning of June 17 they were in position at 4 AM to attack the Blues as directed. Lines of departure, as I said before, were not prescribed, and the initial uncoördinated attacks were handled by column commanders independently. Column A, after marching 120 miles, was near Bell Buckle, its objective, at 6:10 AM and attacked at 7:45.



Units	Routes	Assembly Pos.	Start	Final daylight Pos	Remarks
CO 2d A B				(4:00 AM)	
(1) 66th AR	A	Cooke V.	9:00	SW of Bell Buckle	
(2) 68th AR	B	Crossv.	9:00	NW of Bell Buckle	
(3) 1st Bn MFA	B	do	9:00	do	
(4) 41st Inf, less	C	Doyle	11:00	S.W. Ready ville	follow Scol. to McMinn V.
(5) 78th FA Bn	C	do	11:00	do	To assembly via Tenn 42 follow serial (12) from Sparta
(6) 175 Engr, less	A	Cooke V.	9:00	per brig order	
(7) 2 Coll plats	A, B, C	per Surg. order			1 plat route A, 1 Sec route B. 1 sec route C
(8) 67th AR	D	Bivouac	12:00	Vicinity Lewis Store	
(9) Maj Hinds → CO A 82d Ren Bn	E	Present Pos.		generally S of	Order of march per CO
(10) Co B 17th Engr	E	Doyle	10:00	Shelbyville	Via Tenn 42
(11) 3d Bn 68th AR	E	do	10:00	do	Via Sparta, LV
(12) 2d Bn 14th FA	E	do	10:00	do	Crossv. at 8:00
(13) 2d Bn 41st Inf	E	do	10:00	do	follow serial (11)
(14) 1 Sec Coll Co	E	do	10:00	do	follow serial (12)
(15) 82d Ren Bn, less	—	Present Pos.			
(16) Fwd Ech DHQ	C	Bivouac	1:30	Woodbury	
(17) Div Tns	—	Present Pos	—	To be determined	as ordered after daylight
(18) 87th Engr Bn		With Div Tns.			

Official.
R W Grow, Lt. Col. GSC. - G-3

By Command of Major General PATTON
G. Keyes, Lt Col. GSC, Ch of Staff

Sketch C

"Column B, after marching some 130 miles, contacted the enemy near Fosterville at 6:20 AM and continued its attack through the morning.

"Column C captured its high ground objective at 8:45 AM after being engaged 2½ miles to the northwest at 7:25 AM.

"Column D was waiting in position at the termination of the exercise at 11:30 AM.

"Column E, a mixed force, you note, was at that time in and west of Shelbyville, having marched 96 miles and crossed the Duck River running east and west through that city." The colonel pushed away his coffee.

"That was the first of four problems," he said. "The empirical formula worked: Hold the enemy by the nose while you kick him in the pants. The Fifth Division did the nasal operation and the Second Armored did the rest.

"The question arose afterward as to whether the Second Armored had fulfilled its mission of 'driving the enemy west of Bell Buckle.' In answer, it was pointed out that the Blues had been completely surrounded, cut off and theoretically destroyed, and that missions are contingent on the means possible to impress your will on that of the enemy.

"There's no doubt about that battle. The Red will was imposed."

Reconnaissance Units

Training Test, 2d Armored Division*

EDITOR'S NOTE: *In a letter from Major Paul A. Disney, Cavalry, S-3 82d Rcn. Bn. (A), he stated that: "At the suggestion of Major I. D. White, Cavalry, Commanding the 82d Reconnaissance Battalion (A), I am inclosing herewith an article covering the recent test of reconnaissance units conducted by the 2d Armored Division. The test was similar to the Draper Trophy Test and is probably the first of its kind conducted by Armored Forces."*

It is believed that this test will be of great interest to all cavalry units.

IN compliance with a directive of the Commanding General, 2d Armored Division the 82d Reconnaissance Battalion (A), in coöperation with G-3, 2d Armored Division, conducted a test of training of the reconnaissance platoons of the 66th Armored Regiment (L), 67th Armored Regiment (M), 68th Armored Regiment (L) and the 41st Infantry (A), during the period July 28-30, 1941.

The directive announced the purpose of the test to be as follows:

"To test each reconnaissance platoon in a series of situations illustrative of what may be expected under normal operations; to determine the efficiency of the several platoons through the use of a scoring system. The tests will embrace reconnaissance of towns, routes, defiles, fords, and bridges, and terrain for use of combat elements; observation of hostile units; hostile encounters; establishing bridgehead; guiding troops; and self maintenance when operating alone.

To carry out the provisions of the directive, the test was drawn up to consist of twelve phases:

1. Preparation of Platoon for Test.
2. Route Reconnaissance (1).
3. Contact with Small Hostile Patrol.
4. Reconnaissance of Bridge.
5. Contact with Strong Hostile Force.
6. Reconnaissance of Town and Railroad Facilities.
7. Route Reconnaissance (2).
8. Observation of Distant Hostile Force.
9. Bivouac and Night March.
10. Road Block, Defended by Hostile Force.
11. Reconnaissance of Ford.
12. Reconnaissance of Hostile Defense Area.

Map A shows the routes of reconnaissance and bivouac areas assigned the first day and the locale of action pertaining to each phase.

A total of eight platoons competed. Starting at intervals of one hour four platoons began the test on the first day and the remaining four platoons started the second day. The duration of the test for each platoon was approximately 24 hours. Each platoon was commanded by an officer and included the normal personnel and equipment as prescribed for the unit. The platoons were in general organized with four scout cars and motorcycle complement with the exception of the platoon of the 41st Infantry (A) which was composed of three half-tracks and twelve motorcycles. Each platoon was equipped with radio and assigned a separate net for the purpose of making required reports. Supplies to be carried by each platoon were prescribed as follows:

(1) One Ration "C."
(2) Fuel: 150 Miles.
(3) Ammunition:
- 150 rounds caliber .30 blank per car, in belts for machine guns.
- 20 rounds caliber .30 blank per rifle.
- 20 Anti-tank mines per platoon. (Smoke type).
- 5 tear gas grenades per platoon.
- 5 smoke candles per platoon.

A platoon Umpire accompanied each platoon through the entire test. Officers in charge of hostile forces were also designated as umpires.

The test for each platoon began with the reporting of the Platoon Leader to Headquarters 82d Reconnaissance Battalion (A) for the orders which initiated movement of each platoon on its reconnaissance mission. Orders were issued as follows:

1. Situation:

a. Maps: Georgia Road Map; Base Map IV Corps Area Maneuvers.

b. General Situation. Blue (west) is at war with Red (east). The opposing armies confront each other generally along a north-south line extending north from BUTLER. Both sides are known to have Armored Forces which have not yet been engaged.

c. Special situation (Blue). 2d Armored Division from the vicinity of MEMPHIS is moving into the COLUMBUS area by rail and marching to be prepared for operations to the east. The "Xth" regiment has been assigned a bivouac area in the 2d Armored Division cantonment area where it is expected to complete its assembly by daylight tomorrow. In compliance with Division orders, the Regimental Commander prepared a plan for reconnaissance to be carried out during the assembly of the regiment and directed Lieutenant "A" to report for instructions.

*Courtesy, 82d Reconnaissance Battalion (A), Fort Benning, Ga.

2. Reconnaissance Instructions: (Sample)

ORGANIZATION—1st Platoon, 41st Infantry

DETACHMENT NO. 2 HOUR OF DEPARTURE 8:30 A.M.

ZONE BOUNDARIES (AREA, AXIS, OR ROUTE). South Boundary: Highway 280
North Boundary: Highway 103

OBJECTIVES:	TIME TO BE REACHED
1. BUENA VISTA	11:30 A.M.
2. BIVOUAC SOUTH OF RJ 482A	1:30 P. M.

AXIS OF MARCH: See Attached Map

AXIS OF SIG. COM. OF NEXT HIGHER UNIT: OPELIKA–FORT BENNING

PRIORITY	MISSIONS	REPORT Due Submitted
1.	Suitability of Route and Bridges for 41st Inf. on your Assigned Axis of March	As Obtained
1.	Strength, Composition, Movement, Location, Disposition of Enemy in Zone	As Obtained
2.	Condition of Bridge at RJ 643	As Obtained
3.	Railroad Facilities at BUENA VISTA	As Obtained

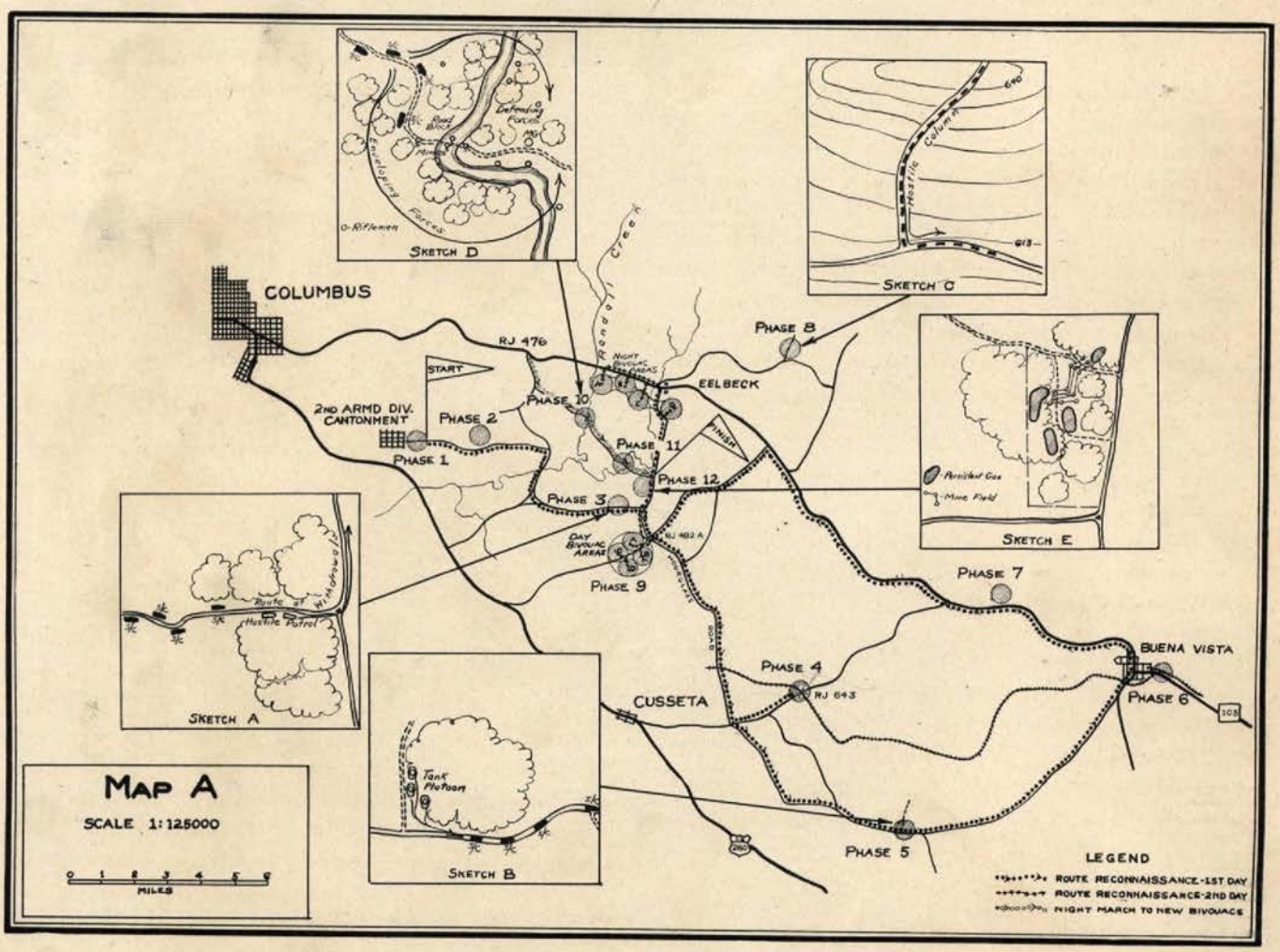
3. Map marked with route of reconnaissance for first day and bivouac area.

Phase I

Following the receipt of the above orders each Platoon Leader accompanied by the Platoon Umpire returned to his platoon where he was scored on the requirements of Phase I. In general the requirements of this phase were: that all members of the platoon were informed of the situation and mission of the platoon; that orders were issued clearly and concisely; that prescribed amounts of ammunition, gasoline, and rations were carried; that water jackets on all water-cooled machine guns were properly packed and filled with water; that all weapons were loaded prior to start of platoon on mission; that platoon cleared the IP at the designated time.

Phase II

This phase consisted of the reconnaissance of a route from FORT BENNING to BUENA VISTA supposedly to be used by the parent unit of each platoon competing. Cuts were assessed for failure to take up proper march formation; for failure to properly reconnoiter all bridges; for failure to reconnoiter side routes for short distances; for failure to submit to unit commander adequate reports on all sections of route and suitability of bridges.



PHASE III

Shortly after entering on the route assigned for reconnaissance, each platoon was met by a hostile scout car section which promptly withdrew along the platoon axis for a short distance and then moved off the axis of reconnaissance to the north.

Platoons were penalized for failure to initiate immediate pursuit; for failure to exercise proper precaution against being drawn into an ambush; for pursuing the hostile patrol more than one mile off the assigned route of reconnaissance. (See Sketch A included in Map A.)

PHASE IV

Each platoon was required to reconnoiter a bridge at a distance from the assigned route of reconnaissance. The bridge to be reconnoitered had been prepared for destruction by placing simulated blocks of TNT and wiring on stringers underneath bridge. Cuts were assessed for leaving the route of reconnaissance with the entire platoon to perform the reconnaissance of the bridge, for failure to discover the presence of the TNT, or failure to remove it; and for failure to report fact that bridge had been prepared for destruction. Cuts were assessed for failure to make initial reconnaissance of bridge by sending dismounted scouts under cover to bridge site, and for failure to cover movement of scouts by available platoon weapons.

PHASE V

A hostile force consisting of a combat car (tank) platoon was placed in a concealed position on a side road leading from the assigned route of reconnaissance. When all vehicles of the platoon had passed to the east, the tank platoon proceeded to attack from the rear. Platoons were cut for failure to discover the hostile force by reconnaissance of side road where concealment was effected; for failure to attempt escape by rapidly proceeding on route; for failure to use available tear gas grenades, smoke candles, or anti-tank mines to assist escape. (See Sketch B.)

PHASE VI

The reconnaissance of BUENA VISTA and obtaining information of railroad facilities required the following actions for credit: that a small element of the platoon be sent through the town for hasty reconnaissance prior to entry into town of the remainder of the platoon; that one or more cars cover the entrance of the advance element into the town; that other exits of town be outposted during reconnaissance of the town; that vehicular crews be alerted to fire on possible hostile snipers in upper-story windows; that report of rail facilities include number and length of sidings, loading platforms, ramps, and for what type of loading they were suitable.

PHASE VII

This phase was a continuation of the route reconnaissance originally assigned, and covered the route from BUENA VISTA to the bivouac area on the FORT BENNING RESERVATION. (See Map A.) Cuts were assessed as for Phase II.

PHASE VIII

A column of vehicles representing a strong hostile force was stationed on a plainly discernible road approximately two miles to the north of the assigned route of reconnaissance. By radio control the hostile column was placed in motion upon the approach of each reconnaissance platoon. Cuts were assessed for failure to observe the hostile force or to report its presence, giving strength, composition, and direction of movement. (See Sketch C.)

PHASE IX

Each platoon was assigned a bivouac area approximately a mile apart. As the platoons finished the reconnaissance mission assigned the first day they went into bivouac in area assigned. As soon as a platoon was established in bivouac the platoon umpire notified a control umpire, who, by use of radio, directed one of two available hostile scout car patrols to actively "reconnoiter" the platoon bivouac.

It was expected in each case that the platoon leader following discovery of his bivouac area by the hostile force, would decide to move the platoon to a new bivouac, preferably after dark. Cuts were assessed for failure to make this decision.

All platoons were required to execute a night march without lights to new bivouac areas, previously selected, and to which the platoon umpires directed the platoon leaders. Cuts were given for failure to establish outpost promptly; for failure to take precautions against air and ground observation; for failure to reconnoiter alternate routes out of bivouac area; for placing cars in poor positions for rapid movement out of bivouac; for any use of lights or fires; for unnecessary noise during entire phase.

Early the morning of the second day, each platoon moved at one hour intervals to RJ 476 where additional written orders were handed the platoon leaders as follows: "Strong Red Forces have secured the line: CUSSETA-EELBECK. Reconnoiter route for movement to attack positions by this Regiment as follows: RJ 476 —Ford reported between Randall Creek and Hourglass Road. Possible that regiment attacks over area indicated on map. Reconnoiter indicated area for indication of enemy defensive preparations and suitability for tank and infantry movement. Advance elements of Regiment now moving out from COLUMBUS."

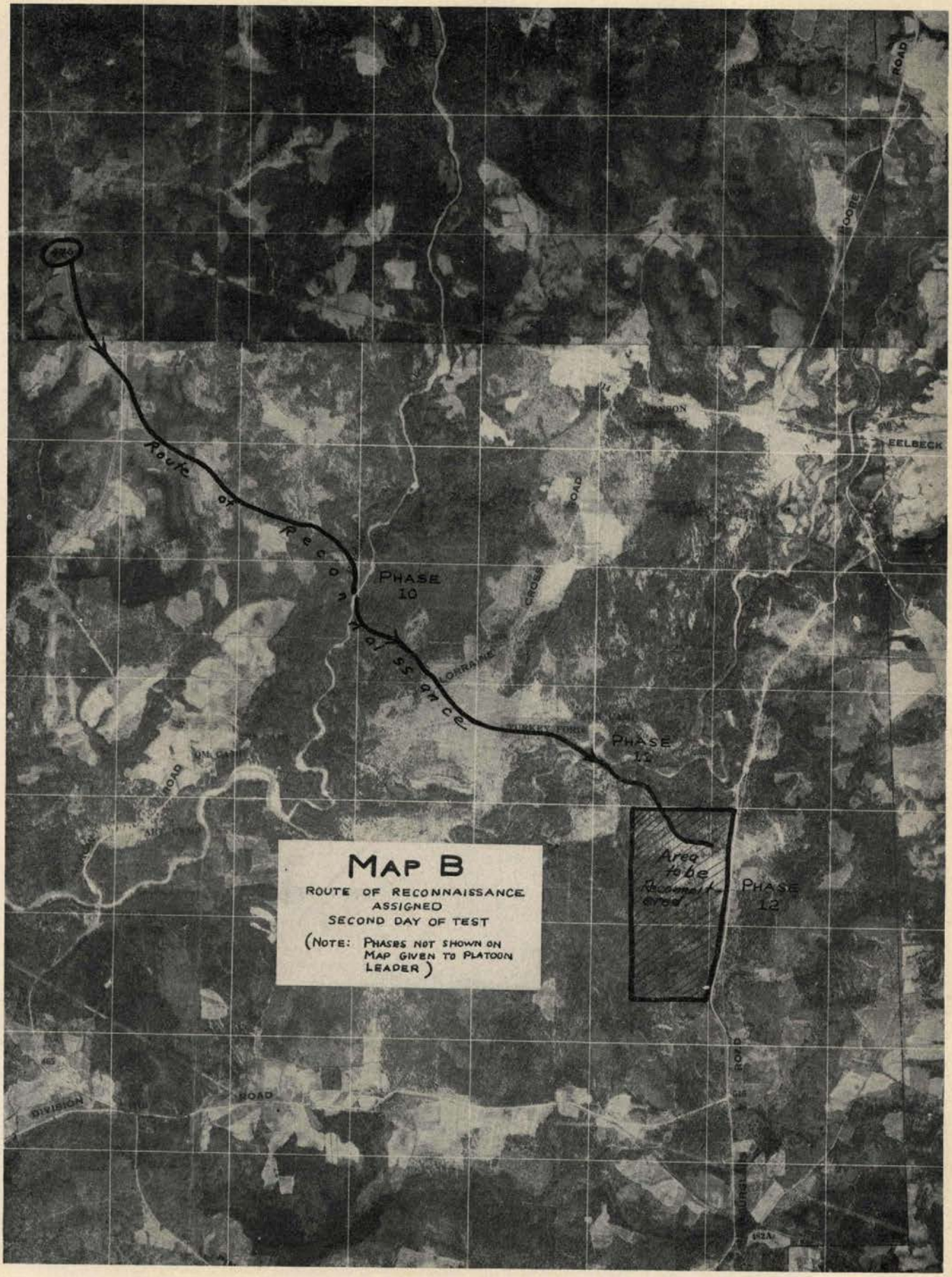
X

Commanding.

Each platoon leader received in addition to the above orders a marked section of an aerial photograph map showing route and area to be reconnoitered. (See Map B.)

PHASE X

Upon arrival at the ford over Randall Creek each


Route of Reconnaissance
PHASE 10
PHASE 11
PHASE 12
Area to be Reconnoitered
EELBECK
LORRAINE
ROAD
DIVISION
MAP B
ROUTE OF RECONNAISSANCE ASSIGNED SECOND DAY OF TEST
(NOTE: PHASES NOT SHOWN ON MAP GIVEN TO PLATOON LEADER)

platoon was confronted with a road block contaminated with simulated mustard gas and defended by a hostile force of one machine gun and a squad of riflemen. The approaches to the ford and the ford itself were seeded with anti-tank mines (smoke type). "Bands" of simulated mustard gas were placed on the flanks of the defending force. Hostile "grenadiers" lay in wait with tear gas grenades at point where platoons were expected to halt when road block was discovered. The correct action of the platoon in reducing the road block was considered to be by dismounted envelopment of one of both flanks of the hostile defending force, covering the movement of dismounted attackers by available machine guns in the platoon. Cuts were assessed for failure to halt platoon under cover on approaching defile; to make dismounted reconnaissance of the defile; to provide local protection (dismounted men) while platoon was halted; to resort to dismounted enveloping movement to dislodge defending force; to discover and remove antitank mines prior to passage of platoon through the ford; to discover the presence of the simulated mustard gas prior to contamination of personnel; to properly sight and lay guns on targets; to complete the entire action within thirty minutes (See Sketch D).

Phase XI

Action at Turkey Ford required that a small "bridgehead" be established by the Platoon Leader during reconnaissance of the ford and that the best route through the ford be staked out (or guide stationed at ford) to indicate to the regiment the proper path for crossing. As in Phase III and Phase X cuts were assessed for failure to make initial reconnaissance using dismounted scouts, covering their approach to the "defile" by fire of available weapons.

Phase XII

The area indicated for reconnaissance by each platoon was considered to be in front of a hostile defensive position. The mission of reconnaissance of the area required a detailed dismounted inspection of the ground to discover mined area and trip wire connecting personnel mines. Several areas were contaminated with simulated mustard gas. Cuts were assessed for failure to discover any of the above installations or to report fact that area was unsuitable for movement of tanks or dismounted troops until hostile installations were removed. Platoon Leaders were cut for failure to send back guides to conduct the regiment over the assigned route. (See Sketch E.)

Comments

The tests as conducted emphasized the fact to all ranks participating that reconnaissance conducted properly is a slow, laborious process, even though conducted in vehicles capable of rapid movement, and that detailed reconnaissance cannot be conducted at 40 or 50 miles per hour. Defiles, lending themselves to use by the enemy for the establishment of road blocks (using mines—preparing bridges for destruction or weakening bridges by demolitions) must be reconnoitered by dismounted elements prior to passage of vehicles. Only in this manner can almost certain and continuing loss of leading vehicles be prevented or accurate information be obtained.

All personnel must be trained in fundamentals of scouting and patrolling. The conduct of reconnaissance by armored reconnaissance units does not differ materially from methods established for cavalry and infantry reconnaissance patrols. Although dismounted reconnaissance of critical points must tend to slow the armored reconnaissance unit, this may be counteracted in part by taking advantage of speed of the vehicles to move rapidly from one critical point to the next.

In order to perform reconnaissance properly, reconnaissance detachments must be given an adequate time-lead in advance of the unit for which reconnaissance is being performed.

The 3rd Platoon 66th Armored Regiment received the highest score of all the platoons competing. This platoon was commanded by 1st Lt. John Tyler, Cavalry, 66th Armored Regiment (L) until the 5th Phase when he was injured by a tear gas grenade and evacuated to Fort Benning. The platoon was conducted through the remainder of the test by Sergeant Jack Bradner, 66th Armored Regiment (L) who deserves special commendation for his excellent handling of the platoon. The fact that the Platoon Sergeant was able to carry out the assignment so satisfactorily illustrates vividly the necessity of thoroughly informing all ranks of the situation and mission—forging strongly each link in the chain of command.

". . . It (surprise) lies more or less at the foundation of all undertakings, for without it the preponderance at the decisive point is not properly conceivable.

". . . Secrecy and rapidity are the two factors of this product; and these suppose in the government and the commander-in-chief great energy, and on the part of the army a high sense of military duty. . . ."

—CLAUSEWITZ—Surprise and Speed. From: *On War.*

Corps Reconnaissance Units

By Colonel Woods King, 107th Cavalry

THE mechanized elements of the 107th Cavalry were most fortunate in having the opportunity of participating in the recent maneuvers of the VII Army Corps held in Tennessee.

Although the regiment had not completed its thirteen weeks' basic training and was considerably lacking in equipment, a great deal of benefit and experience was gained. The necessity and reason for basic training was clearly shown which is sometimes questioned in the minds of beginners.

The first two exercises in which the regiment participated were primarily for the purpose of making the infantry divisions conscious of mechanization. This was accomplished by slipping through advance elements and harassing both advancing columns and rear installations.

The desired result was evident in that anti-mechanization defense was considerably improved toward the end of the exercises.

In the rest of the maneuvers the regiment was employed primarily on reconnaissance and screening and delaying missions. Most missions were considered normal. However the screening or covering missions resulted in some confusion because the unit to be covered left their bivouac at the same time as the covering unit. Both being in approximately the same vicinity at the start, with the rear unit moving at the same or faster speed, the result was the rear units piled up on the covering force or screening detachment and even ran through them.

It seemed quite evident that division and combat team commanders did not fully understand the use, capabilities and limitations of the reconnaissance units. Time was considered an important factor but divisions would have suffered heavy losses in actual warfare had they followed the covering force so closely.

The general impression was that scout car platoons were believed to be for the purpose of a flying point, to travel as fast as possible with no reconnaissance, as an advanced advance guard until stopped by enemy fire.

This error has, it is hoped, been corrected and all have benefitted by their mistakes.

Conclusions

There are several things which it is thought might improve the usefulness of the reconnaissance regiment and permit it more effectively and rapidly to accomplish its missions.

It is believed that the regiment should have more antitank guns and that these guns should be on self-propelled mounts—not trailed; the guns to be of effective size.

It is also thought the regiment should have some mobile armored force capable of brushing aside small resistance and breaking through counter reconnaissance screens. This would save a great deal of time, replacing the use of mounted or foot troops necessary at present.

Considerable trouble was had with motorcycles—particularly side cars breaking down. An emergency bracket to carry disabled solos on the rear of a scout car was devised. This also came in handy in crossing streams too deep for these vehicles. A command post tent, light and waterproof that is easy to erect, take down and carry, was made. Inasmuch as the regiment had but five radios, considerable use was made of field phones for tapping wires to send messages. Communication from horse patrols and within mounted units would be facilitated materially by the use of small radios.

In connection with weapons it is thought that the light machine gun is better suited for the scout car than the water-cooled gun in that it takes too many men to carry and handle the heavy gun in dismounted action. With six men per car, only one heavy gun can be used while two light guns could be used with the same sized crew. It is also thought that armament of trucks and portée vehicles of this regiment is of vital importance.

It would seem desirable to arm all chauffeurs with the M-1 rifle and to replace the submachine guns of all motorcyclists with this rifle retaining one submachine gun in each scout car.

Many essential items such as racks for extra gasoline containers, kitchen truck cupboards, etc., now necessary for each unit to construct on its own could be included in the original specifications it would seem.

The experience gained in the maneuvers was immensely valuable and the regiment is doubly grateful to the 6th Cavalry for its generous assistance and coöperation, and especially for loaning some of their radio cars for the first two exercises.

★ ★ ★

Get your principles right—the rest is a mere matter of detail.

—Napoleon.

Medical Aid, Cavalry Regiment

(H & M)

*By Lieutenant Russell W. Hibbert, Jr., Medical Corps**

MEDICAL aid, in the field, is a great concern of every unit commander. The application of proper first aid as rapidly as possible, means much toward protection and conservation of the strength of the command. The efficient performance of a Medical Detachment in administering medical aid depends largely upon study of the various functions of the unit to which it is attached, and upon an analysis to determine where most casualties would occur, and what medical aid would be possible under given circumstances.

The cavalry regiment (horse-mechanized) is that cavalry which is attached to, or is an organic part of, the Infantry Corps. The normal mission of this regiment is to gather information upon which the Corps Commander may base tactical dispositions and maneuvers. The normal types of action or principal employments of a regiment of this kind are reconnaissance, counterreconnaissance, and the furnishing of security.

In performance of their missions however, the following special types of action may be undertaken: delaying action, seizure of terrain features, pursuit of the enemy, covering a withdrawal from action, retirement, escorts, and other offensive and defensive operations. It is readily seen that the many diversified requirements of a reconnaissance regiment present equally as many problems to the Medical Detachment attached to it. Dispersed troops employed on several missions at one time, traveling from one locality to another as rapidly as the speed of vehicles will permit, engaging enemy forces within a wide area, leave the "Medics" to pursue their object in the best way possible. Surprise encounters are not chosen with an advantage location. Skirmishes, ambuscades, and blockades produce casualties but do not halt the movement. Medical aid men who stop too long are very likely to be left behind with the casualty. The problem of administering treatment to the injured as soon as possible, where they occur, can best be called "medical aid on the run."

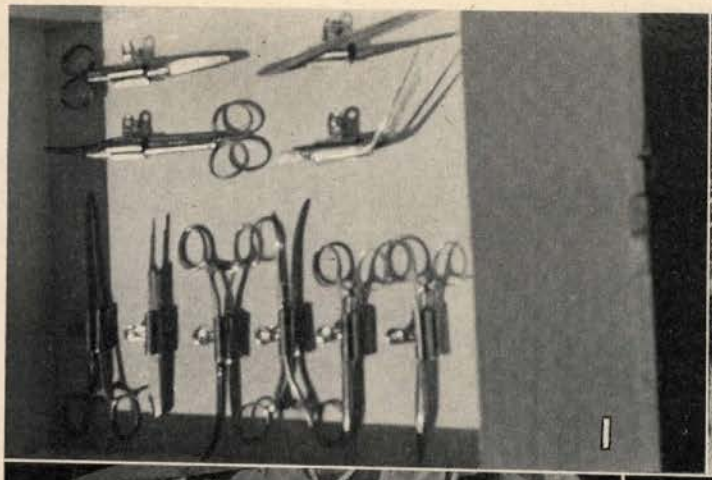
To cope with these situations the Medical Detachment, 4th Cavalry, has constructed a portable mobile aid station in an effort to lend the Medical Detachment the versatility of the regiment itself. Its practicability is being proven in the field. The mobile aid station as pictured is a light, inexpensive, simply-constructed-and-equipped panel on which is secured the essential medical aid material. This panel is easily transferred from one vehicle to another, and easily set up at a convenient station. It solves the problem of speed, and speed is the vital factor of the 4th Cavalry. Mobility does not permit burdensome equipment, nor does time permit elaborate preparation of aid stations.

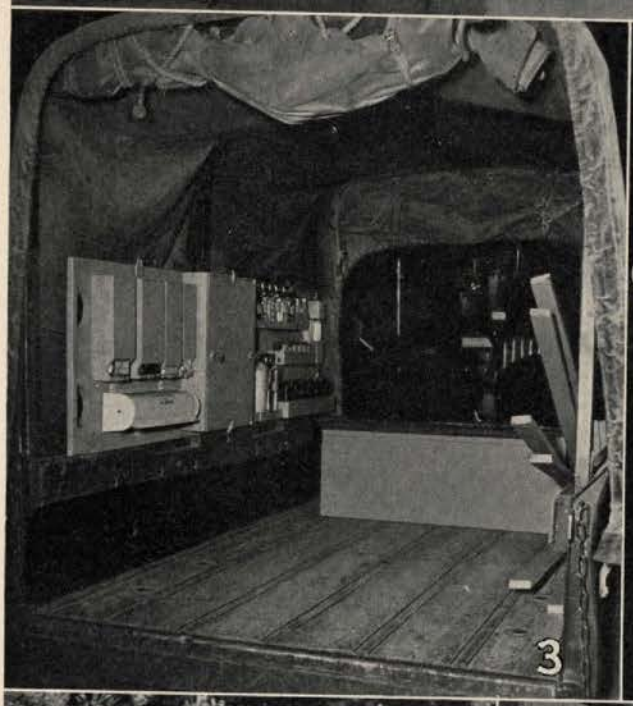
The mobile aid station as it has been constructed consists of a backboard made of two pieces of one inch white pine, ten inches wide and six feet long, upon which has been super-imposed small wooden dispensing boxes which hold the varying size rolls of gauze and packages of cotton, small compartments for carrying cans and tubes of medicine, small racks with spring steel attachments for holding bottles of medicine in place, and a box twenty inches by sixteen inches for carrying instruments. These instruments are held in place by small spring paper clips.

This unit has proven very satisfactory for employment on marches of the regiment and employment with the mechanized squadron on tactical maneuvers. With this mobile aid station, either in the ambulance or in a one-half ton truck, the Medical Detachment can go forward, treat and evacuate the wounded or even treat the wounded during the process of evacuation; then withdraw to the squadron aid station from which the wounded may be evacuated to the Regimental Aid Station, for more thorough diagnosis and treatment, before further evacuation by the collecting company of the next higher unit to which the regiment is attached.

At the Squadron Headquarters, which is in the vicinity of the Squadron Aid Station, the Medical Officer can await communication regarding other contacts and casualties which might occur over a front of many miles. This method of evacuation and treatment combined with that which is capable of being rendered by the troop aid men, has partially solved the Medical Aid Problem of a rapidly moving mechanized cavalry unit spread over a wide front.

*Regimental Surgeon, Fourth Cavalry.





1—Interior of the instrument case showing how the instruments are held in place. 2—This shows how easily the mobile unit can be manipulated, in the transfer from truck or ambulance to a stationary installation. 3—Mobile aid station as carried in a one-half ton pickup truck. The easel used in an aid station setup, is on the right and a box carrying all the remaining material necessary for a complete setup is seen in the front of the truck. 4—Mobile aid station, as carried in the ambulance with open litter in place. Viewed from the front. 5—Aid station setup when the easels and mobile unit are used. 6—Mobile aid station fixed in the ambulance, in use, for a hand injury. Viewed from the rear.

New Bus-Type Ambulance

Initial Tactical Experiments

*By Lieutenant Colonel Charles B. Daugherty, M. C.**

COLONEL DABNEY, Director of the Equipment Laboratory, Carlisle Barracks, developed a bus-type ambulance—26′ 8″ from bumper to bumper, 7′ 10″ wide and 7′ 6″ from ground to roof—capable of a 3,000 pound load which could be utilized for 12 litter or 20 sitting cases of any required combination. The possibilities for the use of the vehicle were numerous. Originally it was felt that it would be first tried for the evacuation of front line or coastal hospitals to installations of greater safety in the interior. It may be used as a mobile surgical hospital or for rapid movement of hospital personnel such as surgical teams to more urgent areas (it is capable of holding four surgical teams and their equipment). It was then felt that it might find some use as a mobile clearing station for highly mechanized troops who operate over wide areas. For tactical test of this type the bus was assigned, after sufficient road tests at Carlisle Barracks, to the 104th Cavalry (Horse-Mechanized) for tactical exercises in summer and fall maneuvers.

1—Treating patients. 2—Loading the patient. Loading platform is only 20 inches from ground. 3—Continuing treatment during evacuation.

The plan for the use of this ambulance in the 104th Cavalry is as a mobile clearing station. The bus as originally delivered, for twelve litters on racks with side seats that could be folded down when the litters were not in place and an additional seat on each side for two sitting cases, was changed only by omitting the two lower litters at the right-rear and placing a number one and two medical chest in their place. A privately owned small oxygen tank was added. The ambulance was then capable of carrying ten litter cases and two sitting cases in addition to the medical personnel, or any combination of litter and sitting cases up to the 3,000 pound capacity. The bus is well ventilated and contains a fan-operated heating unit.

The power unit is a commercial Mercury Motor at the front with front wheel drive and is sufficient to operate with a truck column. Though this ambulance has a rear clearance of only twenty inches and is thus necessarily road-bound it is yet very convenient for loading or working from the rear entrance.

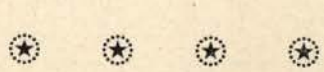
The bus-type ambulance could be kept with the motor element and the two Dodge ambulances, which are ideal cross-country vehicles, could be used for evacuating the Squadron Aid Stations to the bus-ambulance where patients may be comfortably transported and given some additional treatment prior to their arrival at a hospital or evacuation by Corps Medical Battalion. The importance of this intermediate unit is that mechanized cavalry, having as its vehicles, horses, motorcycles and scout cars, does not possess any transportation for even moderately sick or wounded soldiers. Without

*Surgeon, 104th Cavalry (H-M), Indiantown Gap Military Reservation, Pennsylvania.

1—Bus-type ambulance with normal clearing station crew: driver, medical officer, and medical and surgical technicians. 2—Comparative length of bus-type ambulance and Dodge ambulance. 3—Cross-country ambulance feeding bus-type ambulance as mobile clearing station. 4—Ambulance as aid station.

this intermediate section the cross-country Dodge ambulances would be greatly handicapped in their ability to follow troops. Illustrations are appended to give proper interpretation of the size of the ambulance and the method of its employment by the cavalry regiment. It is superior transportation from the standpoint of comfort and ability to treat shock cases early. To date the motorcycle troops have contributed most of the injuries, invariably fractures associated with numerous brush burns and in many cases considerable shock and hemorrhage.

The ambulance carries a crew of four—driver, Medical Officer, one surgical and one medical technician. Treatment begins as soon as the patient is transferred from the cross-country ambulance and is continued until the patient arrives at a station for definite treatment. The use of the ambulance has proven all its contentions as a mobile clearing station, although the regiment has been on only minor maneuvers to this date. It is anticipated that a much more comprehensive test will be possible during the fall maneuvers in the Carolinas. A proper and complete report will be given on its use through medical channels. This report is preliminary in every detail, and is only intended to stimulate interest in early tactical tests of an experimental vehicle.



"Of what value is experience if it is not associated with meditation? . . . It is only by associating mentality with work that man differs from the beast of burden. The ass, that carried Prince Eugene's pack saddle for ten years, did not thereby become a better tactician."

—FREDERICK THE GREAT.

Distant Officer's Patrols

(Radio Equipped)

By Lieutenant Harry J. Davis, 6th Cavalry*

The 6th Cavalry (H-M), a Reconnaissance Regiment, is continually striving to discover newer and better methods of obtaining complete information and getting it back quickly.

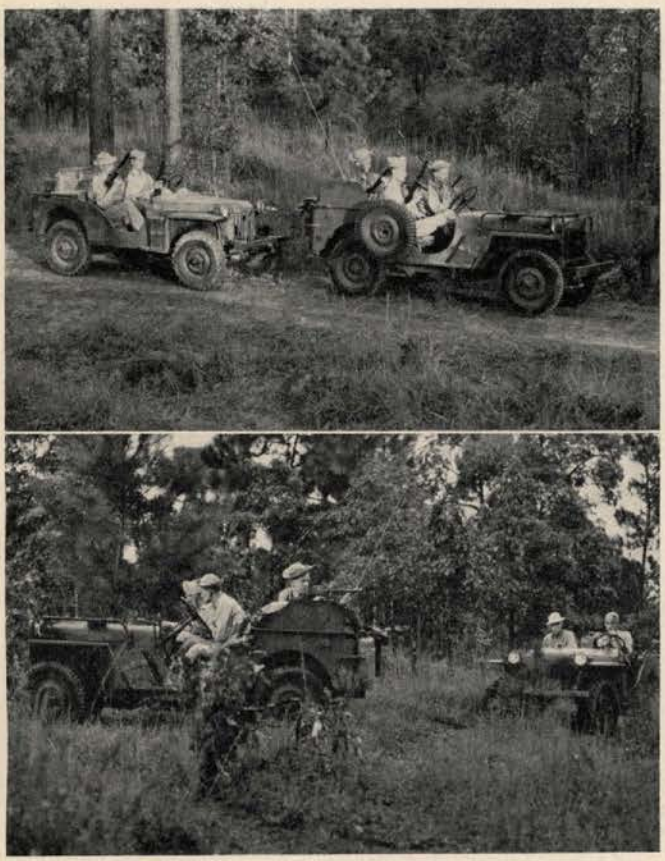
We are now experimenting with two types of distant reconnaissance patrols. These are producing fine results. The composition and operation of these patrols is being tested in various combinations in an attempt to find their capabilities and limitations. By knowing what each patrol can or cannot do we shall know when to employ them. We have at our disposal bantam, horse, and scout car patrols, each radio equipped.

The two general types of distant patrols are: Bantam Patrols; Horse Patrols.

1. *OFFICER'S BANTAM PATROL.* (Two bantams, one radio, five men.)

After extensive and intensive experiment we have found the Bantam car a valuable asset in assisting in the most important function of this Regiment; that of reconnaissance.

*Assistant S-3.



Bantam patrols

Ideal reconnaissance locates the enemy in the minimum of time, once contact is made, maintains surveillance of the enemy so that his strength, composition, dispositions, and movements can be reported promptly.

The bantam can be remuneratively employed on distant officer's patrols. The method is to slip behind the enemy lines to the very heart of his dispositions, to watch his actions. The bantams are worked into and behind the enemy reconnaissance and security forces to his main forces. They furnish transportation and communication. The 6th Cavalry is now experimenting by employing three complete bantam patrols at the same time. For example, two patrols may circle the enemy flanks while one filters through the center.

In each bantam patrol two cars were used. The following equipment was found to be very satisfactory:

a. 1 Bantam (equipped with SCR 245 radio)
- 9 Extra gallons of gasoline (2 gallons each, carried in 2 extra gas containers made to fit the space on the running board flush against the front fender, and 5 gallons each carried in 2 cans in second Bantam. Range thus is about 300-350 miles. More gasoline can be carried by lashing additional cans on the rear bumper).
- 1 Gallon Motor Oil (Oil must be drained and new put in if water gets into crankcase while crossing stream).
- 1 Spare tire and innertube.
- 1 Tire repair kit.
- 1 Radio repair kit.
- 1 Hand axe.
- 2 Practice mines (to be used when pursued by enemy).
- 1 Machete.
- 1 Sterno stove and empty No. 10 can (for cooking and boiling drinking water and messkit rinsing water).

b. 1 Bantam (not radio equipped).
- 9 Extra gallons of gasoline.
- 1 Gallon Motor Oil.
- 1 Spare tire and innertube.
- 1 Tire repair kit.
- 1 Auto mechanics outfit consisting of files, points, fuses, flashlight and batteries.
- 1 Infantry entrenching tool, or shovel.
- 1 Axe.
- 1 Canvas boat (see article on this boat made from a canvas cot in the July-August issue).

1 100 foot length of ½-inch rope or tow cable.
1 Sterno stove.
2 Practice mines.

Personnel of the two-car patrol is:
Radio equipped car:
1 Officer.
1 Driver (Relief radio operator).
1 Radio operator.
For non-radio equipped car:
1 Scout (noncommissioned officer).
1 Driver (Mechanic).

The arms and ammunition carried are:
3 Thompson sub-machine guns with six drums of fifty rounds each. Two guns carried in first bantam.
4 Antitank or road mines (two in each bantam).
5 Pistols, automatic cal. .45. Each member of patrol armed with pistol.
1 M1 Rifle with 88 rounds (in second bantam).

The personal equipment carried for each officer and enlisted man is:
1 Canvas field bag.
1 Change of underclothing.
1 Extra pair of socks.
1 Head net.
1 Pair goggles.
Toilet articles.
Officer's tactical equipment is:
Dispatch case with maps, template, message books, radio code and Signal Operating Instructions (must be destroyed before capture) and a supply of overlay paper.
Twine and wire.
1 Compass.
1 Field glasses.

Each car is equipped with an emergency identification panel (which gives one set per patrol for use with friendly aircraft), one first-aid kit for snake bites, one box of matches in watertight container or bag, one sterno stove, alcohol and iodine.

Rations sufficient for five days:
1 Lb. Coffee.
1 Lb. Sugar.
1 Can opener.
2 Loaves field bread or equivalent in hard biscuits.
5 Boxes dried fruit.
5 Bars chocolate (bitter sweet).
5 Cans Pork and Beans.
5 Cans Vienna sausage.
1 Can dried beef.
2 Days' supply of Type C rations for five men.

A patrol thus equipped can stay out for five days. This allows it to maintain contact with the enemy and to continue its mission without losing contact throughout any normal operation.

This patrol operates by slipping through or swinging wide around the enemy's forward security elements. It works its way to a position where the enemy main body can be observed by dismounted scouts working carefully to a point or points where they can observe clearly. The driver, with the radio operator, provides security for the cars. The tommy guns are very suitable for the close-in work required of the patrol, as they can be put into action quickly and are murderous at the to-be-expected close range. The officer and scout make their observations. The information obtained is taken to the concealed bantam which transmits the information back to the Regiment by radio. Contact once made is maintained. Observation is continuous. Thus, accurate and vital information of the enemy gets back to the friendly troops in the minimum of time.

Should one car become stuck on bad roads or cross country the other car can pull it out. Also, five men can perform any necessary pioneer work without undue fatigue and consequent lessening of efficiency.

Bivouacs must be very carefully selected to avoid observation or surprise. Previously selected exits should be noted. Strict light and noise discipline must be maintained. It is well to begin the guard with the chief radio operator so as to give him maximum rest. Each man in the patrol, including the officer stands guard.

Dismounted patrols only should be made when in close proximity to the enemy because of the noise made by the car, the problem of concealment while moving, and the vulnerability to ambush of the bantam, especially at night. Frequent changes in location may be forced by the enemy.

Care must be taken by occasional circling and observing to see that the enemy is not tracking the patrol cross country.

The radio operator should be both a radio mechanic and an operator in order to handle his radio set under the adverse conditions which the patrol will generally encounter.

A patrol of this nature requires men of intelligence, resourcefulness, and thorough training, especially in all phases of scouting and patrolling. All must be familiar with the compass, map-reading and orientation by Celestial bodies at night. Inasmuch as this patrol requires complete coöperation by all concerned for successful operation, the personnel should be accustomed to working together.

The radio set in the bantam is the type SCR 245. This set has a range of approximately forty miles on CW and twenty miles with voice, using the vertical antenna. By using a horizontal antenna (a 55-foot length of wire with ropes thrown over trees), the range is increased to from 55 to 65 miles on CW and from 25 to 35 miles on voice under good weather conditions. During the winter months with no static this set has successfully worked CW as far as 300 miles with the horizontal antenna.

Bantam patrols can relay, through the reconnaissance elements following them, information obtained. Also,

Horse patrols

the relay system may be necessary because of distance, radio interference, dead spots, etc.

2. *OFFICER'S HORSE PATROL:*

There will be many instances, when, to accomplish the mission of reconnaissance it is impractical to use motor vehicles. This is particularly true when the bridges and fords across a river or other obstacle, are held by the enemy. When gaining the desired information requires cross country movement, the horse patrol, radio equipped, is the answer.

The horse patrol filters through the hostile security forces avoiding close contact with the enemy until it is close enough to the enemy main forces to observe.

The recommended personnel and horses for a five-day distant patrol is:

1 Officer	1 Horse
2 Scouts (NCO's)	2 Horses
1 Pack Driver	2 Horses
1 Radio Operator (Sgt)	1 Horse
1 Assistant Operator	1 Horse
1 Pack Driver (radio)	2 Horses
1 Horse holder, etc.	1 Horse

TOTAL, eight men, ten horses.

The equipment for each man is:

1 Shelter half (No tent pins or poles—use trees).
1 Blanket.
If needed, four mosquito bars can be carried in the patrol—giving one per two men.
6 Type C rations in cantle rolls.
4 Type C rations in saddle bags (Use these first).
1 Change underclothing.
1 Pair socks.
Toilet articles.
1 Head net.
1 Grooming equipment.
2 Fitted shoes and nails.
Two lariats carried in the patrol.
No steel helmets.

In addition to the above the officer carries dispatch case with maps, template, message books, overlay paper, compass, field glasses, flashlight, snake bite kit, alcohol and iodine and matches in a waterproof container.

The NCO's carry in addition, field glasses, compass, flashlight, wire cutters (1 NCO Scout and Sergeant Radio one pair each). One NCO carries shoeing hammer, pliers and knife.

One pack driver and the horseholder each carry a machete (total two for the patrol).

Two sterno stoves are carried (one by the assistant radio operator and one by the radio pack driver).

The officer carries in addition the Regimental Code and the Signal Operation Instructions.

Five days' grain for ten horses is carried as follows:

2 days' grain for each horse packed on saddle (except pack horses).
3 days' grain for eight horses } On pack horses
5 days' grain for two pack horses } by lashing.
(Use small sack inside outer sacks to save spilling if snagged.)

Total weight of grain carried is:
On riding horses, 8 horses x 6 lbs. x 2 days = 96 lbs. (distributed over 8 horses).
On pack horse: 8 horses x 6 lbs. x 3 days = 144 lbs. and 2 horses x 6 lbs. x 5 days = 60 lbs.

Total of 204 lbs. carried on one pack horse (radio carried on other pack horse). This grain carried in two sacks of 102 lbs. each on the pack horse. (Small sacks should be used inside the two large sacks to prevent spilling if the outside sack is snagged while going through wooded country.) This horse ration must be supplemented by grazing and locally procured grain.

One empty No. 10 can is carried on top of the grain pack for the purpose of boiling water.

Use the grain on the pack horse first to lighten his load. Keep two full grain bags on each riding horse.

Care must be taken that the bivouac is close to water and under good overhead cover.

A small horse patrol can swim a river at some unguarded spot where the enemy considers it impassable because of deep water, bad approaches, etc., or slip through the enemy forward lines through rough, thickly wooded or swampy ground. By a careful advance, avoiding roads, the patrol can work its way forward close to the hostile main body. Then, by working forward, the officer and his scouts can get near enough to the enemy to watch his movements. The information is sent to the radio pack set, which then transmits the messages back to Regimental Headquarters.

The men selected for the patrol must be intelligent, strong, resourceful, and be well schooled in scouting and patrolling.

If a good observation post is found for a sentinel only one man will usually be necessary on duty while in bivouac. This sentinel must be far enough away from the horses to be able to hear any other noises and near enough to keep the horses quiet if they should get restless. Only horses that are strong and well behaved should be taken. Those that neigh, kick or bite or have too many ideas of their own must be left behind.

The radio used is the pack set, SCR 203. The effective range of this set is about fourteen miles using CW and five miles using voice. Reports should be made only when information has been obtained; or, if a report schedule is used, reports not more often than every three hours, as a schedule calling for more frequent reports will slow the patrol.

Should the situation require a horse patrol to be sent out to commence its reconnaissance at a point some distance from its present location, it can be sent portée, protected by scout cars to the desired vicinity. There it dismounts and begins its reconnaissance across country. The trailers and scout cars can return to their initial areas.

Combinations can be made with the patrols. For example, the horse patrol can be accompanied by a radio bantam. The bantam is left at a safe place and the horse patrol moves on. Messages are sent to the bantam by mounted messenger, the bantam radios the message back to the Command Post. Thus the information gets back to Command Post in a minimum of time and the personnel of the patrol is never materially weakened.

Summary

To summarize; both type patrols have the same mission: to gain close contact with the enemy main body, observe, and get information back quickly. This means getting through or around the enemy forward detachments.

It is ideal to have air observation and air-ground communication.

Patrols can get reports from civilians concerning enemy forces, particularly when operating in friendly territory. These reports must be evaluated. Remember also that the civilian, under stress, is likely to give the enemy information about you.

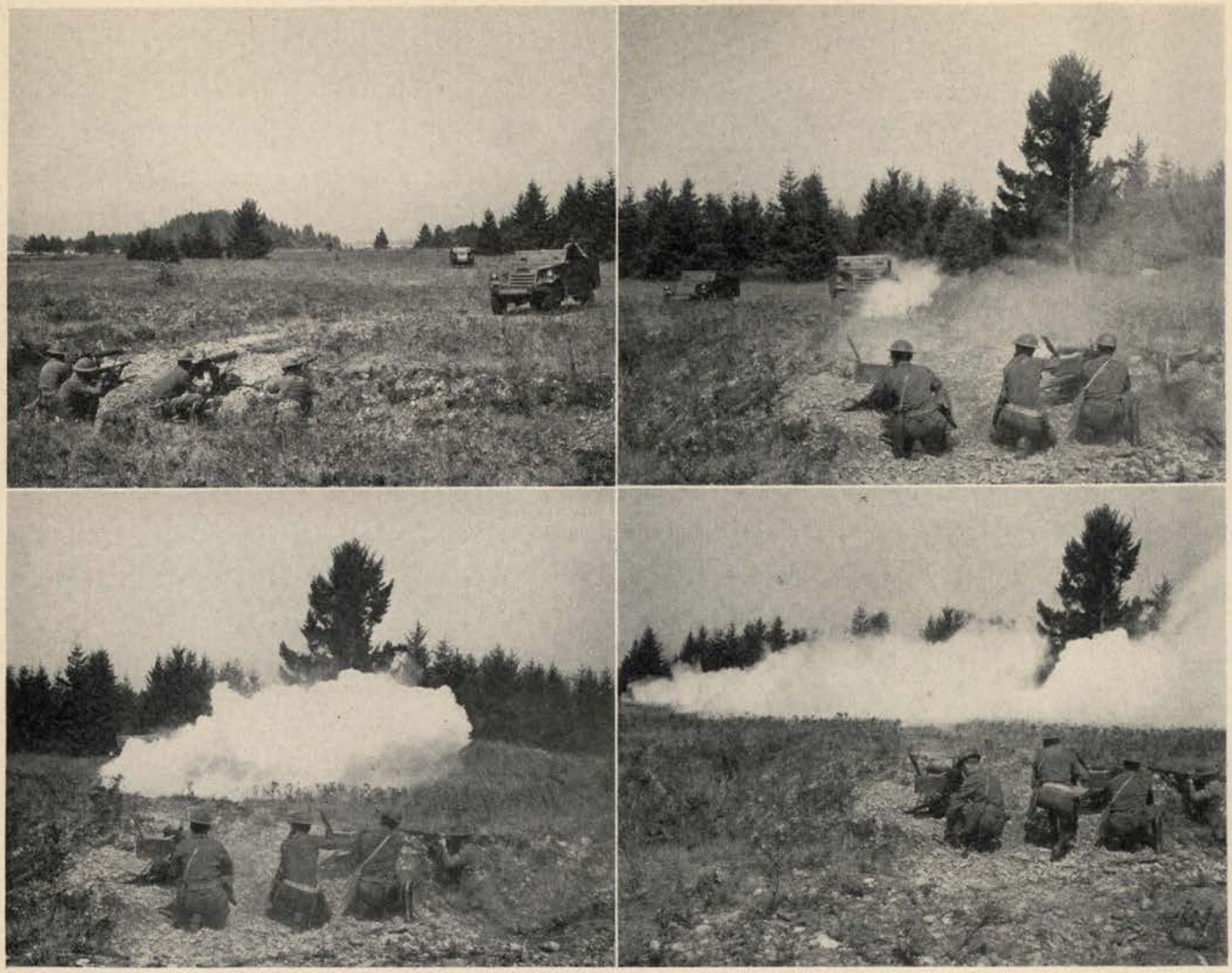
Radio speakers should not be used because of the noise. Use headphones. Calls from the patrols should get through immediately, as the possibility of detection or capture by the enemy before a scheduled report can be made, is great.

There will be losses on these patrols but the information that can be obtained by them is worth the expenditure.

In effect the patrols as organized in this Regiment are merely an adaptation of the old "Distant Officers' Patrol." They are self contained units capable of operating for five days without resupply from the Regiment. They have the transportation, communication, maintenance, and subsistence necessary to allow them to operate at great distance from the Regiment. They avoid enemy reconnaissance and security forces, locate the hostile main force, and hang on. Stealth is their principal method. "Peek and sneak" as we say. They must get the information and they must GET IT BACK IN TIME.

"Modern conditions of military action demand . . . constantly increasing technical skill from fighting men. The equipment, which the force of events has introduced into the ranks, demands the gift, the taste, the habit of serving it. This is a consequence of evolution, ineluctable in the same way as the disappearance of candles or the end of sundials. The era of picked soldiers and selected crews has arrived."

—GENERAL CHARLES DE GAULLE, in 1934;
Toward a Professional Army.



Smoke for Protection

By Major Harry W. Miller, Cavalry*

AN analysis of the combat losses of armored reconnaissance vehicles of foreign warring armies would no doubt bring out the very pertinent fact that an overwhelmingly large percentage of these losses were due to action of hostile antitank weapons. As more and more emphasis is placed on antitank defense, and as improved antitank weapons are becoming available in large quantities, we may expect as high, or an even higher percentage of losses in our reconnaissance units. The fact exists, and should be of paramount importance to reconnaissance units, particularly, that these damages due to antitank weapons will become increasingly large unless preventive measures are taken.

One of the preventive measures that can be taken to minimize or reduce the loss of vehicles due to antitank gun fire, without the loss of tactical mobility, is the use of a screening smoke.

Experience has positively proven that the use of smoke is of great importance in reducing the effectiveness of aimed fire. The degree, by which aimed fire is hindered by screening smoke, depends primarily upon the location of the smoke in relation to the firers, and to the target.

When the firing personnel is enveloped in smoke, aimed fire is least effective. Obviously, while in a smoke cloud, the individual or gun crew loses, to a great extent, the ability to maintain directions and elevations while firing. Difficulties of control are also experienced in this instance. (However, the only means in use at present, for a reconnaissance unit which is fired upon to place smoke upon the firer, is by the use of artillery

*Commanding 3d Rcn. Tr., Fort Lewis, Washington.

fire or mortars, neither of which will probably be on hand or available).

The effectiveness of aimed fire is also hampered by smoke when the smoke is placed on the target. Exhaustive tests conducted, from time to time, by several branches of the service, have decisively indicated that the percentage of hits obtained when the target is obscured in smoke is only about one-fourth of the hits realized when the target is not smoked. This very rapid diminution of hits is, from the reconnaissance unit's view, well worth seeking.

The Chemical Warfare Service has developed F. S., a mixture of sulphur trioxide and chlorsulfonic acid. This mixture or compound when atomized or vaporized produces minute droplets which reflect light rays and gives the vapors the appearance of a cloud of smoke, with the resultant screening properties. F. S. is a nontoxic chemical agent and is not harmful in the concentrations normally attained in the field.

A device to immediately and completely cover the leading car of a reconnaissance element with a screen of smoke so that it and the following cars may withdraw in safety has been developed by the writer. Tests indicate that it will prove practical in the field. It consists essentially of the Chemical Portable Cylinder M I A I, about ten feet of three-quarter inch water pipe, unions, and a Nozzle M I.

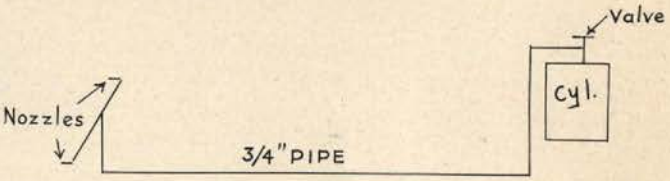
The Portable Cylinder M I A I and the Nozzle M I are standard items procurable from the Post Chemical Officer. The water pipe and fittings are, more or less, easily obtained from the Post Utilities. The installation can be made by unit mechanics in about two hours time.

The screening smoke used is F. S. This mixture is carried in the cylinder under one hundred and fifty pounds of pressure per square inch. The approximate thirty pounds of liquid F. S. in the cylinder will make a sufficient quantity of smoke to produce smoke clouds for probably eight or ten enemy contacts.

The cylinder is mounted in a tin lined box in the foot well, immediately back of the driver's seat. A three-quarter inch water pipe comes up through the already existing hole in the floor plate, makes a "U" turn at the proper height, and is fastened to the cylinder outlet valve by means of a pipe union. This same pipe

Cylinder in car

after protruding through the floor plate is carried forward by means of an elbow and projects just beyond the front axle, where it turns upward and runs into a "T" connection immediately in front of the radiator shields. This "T" in turn carries the pipe to opposite both bumpers, and here two Nozzles M I are used to deflect the F. S. both forward and downward.



When the leading vehicle is fired upon, or when an antitank gun trap is suspected, any member of the car crew can quickly open and close the cylinder valve. This permits sufficient F. S. to be forced from the cylinder through the two Nozzles to create a large cloud of smoke. Under cover of this smoke the vehicle is rapidly backed—spreading the cloud as backing is continued. Then, under cover of the larger cloud, the vehicle is turned and seeks cover. (All, in a few seconds.)

Considering the slight cost in time, effort, and money, and the benefits and protection to be derived, it would seem a worthwhile undertaking to try to equip our reconnaissance cars in such a manner.

★ ★ ★ ★

"Speed is, unfortunately, a most expensive commodity; alike in battleships, motor cars, race horses and women, a comparatively small increase in speed may double the price of the article."

—GENERAL A. P. WAVELL.

Eighth Reconnaissance Troop

Fort Jackson, S. C.

Captain Brainard S. Cook, Cavalry, Commanding

ON August 9, 1940, Captain Brainard S. Cook, formerly of the Third Cavalry, Lieutenant John J. Carusone, of the Fifth Cavalry of Fort Clark, together with twenty men from Fort Bliss, Texas, arrived in Fort Jackson to form the 8th Reconnaissance Troop.

Captain Cook and Lieutenant Carusone set to work immediately to get the Troop organized. Fort Jackson was new, and equipment was hard to get, but this didn't stop the Cavalry. They ran schools, using what equipment they had on hand. Gradually new men and additional equipment began coming in, and more Officers joined the Organization—two in September, and two in November. Even though the Troops were still in tents, the strength of the Post increased sharply.

The first reconnaissance trip was made in November, 1940. Captain Cook and Lieutenant Carusone, together with twenty-six enlisted men, four scout cars, and one truck made a three-day reconnaissance trip to Fort Oglethorpe, Georgia.

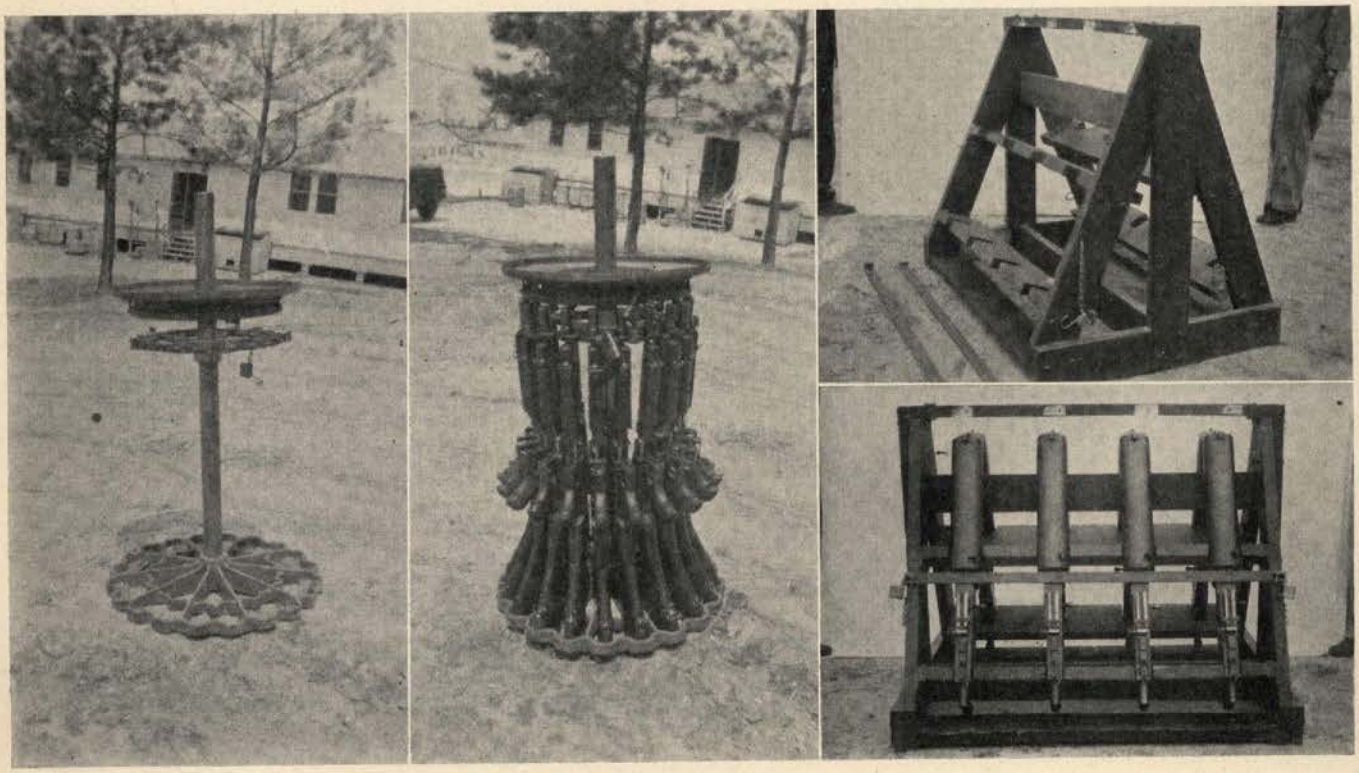
By January, 1941, reconnaissance trips and training were becoming routine matters. Most of South Carolina had been reconnoitered and more extensive trips had been planned.

On January 6, 1941, three Officers and forty-one enlisted men made a three-day reconnaissance trip to Fort Benning, Ga. Equipment included on the reconnaissance trip consisted of four scout cars, three trucks, and four motorcycles. At Fort Benning, a thorough reconnaissance was made of the military reservation.

By the last of January, 1941, the Troop had received its full quota of scout cars and motorcycles. This allowed faster and more thorough training of the men.

In February, 1941, the Troop made its longest trip to date, a distance of 704 miles to Fort Lauderdale, Florida. This trip was a test of the ability of men and equipment to make a sustained march that would normally call for a two days' march and an overnight bivouac. The trip was made with only the necessary gas stops, and one stop to serve a hot meal that had been prepared on the march. On arrival in Fort Lauderdale the men were far from exhausted, for shortly after arrival some of them rented bicycles to tour the city. Sixteen scout cars, four trucks, one reconnaissance car, and six motorcycles were used on the trip.

In March, 1941, the Troop received the first of its quarter-ton reconnaissance cars. On March 9, 1941, thirty-two Selectees came into the Organization, bringing the strength up to 146 enlisted men. On April 8th and 9th, the G-2 Section of the 8th Infantry Division gave the Troop a training test. For its enemy the Troop



Improvised gun racks

had the Mechanized Squadron of the 102d Cavalry (Corps Cavalry). Although the test was satisfactory, the efficiency of the organization was greatly hampered by the lack of radio equipment. A Reconnaissance Troop without radios is at a great disadvantage, as has been clearly shown in all the problems in which the 8th Reconnaissance has participated.

One Platoon of the Troop was attached to the 28th Infantry for a trip to Charleston, S. C., on April 25th and 26th, 1941, for a demonstration at the Citadel.

As in any new Organization a great deal of experimentation and improvisation has been necessary. We are proud of our kitchen truck with its one hundred twenty-gallon storage tank for water, and a kitchen crew that can turn out a full hot meal and send it hot for a distance of twenty miles in any direction. Our "jeeps" now carry a simple machine-gun mount that either fires on a 360° traverse from the car or can be dismounted and placed on the ground in ten seconds. Our four M-193 radios are in improvised cabinets with improvised keys but communication is progressing. Our Machine Guns are locked neatly in improvised portable racks and the "tommy" guns are now resting in a modified 1903 rifle rack.

We are the proud possessors of a "Ham" radio station and only await the word from the F.C.C. before we go on the air.

.30 caliber machine-gun mount in Ford quarter-ton. (Right front seat must be removed.)

We have awaited the decision of the Adjutant General's office on the matter of suitable insignia. It was hoped that the Chief of Cavalry's office would design an insignia for all reconnaissance units. We are rather proud of our Cavalry heritage and believe that such an insignia would help new recruits to remember that tall tales and interesting adventures started with the man who added distance and speed to his power of locomotion by taming and putting to his own use the power of other agencies.

"The Cavalry Board invites any individual, whether or not a cavalryman, to submit for consideration constructive suggestions or ideas relating to new equipment, improvement of standard equipment, or to any problem or project under study by the Board. The Board will also welcome suggestions as to new problems that may properly be considered. Communications should be addressed to the President, Cavalry Board, Fort Riley, Kansas."

Please address all communications for The United States Cavalry Association and The Cavalry Journal to 1624 H Street, N.W., Washington, D. C.

9th Reconnaissance Troop On Maneuvers

*By Captain W. F. Damon, Jr., and Lieutenant Claud P. Brownley, Cavalry**

VOLUMES may be written on tactics and equipment but until they are proved in the field, the rules set down on paper are of no value. Therefore little could be said about the new reconnaissance troops until they had had some experience on Division and Corps maneuvers. So far the 9th Reconnaissance Troop has proved itself to be an indispensable right arm to the streamlined, triangular 9th Infantry Division. For the past few months this Division has been involved in some kind of problem or field exercise every week. During these preliminaries, as in the shakedown cruise of a new ship, mistakes have been uncovered and corrected, plans of action have been tried, proven or done away with, and the "bugs" in general have been taken out. Now, in the lull before the 1st Army Corps and 1st Army maneuvers, I think we are qualified to pass on a few opinions on the value of the Reconnaissance Troop.

The M3A1 Scout Cars are not a new weapon and their capabilities have been tried many times before. However there are a few problems that have come up which have caused some trouble. The only pressing mechanical trouble has been in the wiring on the engine. The shielded wiring connecting the distributor and spark plugs proved defective from the start. This caused engine trouble which was first attributed to the carburetors. When this was finally traced down and the wires replaced with unshielded wiring, the problem of motor noise in the radios arose. We found however that the motor noise was actually not enough to hinder reception. We understand that units throughout the Army have had the same trouble with wiring. The White Motor Company is furnishing an improved set of shielded wires which eliminates all the previous trouble. This new wiring has been installed on two of our cars but time has been insufficient for a thorough test.

The ¼-ton "jeeps" are undoubtedly the "white haired" children of the Troop. Mechanically they have presented no serious problems. They can be depended upon to perform any job given them. Their ability to "stand the gaff" in difficult cross country work is phenomenal. They are speedy, quiet and with a .30 caliber machine gun mounted and a crew of three, they pack the kick to do reconnaissance work normally done by the scout cars. In fact in purely reconnaissance work the "jeeps" work out better than scout cars in most cases. As illustrated we have wrapped a "jeep" in the canvas cover of a 2½-ton truck and floated it fully manned across bodies of water. This ability alone can be extremely useful when bridges are out, and the heavier vehicles are stymied. Perhaps the most important feature of the quarter-tonner is the fact that it can replace the motorcycle. Due to their better cross-country mobility, stamina, dependability, and ease of handling, particularly at night, they are vastly superior to the erratic, unreliable killer, the motorcycle.

Just a word about the bane of our existence, the motorcycles. This Troop has twelve of them and

*Fort Bragg, N. C.

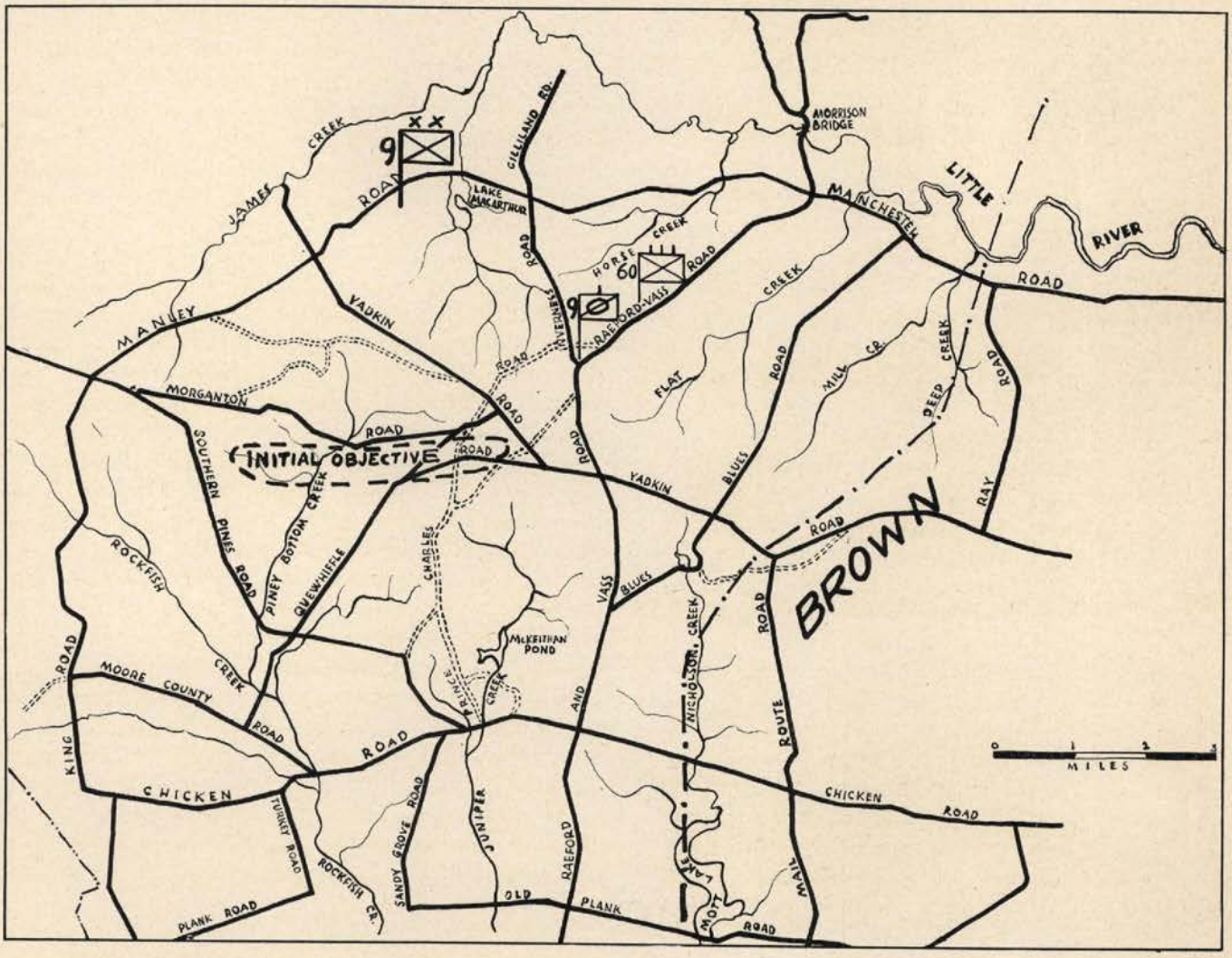
they require more maintenance than the rest of the vehicles combined. In the first place, the present issue machine is too light to take the licking they get in terrain such as we have at Fort Bragg, and this terrain except for sand is not particularly bad. Spare parts are practically unobtainable, and for this reason we consider ourselves lucky if we have 60% of the motorcycles ready for action at all times.

Tactically, they are noisy on scouting missions, extremely vulnerable in the presence of enemy, slow in cross-country work on anything but fairly good roads and practically immobile at night. All in all we have found nothing a motorcycle might be assigned to do, that a "jeep" cannot do much better.

One other phase of a Reconnaissance Troop, and one of its most important functions is communication. Without a good System of communication all the benefits derived from a reconnaissance element are useless. The primary object of such a unit is to gain information and get it to higher headquarters. Therefore the problem of communication is of utmost importance. For the first nine months of our existence we had no radios at all. We were forced to rely entirely upon our motorcycles and "jeeps." This was necessarily slow and often the information obtained by reconnaissance reached higher authority too late to be acted upon. Depending upon the distance and terrain, information reached the Command Post thirty minutes to an hour and a half after initiation. In July we received four of our sixteen radios. This allows one for each of the three reconnaissance platoons and one for the headquarters platoon. These have greatly facilitated the transmission of information. However, communication is still slow when it becomes necessary to break platoons down into sections. It may be said, though, that on the last corps maneuver it was not unusual for vital information to be in the hands of the division commander ten minutes after initiation in a platoon and passing through the Troop headquarters. There is still plenty of room for improvement, however.

Maneuvers

The 9th Infantry Division of which the 9th Reconnaissance Troop is an integral part reached the climax of its training recently in a 1st Army Corps maneuver which lasted four days and was divided into two phases. The Blue forces were represented by the reinforced 60th Brigade. Among their reinforcements was a composite troop from "D" and "E" Troops, 102d Cavalry. This was the Scout Car Troop. The action in both



phases took place on the Fort Bragg reservation in a north-south corridor approximately eight miles wide as shown on the accompanying sketch. This corridor was confined on the west by other elements of the 1st Army Corps (simulated) and on the east by a neutral Brown state. The mission of the 9th Red Division was to protect the left, east flank of the Red 1st Army Corps by preventing any hostile ground reconnaissance and delaying any Blue advance in force north of a line running generally east and west across the corridor. The mission of the 9th Red Reconnaissance Troop was to seize the high ground South of Morgantown Road *(sketch)* and continue reconnaissance southwest after relief by the Red 60th Infantry. The 60th is commanded by Colonel Frank C. Mahin, and they moved up fast, by motors, more in the fashion of a Cavalry unit than infantry. Backed up by such a unit the Reconnaissance Troop, with two platoons disposed across the line was able to push forward confidently, and it maintained constant contact with the enemy as the Red Division, on the offensive, pushed the Blue back during the entire phase. A total of eighty-six messages was cleared by radio through the Troop Command Post during this phase.

At the start of the second phase, Blue reinforced by Blue Corps Troops and Brown which joined them was able to take the offensive and began to push the 9th Red Division back. The 9th Reconnaissance Troop was given the mission of patrolling the Brown border. This was accomplished with two platoons along the border, still keeping one platoon in reserve at the Troop C.P. A secondary mission was given the troop when the Commanding General discovered Blue was using tanks. I quote the General, "Keep those tanks out of here. I don't want them around here." It was during this phase that the Division Command Post itself was attacked and captured by parachute troops. The General himself grabbed his maps and ran two miles across country avoiding capture. The troop reserve and headquarters platoon were called to lead a successful thrust which recaptured the C.P. We were aided again by Colonel Mahin and his fast moving 60th Infantry.

Also, highlighted in this phase was the capture of eight Blue Scout Cars with the Blue Troop Commander and another officer by one section of two Scout Cars commanded by a Sergeant.

As we prepare to go into maneuvers between Fort Jackson, S. C., and Fort Bragg, N. C., in October we are still below strength in personnel. As far as equipment goes we will have to simulate our .50 caliber guns and have to do our work with our four radios.

Pursuit

"The commander of a pursuit must be imbued with a resistless will to destroy, and this must be felt down to the last man. Without regard for their neighbors, or for their communications, everybody and everything must push on after the fleeing foe. The artillery and heavy infantry weapons will pursue him with their severest fire as far as their ranges will permit, after which they too will follow on. The infantry, with its lighter weapons, will keep in contact with the enemy, and must never let him go. Darkness and difficulties of the terrain must not be allowed to check the pressure of the pursuit for a moment. Reserves will be thrown in where progress seems to be the greatest, or where it begins to make itself felt.

"The power of an energetic pursuit, carried on with the especially adapted motorized and armored forces of land and air arms, will make additionally difficult the decision to abandon the field. A decision to break off the battle, unless it has been carefully and systematically prepared, today can much more easily lead to disaster than in the past. For this reason, the attempt to detach the forces from the fighting front will only be made if there are sure prospects of better conditions for later fighting, if a success of one's own, or other especially favorable circumstances—such as the conformation of the terrain, or the approach of darkness—favor a breaking off, and if there is sufficient time for preparation. In such a case, aided by effective fire and a possibility of blocking the enemy, it may be possible to effect a withdrawal."—HERMAN FOERTSCH, Colonel of the German General Staff, in the *Art of Modern Warfare.*

A Rather Rugged Ride

By Captain H. J. Rosenberg, Eleventh Cavalry

"THE going in some places will be rather rugged," advised Major W. J. Bradley who had led the reconnaissance party over the area we were to travel when we left Camp Seeley for our summer maneuvers in the Campo Indian Reservation.

Now the Eleventh Cavalry has made some pretty historic marches. Chasing Villa, the bad boy of Mexico, on his own home grounds, they did something like 571 miles in 21 days with only five days' rations. Then again in Cuba they knocked off 110 miles in 21 hours. This is considered very, very nice distance covering for Cavalry, providing you get there with both men and mounts in good condition.

What we did last month may not give historians nervous prostration. But that march from Camp Seeley to Live Oak Springs, or, more specifically, that part of the march that brought us from Coyote Wells to Jacumba (described by Major Bradley as "rather rugged"), is something few of us are going to forget in a hurry. And it's going to furnish meaty material for tall tales for a lot of us to spin to our grandchildren.

In the first place, while the Eleventh Cavalry is old in history and steeped in enviable tradition, our personnel is composed of young and inexperienced men compared to the veterans who took commands from General Pershing in Mexico. Only about 100 of them had helped break ground at Camp Seeley when the Eleventh first moved down from the Presidio of Monterey last November. Five hundred troopers are Chicagoans and Milwaukeans who were "selected" to join the army in March. During the last part of May the Los Angeles area had contributed another 100 embryonic emergency-time soldiers. And the remainder, mostly draftees, too, had come from Camp Callan, California, and Fort Riley, Kansas. About eighty per cent of our strength was drafted into the army by the Selective Service law. And a fair estimate would indicate that about seventy per cent of our officers are Reserve officers called to duty this year.

You might well say that temperature and terrain were the enemy forces on this trek. Temperature and terrain, to one who has never marched in 115° Farenheit, hours on end over some of the west's wildest, most precipitous mountain trails, might sound like abstract hygroscopic terms. But, those who know the Imperial Valley of California and the adjacent mountains know that its climate and geography can be actively aggressive and harassing.

We'd had a week's warning. Field equipment had been checked. Mounts were well shod. Troop commanders had studied maps. Manuals on march orders and hasty bivouacs were well thumbed. July 21st was the day appointed for leaving the United States' hottest camp area, Camp Seeley, California.

To the civilians of the county who had gathered to witness the exodus, the 11th's departure took on all the aspects of an unannounced military parade. The evening sun, still merciless at 6:00 PM, shone on the burnished surfaces of six scout cars bristling with machine guns, on 684 mounted men armed with pistols and rifles, on thirty officers, on three cyclists armed with sub-machine guns, on pack horses bearing machine guns, mortars, and special weapons, on seventeen trucks, a semi-trailer truck, a sedan, a pick-up, two sidecars, and two reconnaissance cars.

The first evening's march, from Camp Seeley to Coyote Wells, a distance of eighteen miles, followed the highway through the colorful, if unhospitable, California Painted Desert. The Command Post, headed by the Eleventh's Commanding Officer, Colonel H. M. Rayner, set the pace for the march. There was the usual shakedown after the first thirty minutes and a small rest period every hour. Eleven PM saw us at our first real rest stop, Coyote Wells.

Mounts were watered here from a railroad tank. Troopers were given a light meal. To say it was hot would be like saying a machine gun shoots pretty fast. According to a newspaper report of the march, it had been 115° in that area that noon and was 105° at midnight. It was so hot the perspiration showed through our khaki shirts and breeches just as if it had been the middle of the day. The men were allowed to rest from around midnight until 3:00 AM. Their clothes were still wet when they saddled their horses. It seemed fun, though. The men had a holiday air. They were going to new places, to see new sights and do new things.

The stars friendlier and thicker on the desert than anywhere else, twinkled merrily down upon weary men who a year ago at this time would be making ready to visit the gay night places of New York, Chicago, Milwaukee, and Hollywood, and who now were singing snatches of the currently popular tunes as they saddled up, checked equipment, and led out their horses. They had just finished three hours of rest before tackling one of the west's most difficult cavalry rides.

As the stars faded away and the desert sun's unrelenting tyranny turned dawn's gentle shades of purple and grey on mesquite and sage to fiery gold and red, the hazy outlines of the mountains ahead took shape, size and detail. With each curve of the road, boulders became more immense, more mountains loomed ahead and the scrawny vegetation thinned away. Eight AM saw the command post at Mountain Springs. Here the horses were watered from a portable trough filled from

The 11th Cavalry Machine-Gun Troop leaves Coyote Wells and begins the ascent to Devil's Canyon

a nearby stream by a small motor. Sizing up the giant mountains ahead, we filled our own canteens from the spring, broke into our lunch bags and tried to cram as much relaxation as possible into a fifteen-minute rest period.

Crossing Devil's Canyon was the climax of the trip. There was a 1,000-yard interval between troops so each group felt alone in the great void, always blocked from the forward and rear party by a number of canyon walls. The path was a stingy one, so small that men leading pack horses with short halter shanks had to lean backwards in their saddles. The drops on either side were sheer and often five hundred and a thousand feet. Often boulders too big to be moved had to be stumbled across or jumped. Grades up and down were at dangerous angles.

The atmosphere of the Canyon was so well apprehended by Harold Bell Wright in his historic novel *The Winning of Barbara Worth,* that a portion of it is borrowed here. It is particularly apt since the primitive trail has been little used since the time of the novel and not at all changed. Too, the characters in the novel arrived at the pass at the same time of day.

"Steadily, but with frequent forced rests on the grades they climbed toward the summit. The sharp ring and clatter of the iron-shod hoofs echoed and echoed and echoed again. Loudly, wildly, the rude sounds assaulted the stillness until the quiet seemed hopelessly shattered by the din. Softly, tamely, the sounds drifted away in the clear distance; through groves of live oaks, thickets of greasewood, juniper, manzanita and sage; into canyon and wash; from bluff and ledge; along slope and spur and shoulder; over ridge and saddle and peak; fainting, dying—the impotent sounds of man's passing sank into the stillness and were

lost. When they halted for a brief rest it was in a moment as if the silence had never been broken. Grim, awful, the hills gave no sign of man's presence, gave that creeping bit of life no heed."

Mountains, silently majestic, rolled ahead and behind, to the left and right, as far as the eye of the city bred horsemen could see, like moving waves of earth, foam-studded by crests of desolate boulders, laced with emaciated desert foliage. Cloud bursts and avalanche had devastated many parts of the old pathway since Harold Bell Wright had written his book, and highways had made circles around the uninviting mountain range.

Real adventure, mortal danger took the place here of Wright's homemade excitement. Private Joseph Sutor, an enlisted man from Special Weapons Troop, was maneuvering over a difficult path when the edge of it crumbled under his mount's hoofs. Down went man and beast under the eyes of a hundred anxious fellow troopers. About a hundred yards (and eleven somersaults) down, the trooper disengaged his stirrups and was free of the horse which kept going down another two hundred yards. The man was badly bruised and shaken but without need for medical attention. The horse lay still in the gorge, half hidden by mesquite. A great black buzzard, attracted by the avalanche silently circled overhead, his head bent earthward ominously. A veterinary officer went below to dispatch the inert animal. He had just effected a slow, cacti covered descent to the animal's side when the steed stumbled awkwardly to his feet, neighed, and ploughed his dusty way up the ascent where he found his rider and muzzled him apologetically. The sides of the canyon reverberated with the laughter of the men and the good natured imprecations of the veterinarian as he picked his way up to the narrow path.

Hardened veterans of many marches, tough old soldiers, and callous city-bred selectees alike might inwardly condone the author's gush of poetry when describing one of the sights from Devil's Canyon, "In that view, of such magnitude that miles meant nothing, there was not a sign of man. . . . From horizon, so far that the eye ached in the effort to comprehend it, there was no cloud to cast a shadow, and the deep sky poured its resistless flood of light upon the vast dun plain with savage fury, as if to beat into helplessness any living creature that might chance to be caught thereon. And the desert, receiving that flood from the wide, hot sky, mysteriously wove with its soft scarf of lilac, misty veils of purply and flimsy curtains of rose and pearl and gold; strangely formed with wide lakes of blue rimmed with phantom hills of red and violet—constantly changing, shifting scenes as dream pictures shift and change.

The command post arrived at Jacumba bivouac area at 10:30 AM. The elevation here was 3,500 feet above sea level, as compared with Camp Seeley's 52 feet below sea level. To those of us that had lived in the arid, hot, grey land for the last few months, this new location, with its waving oak trees, miles of green cultivated fields and cool, flower-scented air, was an oasis.

By noon the entire regiment had unsaddled at Jacumba, watered their horses and hungrily responded to the noon chow call. The rest of the afternoon and the entire next day was devoted to resting. A few knees had been bruised when troopers had been forced to bring their mounts too close to mountain walls. Some hocks and fetlocks bore marks of cacti. Otherwise the march was without casualty.

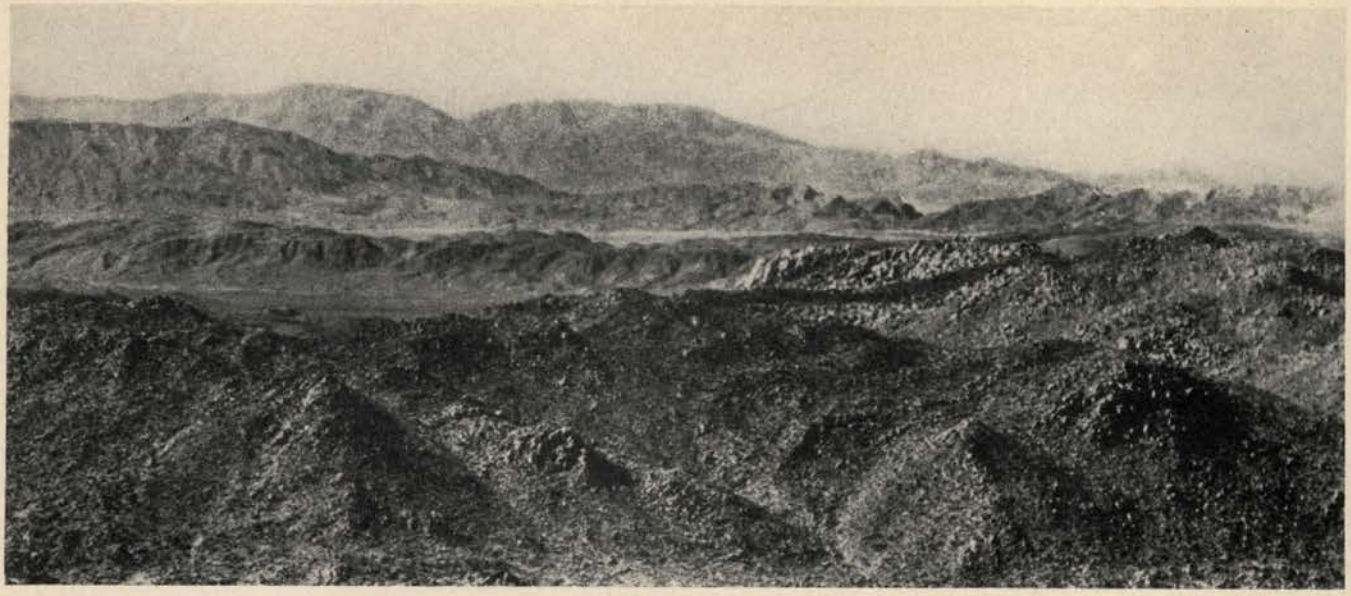
The next day, Thursday, July 24th, we took another thousand feet of elevation when we traveled 14.5 miles from Jacumba to our maneuvering base in the Campo Indian Reservation. This is 2.3 miles north of Highway No. 80 at Live Oak Springs. The territory is heavily wooded by the beautiful red Manzanita wood. Oak, mesquite, greasewood and slap brush are there in profusion, too. Camp grounds were on what amounts to the top of one series of mountains and the bottom of another.

The camp grounds we entered were not altogether desolate. The men who had preceded us in scout cars and trucks had arranged for picket lines and kitchen posts. A mountain stream had been diverted by a series of dams into a water trough for the horses.

The rains came right after the men had hastily erected their pup tents. It was a cloudburst. The rain that hit the side of the mountain above cascaded down in torrents, washing away ice boxes, pup tents, supplies. Shovels and sand bags were hastily commandeered; trenches dug, and the recalcitrant streams harnessed. Men stood knee deep in torrents digging away to divert streams from feed piles, rations and other supplies. Within half an hour after it started the rain ceased, the sun came out and the steam began to rise from the soggy ground. Not to be caught in a similar predicament again, water trenches were dug around strategic areas, fortified by sand bags.

No report of the march would be complete without mention of the now popular usage of the word "rugged" in the 11th Cavalry. Most of us had forgotten that Major Bradley had described the area as "rather rugged" until one moment in Devil's Canyon. The Command group was about a mile ahead and five hundred feet above the cavalry in a country of steep, snake-like roads. A minor avalanche brought some boulders to the feet of a trooper's mount and the enlisted man's plaintive, "So this is what the Major calls 'rather rugged'!" echoed throughout the canyon.

Today if a man is built like a bull, troopers of the Eleventh Cavalry will refer to him as being "rather rugged." If a mount can and does kick, buck, bite, stomp and rear in the same three snorts, he is termed a "rather rugged" animal. If an earthquake should start a fire that would be put out by a tidal wave, the troopers might report the going as rather rugged. This employment of the word is the regiment's style of paying tribute to the Major's power of understatement.



The 11th's New Home

*By Colonel H. M. Rayner, 11th Cavalry**

WHEN the Eleventh Cavalry moves into its new home at Camp Lockett within a few months, it will add a chapter to the history of one of America's last and most interesting western frontiers. Camp Lockett is right on the Mexican border, forty miles due east of the Pacific Ocean, in a region called Campo which is in the southwest corner of the Milquatay Valley. That is an Indian name meaning "shoe-shaped" which is an apt name for the outline of the valley.

Cloistered from the rest of the world by a once almost impassable range of mountains, it was a land to be reached by only the hardiest pioneers. It is too bad that this section could not have kept its own diary for the historians of after years. Had it been faithfully kept, there would have been many centuries when the only note would have been, "dull days. The business of animal evolution and geologic development continues slowly."

Camp Lockett's Diary

Other years it would have recorded events which have so far baffled the detection of geologists. The Diary, in fact, might have read something like this . . .

2,000,000,000 B.C. (Archeozoic Period)

Am well below sea level.

500,000,000 B.C.

From the beginning of the Paleozoic era (550,000,000 B.C.) until the end of the Mesozoic era (180,000,000 B.C.), I certainly had my ups and downs. I stuck my head above water for the first time during the Devonian age and kept it up through the Mississippian age. Down I went during the Pennsylvanian age, to stay all through the Permian age. I came up during the Triassic, went down in the Jurassic, not to come up again until the upper Cretaceous period, when ichthyosaurs, plesiosaurs, dinosaurs, etc., began to inhabit me.

60,000,000 B.C.

From this time until the Pleistocence era (which includes the Pliocene, Miocene, Oligocene and Eocene eras) my general shape, as well as the shape of the rest of the world is outlined. Ocean beds sink and continents rise. The earth's crust is uneasy these years. There are many disturbances, uplifts, dislocations, landslides, eruptions, folding. Snow and ice and flood make great changes. The glaciers do not reach here because of the hot rocks and escaping gases to my north. Rains and floods which cut deep gorges also destroy nearly all forms of animal and vegetable life here.

2,751,000 B.C.–20,000 B.C.

During these years, generally known as the world's Quaternary Period (and divided into Pleistocene and Recent), the volcanoes subside. There is increasing dryness and extremes of summer and winter temperature. I first record the existence of human inhabitants during these years.

My level valleys are inundated still. A mountain chain of mostly granite rocks, covered in many places here by older or Recent (era) eruptive rocks, extends

*Commanding Officer, Camp Lockett, Campo, California.

from north of the Santa Gertrudis in Mexico up to the San Jacinto Mountains.

1,000 B.C.–1,000 A.D.

I developed my shape as a valley just prior to this period. Drainage from surrounding mountains kept me inundated for years, poured tons of rich, fertile silt into me.

Indians find there is always water here, always at least one spring. And where there is water, there is game. Many of the Indians who come here separate from their tribe never to return.

I am a rough country, surrounded by sturdy hills and young mountains. I am dotted by curiously shaped boulders which seem to have been fashioned and placed one atop the other by some whimsical Giant in an idle, lackadaisical mood. My lush green slopes and verdant flat lands are studded everywhere by great oddly shaped stone formations of grey, brown and white granite. I harbor some semi-precious jewels, and a great deal of Feldspar and Silica.

This is a country for game. I abound with deer, antelope, bear, mountain lion, coyote, bob cat, otter, quail, turkey, rabbit, coon and 'possum.

My climate, which will not change much one way or the other for many thousands of years, is temperate. My average winter temperature is 47° and my average summer temperature is 75°. The hottest it ever gets is 100° but that is as rare as the 6° of the coldest winters. Average rainfall here is eighteen inches a year, although at times one-third of this may fall in the same twenty-four hours. These sudden cloudbursts change my topography from time to time, make new streams, and wash away trails.

1750

Columbus' discovery of America has done one thing for me—at last I have a name. Spaniards passing through here en route to San Diego from Mexico refer to me as "Campo" which means "The Place."

This is the place to fill canteens, the place to exchange the white man's gunpowder and whiskey for the redman's fur, corn, and venison. Indians, too, know this now as a trading place.

1776

Father Jacob Baegert, famous Franciscan missionary, and first historian of this area, terms the Indians here as "Mitschirikutarnajeres." They are very dark, almost black; "lye colored" according to him.

These Indians, variously referred to as Pericues, Hoopaws, Kawakupai, Monquis and Cochines, are isolated from all other tribes and, until the white man came, thought they were the only people in the world. Although they are very primitive and lack social order or distinctions to a shocking degree, they are the only Indians in America to use color symbolism for directions. White stands for east, green-blue for south, black for west and red for north in their written sign language.

1800-1850

During these years many of the incorrigible convicts and illegitimate children that Mexico exiled to San Diego arrived in this area after a short history of crime in San Diego. They are to eventually lose their identity by intermarriage with Indians and Mexicans here. Although the mixture of bloods was to somewhat bleach the countenances of the "Black Indians," it certainly did not whitewash their characters. They stole, murdered, and, in every other way, gave missionaries and settlers grave trouble.

1851

The Butterfield stagecoach which carries people through this area to San Diego requires each passenger to carry a rifle, 100 rounds of cartridges, a colt revolver, a stout knife and other similar implements of protection.

Flour sells for $22 a barrel in San Diego, is relatively higher here.

1857

Earthquake shook some of the boulders from the crest of my hills. Was felt in San Diego too.

1868

This year sees the influx of Texans who are disgruntled with the way the Civil War turned out. L. H. and S. E. Gaskell are the leaders of these. They come in ox carts, making roads as they advance, carrying with them their great Texan plows with which they swathe liberal slices of sod from the ground to pile up on each other as walls for their homes.

L. N. Bailey, for example, left Houston, Texas, on April 1, 1868, and arrived at Campo on November 26th. It took him a week to get through Devil's Canyon.

San Diego now has two stores and the folks who come from the east pass through there. Campo is now the official as well as the oldest port of entry from Baja California. The stagecoach route, connecting San Diego with Nogales and Seeley make this an overnight stopping place.

Those that see good land here take it by virtue of squatter's right. They raise corn, beans, potatoes, pump-

Camp Lockett, Campo, California, under construction

kins and tomatoes. Their Texan cattle thrive here. Since it takes an ox cart with four cattle a month to get to San Diego from here, each settler must be self sufficient.

The Indians are treacherous. They kill from ambush. John Speck, a well-liked Texan, was killed early this year by Indians. A cowboy posse rounded up the renegade Reds and shot them. Another posse hanged three cattle rustlers on an old oak tree that is regarded as a boundary line between California and Mexico. Land sells for $200 a quarter section, and choice acres go for as high as $5.00.

1878

The first Cavalrymen come to Campo. Sixteen soldiers wearing the blue uniform of the United States bivouacked here for several months this year.

1899

Game is fast disappearing. Work has started on the Railroad which is to pass right through here.

1900

Campo is now a railroad stop, as well as a port of entry. The San Diego and Arizona Railway goes through here.

1906

Young Charlie Cameron, who came here as a boy in 1872, is engaged by the government to ride the border looking for smugglers. Charlie's father, Sam Cameron, is one of the oldest settlers here and the adjacent valley, Cameron's Valley, is named after him.

Another earthquake. This one was too much for the Texans who haven't cared much for the cold winters anyhow. There is a general exodus of settlers to the neighborhood above San Diego. The "Black Indians" are now called "Campo Indians" or "Mission Indians," and they seem to turn paler every year as they continue to intermarry with whites, Mexicans and Indians of other tribes.

1913

The government has erected a fence along the Mexican border to keep out the Texas Fever Tick, a cattle pest. Herds coming from Mexico are dipped at stations, and, if even only one tick is found, the whole herd is quarantined for sixty days. The fence also now settles boundary disputes.

1918

"E" Troop of the 11th Cavalry stationed here.

1919

"D" Troop of the 11th Cavalry relieves "E" Troop, stays until 1921.

1920

The San Diego and Arizona changes its name to San Diego, Arizona and Eastern Railway. After leaving San Diego the track dips into Mexico to escape the mountains, comes back into the United States 3 miles west of our station. It carries fruit and vegetables picked up at National City and Chula Vista to eastern markets. Coming back, it brings this area malt, barley, coconut meal, cocoa and a variety of fabricated merchandise.

1940

"E," "F," and "G" Troops of the 11th Cavalry erect a small tent town to the north, right on the shores of Morena Lake.

1941

On June 23d of this year ground was broken here for Camp Lockett, new home for the 11th Cavalry. Some factual data taken from the Quartermaster's Office on this day provide a picture of the camp-to-be, as well as some cut and dried data about this region:

Legal description—Section 22, Township 18 S., R.-5E, San Bernadino Basin Meridian.

Longitude—116° 28′ W.

Latitude—32° 36′ N.

Camp Area—710 acres.

Construction Area—1½ miles by ½ mile.

Elevation—2,560 feet above sea level.

Water analysis—7.2.

Architect-Engineers—Kistner-Curtis-Wright, N. Y.

Contractor—George A. Fuller Co., N. Y.

Contractor's Field Superintendent—J. D. Kaufman.

Construction Quartermaster—Captain M. D. Tadlock.

Sewage and Water Contractor—Contracting Engineers Co., San Diego.

Type of lease—Leased on yearly basis with options until 1966, with rental payments being applied on purchase price.

Type of Buildings—Semi-permanent, two story earthquake-proof, all concrete base, frame, cantonment type with silver-grey, asbestos shingles for sidings.

Number of buildings—132.

Accommodations for men—1,568.

Accommodations for horses—1,668.

Construction payroll—1,000.

Cost of construction—$1,500,000.

Recreational buildings—Theatre and Chapel, each accommodates 365.

Stables—Closed stables with wood corral fences.

Roads—Twenty-two feet wide, paved with 4-inch armor plate. Separate parking spaces for private cars of enlisted men and officers.

Ammunition Dump—Portable steel igloo type magazine, 900 feet from next nearest structure.

Heating—Diesel-fed steam boilers in hospital. Butane water heaters in dormitories.

A miniature tent city mushrooms up overnight to accommodate the civilian army of carpenters, engineers, plumbers and other craftsmen. Puffing excavators bite deep into my flanks; the sound of dynamite reverberates throughout the valley as my granite boulders are displaced and million year old oyster shells and fossil imprints are brought to light.

Pipe lines to Lake Morena serrate my length so that the flow from my springs may be augmented. Trucks, tractors, bulldozers, graders, power shovels, and drag lines now busily crisscross each other where once the redman stalked deer.

The silver-grey shingles that cover the sides of the barracks glint in the sun. The sound of the carpenter's hammer, the electric saw, the rivet, concrete mixers, pavement breakers, and other mechanized instruments of construction contribute to the cacophony of progress which drives game farther and farther away.

My name of Kwita-Ian, meaning place of the Kawakupai Indians is forgotten. Instead the roads are named after famous American soldiers such as: Pershing Gate Road, Sheridan Drive, Custer Road, J. E. B. Stuart Road, Parker Road, Forest Gate Road, Moore Road, Erwin Lane, Kling Lane, and Thomas Road.

The 11th Cavalry soldiers who will soon inhabit these barracks went into cotton this year at Camp Seeley in April. Next year they won't go into cotton until about June 1st. Drilling in 120 and 130 degree temperature and recording 110° at midnight was no rarity for the Seeley occupants. They will relish this milder zone where the thermometer's rise to 100 is a rarity. Too, water here will be a welcome change after the alkali water of Seeley, this area's water test being only .2 off neutral. And this is 2,600 feet higher than Camp Seeley.

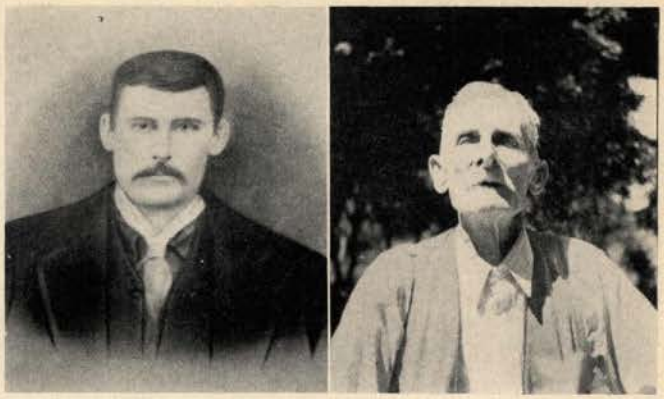
Seeley's maneuvering grounds were desert. During tactical problems when the Camp Seeley soldier concealed himself it was in the dust of a dried river bed, in the white sand of the California desert. The land was level and observers could see for miles. Here concealment is easier. There is vegetation on the ground and there are hills, small mountains, boulders, clumps of trees everywhere.

"Young" Charlie Cameron, one-time boundary patrolman, Indian fighter and blacksmith of the region, is now referred to as "Old" Charlie Cameron. He recently paid $1,000 for two acres of land here, land he might have bought for $2.00 an acre when he first came here.

The Indians are all restricted to reservations. Of the 1,500 or more 11th Cavalrymen who are expected to be here by November 1st, only two or three will be Indians and these will certainly not be "Mitschirikutarnajeres."

August 23, 1941

The old order changeth. I am dotted by tents and half finished cantonment-type buildings. Although the government's contract with the builders stipulated that the Camp be ready for occupancy by this day, shortage



Left: **Young Charlie Cameron as he looked when he guarded the Mexican border in the Campo area.** ***Right:*** **The same Charlie Cameron as he is today.**

of labor and certain types of materials may prevent the 11th Cavalry from moving in until as late as the first of 1942.

As if by some inadvertent tribute to my traditions, the engineers have planned the buildings to form an almost perfect shoe. Just as the Indians who viewed me from afar years ago said "Milquatay," aerial observers looking at the camp in years to come will say "shoe-shaped." And they will notice that destiny, in the guise of the road engineers, has added a perfect Cavalry-type spur to the heel.

* * *

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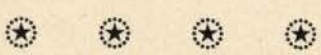
ORAL

Captain M. C. Tadlock, C.Q.M.

Charles Cameron.

D. Forest Smith.



Rim-Rock Echoes

By Lieutenant Bruce W. Campbell*

ON a warm fall afternoon in the early 1840's, a small column of covered wagons were treking their weary way across the Kansas plains. A low cloud of dust hung over the train and drifted slowly towards the north. Near the junction of two muddy streams the train turned, leaving the long shadows cast by the rim-rock and headed toward the river. As they drew near, the lead wagon circled. The others followed, forming a tight ring, with the animals in the center. While the horses and mules were being cared for within the inclosure thus formed, young Colonel Fremont, in command of the escort, strolled over to a short slight man, dressed in buckskin.

"Any Indian sign, Kit?" he asked.

"Naw. Ain't seen a one." Carson spat, expertly knocking a small flying beetle to the ground. "Reckon our set-to yestiddy mornin' chased 'em out for a few days. Can't tell for sure, though. Guess I'll amble down to the river and give a squint around."

Picking up his rifle, he started for the river bank, some three hundred yards away. "Guess Fremont's lettin' this redskin business get his goat," he mumbled under his breath. As he neared the willows his appearance changed. He slunk along, silent as a shadow. He parted the heavy underbrush and peered up and down

*Instructor, Weapons Department, Cavalry Replacement Training Center, Fort Riley, Kansas.

Pistol Firing at the Cavalry Replacement Training Center

the stream. After some moments, he slipped along the shore line, coming to a halt as he rounded a bend in the stream. Ahead of him, an Indian quietly entered the water and headed for the opposite bank. It was a Pawnee scout.

Kit quickly leveled his rifle, then lowered it. The shot would not be a long one, so he laid his rifle against a windfall, drew his new cap and ball revolver and quietly cocked the hammer. Standing with his feet slightly spread apart, he leveled the weapon, drawing a bead on the Indian's head.

"Must be a good forty yards," he thought as he squeezed the trigger. At the report, the redskin fell into the water, head and shoulder showing above the surface.

Carson waited a few moments for signs of other Indians and then strode forward rapidly, noting with satisfaction that the man lay a full forty-four paces from where he had fired. Carson drew his knife, reached down and ran the edge around the scalplock, adorned with its single feather, and tore it off. He let the body slip back again, giving it a shove out into the current with his foot.

Retracing his steps he strolled back to camp with the scalp dangling by the feather. As he passed the fire, he tossed it to the boys saying, "For the Old Man."

Fremont walked up to Carson as he was seated by the fire engaged in repairing his spare moccasins. "See you got one varmit anyway. Where'd you hit him?"

"A mite low," was the reply. "I'd knocked his eye out if I'd a used Betsy here." He glanced fondly at his rifle. "But I got him right in the face with that new .36 Colt you gave me. Sorta messed him up a bit."

"That's too bad, Kit, but I guess he was shot good enough for me. How far was it?"

"Reckon it was about forty yards."

"That was a damned fine shot. Glad you got him."

* * *

On a warm fall afternoon in 1941, a century later, the same Kansas rim-rock again echos with the sound of gun fire. Before them stands a long line of men at "Raise Pistol." In front a row of targets extends for over half a mile with the rim-rocked upland in the background. Behind the shooters the late afternoon sun beats down upon the Kansas plains, in the middle of which are the buildings of the Cavalry Replacement Training Center. Constructed on the banks of the Republican River near its junction with the Smokey Hill River, it has the distinction of being the only Cavalry Replacement Center in the United States. Here during the next year are being trained about 24,000 men.

The young Lieutenant on the firing line pushed back his hat and surveyed the line of men in front of him. Picking up his megaphone, he announced, "Rapid Fire, eleven seconds"—he paused and then continued "Ready On the Right—Ready On the Left"—then after a lapse of some seconds, "Ready On the Firing Line." Again he surveyed the long line. Placing a whistle to his lips he glanced at his watch, blew his whistle and pressed the release on the timer hand. At the sound of the whistle, two hundred and twenty-five pistol shots rent the air and continued to crash at various intervals in what really sounded as one continuous loud roar. One lone shot ripped out late.

"Mark that shot out," called the Range Officer, then to his companion, "Seems they just can't get all their shots out in time today. Shooting pretty good for new men though; we had nine men get over ninety in the last slow fire run. Guess these pistols are a lot better than the ones we used to have."

"Yes—and I think we're gettin' a pretty good type of soldier too—they look O.K. to me."

As a matter of fact, a score of 90 on a 5-inch bull's-eye at 25 yards with the .45 Automatic is pretty fair shooting for comparatively new shooters. In the hands of an expert this arm is capable of surprising performance. With the arms in use before 1900 and considering the disadvantages of black powder they did do some miraculous shooting indeed, but should those exponents of the six-shooter be privileged to attend an exhibition by today's topnotch marksmen their eyes would be opened.

The reputation that the .45 Automatic Pistol received some years ago as being the most difficult arm to fire is fading into history along with such arms as the Cap and Ball Revolver, the Colt's Single Action Army or Peace Maker as it was popularly named and the .44 Smith and Wesson Russian Revolver. Each of these arms had its day and in that day represented the finest in handguns, but today is the day of the .45 Automatic Pistol and it reigns supreme.

In design the .45 Colt has achieved the most advanced stage in small arms and it has been considerably refined and improved over the early ones used in 1917-18. The .45 Auto cartridge, when fired in a machine rest with a barrel of standard length will consistently produce 10 shot groups of 1 inch at 50 yards. This accuracy is not exceeded by any other revolver or pistol cartridge. When the improvement in the design of the pistol and the accuracy of the ammunition are considered it is no wonder that the results are gratifying.

Today is a day of Rapid Fire and Fire Power, and the .45 has it to spare. Modern arms producing accurate fast fire are demanded by military forces all over the world. We are indeed fortunate that the age of modern high speed precision manufacturing has been able to produce an arm of this type. We are the only nation that has equipped its army with an automatic side arm having a caliber that exceeds three-tenths of an inch and in this field the .45 Colt is king. Every time a shooter stands on the firing line and squeezes the trigger of his .45 he realizes that he is behind the most accurate, enduring and powerful automatic pistol made and that his chances of scoring are better than at any other time in the history of pistol shooting.

A Selectee's Thirteen Weeks

By Private Daniel Smythe

EDITOR'S NOTE: Mr. Smythe's poems appeared in *The Best Poems of '38* and *The Best Poems of '40*, compiled by Thomas Moult and published both in England and the United States. Other of his works have appeared in the *Yale Review, Scribners, The American Mercury, Saturday Review of Literature, New York Times, Tribune, Sun, Commonwealth, Household Magazine, Yankee, Poetry, Boston Herald, Washington Post, Literary Digest, Trails, The Oregonian,* and the *Christian Science Monitor*.

Many of his poems have been read before the Poetry Society of America at the Theodore Roosevelt Birthplace in New York City. In 1940, he won a prize for submitting one of the two best poems of that year. In 1936, his work received national recognition when his photograph and a poem from *Scribner's* appeared in the *Literary Digest*.

WE had to say good-bye at last, good-bye to the Cavalry Replacement Center and its horses and prairies and intensive drilling and brilliant sunsets. Thirteen weeks of it! As I look back over them, I see a long line of days, no two alike, full of hard work and accomplishments. But each one was so busy and eventful that the days went swiftly. The thirteen weeks passed over our heads and were gone before we knew it.

What did this first taste of the United States Cavalry mean to a poet and a farmer like myself? Before I entered the army, I was earning my living on a wild life sanctuary in upper New York state and, in spare time, writing poetry which was gaining quite a bit of recognition. When I came to Fort Riley, I had determined to make the best of things and get everything possible out of these new and extraordinary experiences and landscape. Though sometimes the work seemed difficult and monotonous, I plunged into it, learning to ride a horse, paying close attention to instructions in all sorts of weapons, getting myself used to rough work in the field and hours of drilling. My body learned to obey the commands. My mind searched everything that interested me in these surroundings.

I believe that I personally gained much more from these weeks in camp than the average selectee. But that was because I never allowed my attentiveness and seizing of opportunities to lag. I tried hard to better myself. I was keenly attracted to nature and human nature—and I found plenty of both from Kansas and the Replacement Center.

I eagerly devoted almost every spare moment to my writing—having a desk and typewriter very generously offered to me in the Public Relations Section. Inspirations came thick and fast. I pounded out furiously a great mass of material, including 46 new poems (four of which I have already placed with national publications), nine feature articles for my local newspaper, items about the boys for their local papers, and ten thousand words of journal. In addition to that, I extended my knowledge of human nature, in my discussions with the boys and my work with them. I made many new and valuable friends. I investigated the wild flowers and songbirds of Kansas on my long hikes on Sunday and I heaped up pages of nature notes. Also, I gained eleven much-needed pounds.

I must say that the recreational facilities were of the best although I wasn't able to take advantage of them to any great extent. Hiking and writing were my recreations. But I knew that my companions were enjoying the books they found in the library, the entertainments at the recreation halls, the movies, the softball games and the dances on Saturday evenings. The selectees were certainly grateful to those who made these recreational facilities possible.

Many vivid memories I shall take away from Kansas. I can only list a few of them. . . . The graduation exercises. . . . General Chamberlin giving an exhibition of horsemanship. . . . The sunsets of Kansas. . . . Our first 14-mile ride on horseback over the prairie lands. The prairie horned larks that were numerous in this region. The many new and interesting characters I met.

It has not been easy. We marched in the rain and the mud and knew what a dust storm could do. We often went to bed with aching muscles and blisters—but after the first hard weeks, we were surprised at how our muscles responded and developed. I, for one, feel better mentally and physically than I have ever before. The experiences I have undergone have done me a world of good—and I can truthfully say that the thirteen weeks —March 20-June 20, 1941—have been the best of my life.

NONCOM QUIZ

By Major T. T. Thornburgh, Cavalry*

EXPLANATION

The subject of this test is RECONNAISSANCE by small cavalry units. The questions are asked in true or false style. Underline the appropriate word indicating whether you think that the statement is true or false.

You can check your answers against the solutions which appear on page 100.

Allow yourself five points for each question correctly answered. A score of 75 is satisfactory, and anything above 90 is excellent.

RECONNAISSANCE QUIZ NUMBER 1

QUESTIONS

1. All horse cavalry units are capable of performing reconnaissance, both mounted and dismounted.
True False

2. When crossing short wooden bridges at night, individuals on scouting missions should cross as rapidly as possible to reduce the length of time a noise will be made.
True False

3. In receiving his mission from the commander sending him out, a patrol leader should make sure he has a general idea of what he is to do.
True False

4. In a horse patrol of one squad, pairs of troopers are generally designated to reconnoiter to either flank and the rear pair of troopers are designated as "get-away" men.
True False

5. In a horse patrol of one squad troopers may be detached to make flank reconnaissance up to a distance of 300 yards.
True False

6. In approaching a wood or thicket a horse patrol deploys as foragers at raise pistols and gallops into the cover of the wood or thicket and reforms.
True False

7. To reconnoiter by fire the point or leader of a horse patrol above squad exposes himself for a moment and fires into the area while the remainder of the patrol remain concealed.
True False

8. In the passage of ravines or canyons of considerable length a horse patrol of one squad takes a forager's or flock formation and moves at the gallop through the canyon or ravine.
True False

9. Patrol leaders of horse patrols upon reaching an intermediate objective should designate as the next objective a terrain feature at least an hour's march in the direction the patrol is ordered to march.
True False

10. Horse reconnaissance patrols resort to combat only when necessary to save themselves or to accomplish their missions.
True False

11. When horse reconnaissance patrols suddenly encounter hostile mechanization the best means of protection is to scatter or seek cover in terrain unfavorable for mechanized movement.
True False

12. The principal functions of a scout car platoon of a reconnaissance troop, mechanized, is security, command, communication and combat.
True False

13. The section commander of a scout car section, advancing on a reconnaissance mission, habitually rides in the second car of the section.
True False

14. Reconnaissance of a hostile bivouac by a scout car section is usually conducted by firing into the bivouac area, pausing to see if enemy returns fire, and then rapidly withdrawing.
True False

15. When a scout car section on reconnaissance is confronted by a suspected ambush the best procedure is to have the leading car rush it at once while the rear car covers the leading car by fire.
True False

16. A scout car section on reconnaissance may detect an enemy mechanized detachment before its own presence has been disclosed. If contact is unavoidable, it should clear the road quickly, gain any available cover and deliver concentrated surprise fire on the enemy vehicles.
True False

17. When a scout car section on reconnaissance halts to conduct dismounted reconnaissance to both flanks of its axis of advance, one man, armed with rifle or submachine gun, should be sent at once to conduct the reconnaissance desired.
True False

18. A section of scout cars on reconnaissance and a pair of solo motorcycles on reconnaissance both employ the same method in conducting their advance.
True False

19. The leader of a motorcycle patrol, consisting of

*Prepared under the direction of The Department of Tactics, The Cavalry School.

a section, conducts his patrol forward by bounds in rear of a point. The patrol leader may lead his patrol or have the second-in-command lead the patrol and the patrol leader ride between the patrol and the point.

True False

20. The motorcycle platoon should be trained as though the platoon were a rifle platoon mounted on motorcycles instead of horses.

True False

NONCOM QUIZ SOLUTIONS

1. True. Par 302, FM 2-5.
2. False. Par 303 *b*, FM 2-5.
3. False. Par 306, FM 2-5.
4. False. Par 315 *a* (3), FM 2-5.
5. True. Par 315 *a* (2), FM 2-5.
6. False. Par 315 *b* (3), FM 2-5.
7. True.
8. False. Movement is frequently regulated by rate of flankers on sides of canyon. Cautious movement should be employed.
9. False. An intermediate objective that can be seen by members of the patrol.
10. True. Par 315 *f*, FM 2-5.
11. True. Par 315 *g*.
12. False. Par 128, FM 2-10.
13. True.
14. False. Par 132 *d*, FM 2-10.
15. False. Par 132 *e*, FM 2-10.
16. True.
17. False. At least two men should go to each flank, if available.
18. False. S-cars advance by bounds; motorcycles, by "leapfrogging."
19. True.
20. True.

The Army Horse's Prayer

"To thee, my master, I offer my prayer. Treat me as a living being, not as a machine. Feed me, water and care for me and when the day's work is done, groom me carefully so that my circulation may act well, for remember, a good grooming is equivalent to half a feed. Clean my feet and legs and keep them in good condition, for they are the most important parts of my body.

"Pet me sometimes, be always gentle with me, so that I may serve you the more gladly and learn to love you.

"Do not jerk the reins, do not spur me when I am going up hill. Do not force me out of the regular gait or you will not have my strength when you need it. Never strike, beat or kick me when I do not understand what you mean but give me a chance to understand you. Watch me and if I fail to do your bidding, see if something is not wrong with my harness or feet.

"Don't draw the straps too tight; give me freedom to move my head. Don't make my load too heavy, and oh, I pray thee, have me well shod every month.

"Examine my teeth when I do not eat; I may have some teeth too long, or I may have an ulcerated tooth and that, you know, is very painful. Do not tie my head in an unnatural position or take away my best defense against flies and mosquitoes by cutting off my tail.

"I cannot, alas, tell you when I am thirsty, so give me pure, cool water frequently. Do all you can to protect me from the sun and throw a cover over me . . . not when I am working, but when I am standing in the cold.

"I always try to do cheerfully the work you require of me, and day and night I stand for hours patiently waiting for you.

"In war, like any other soldier, I will do my best without hope of any war cross, content to serve my country and you and if need be, I will die calm and dignified on the battlefield; therefore, oh, my master, treat me in the kindest way."

A Mulesta and Armored Division

*By Edwin P. Hicks**

THINGS are happening plenty these days at Fort Smith, Arkansas. First in importance, there's the Mulesta, October 10, which precedes the Western Arkansas-Eastern Oklahoma Livestock Exposition, October 11-12.

And then there's another thing—not nearly so important, of course—after 70 years the army's returning to Fort Smith. An armored division is to be stationed here.

The cantonment site and maneuver area comprises 72,000 acres, including hills, flat land, wooded sections and the Arkansas River. The camp's costing $23,000,000. It's to be finished by January 1, 1942. The probability is that another division will be stationed here in addition to the armored division, with 37,000 men at the camp altogether.

But then it's the Mulesta that's important here—

Thousands of people will be on hand for the Mulesta—a day set aside in tribute to that magnificent animal, the mule. (At least 50 per cent of the credit for winning the last war should go to the Missouri mule, you know.)

Anyhow, Fort Smith is considered one of the most important horse and mule markets in the nation—second perhaps only to Memphis, Tennessee. Twelve thousand five hundred mules and ten thousand horses are sold here annually.

Some of them go to the army. When a government buyer comes to the market everyone crowds around just to watch the experts at work. Old horse and mule men here take off their hats to the government buyers.

A little over a year ago the Turkish Army bought quite a few mules here—for use as artillery pack animals. These mules were somewhat smaller than those bought by Uncle Sam for the same purpose. The government artillery mules bought here weighed from 1,150 pounds to 1,275, standing 15.2 to 16 hands.

The mule is a remarkable animal, powerful, durable, the salvation of the small-time farmer and a valuable asset and money-maker for the big shot farmer. A mule will pay for himself many times over. Farmers who know their mules turn a pretty penny by buying mules as three year olds, farming them three or four years, then selling them when they are at their prime and bringing top prices.

But a fellow just can't be serious with a mule. There's something cunning, impish in a mule.

All joking aside, the Mulesta is worth seeing, and also the livestock exposition. The Mulesta with its parade, mule championship contest, auction sale, and its queen coronation ceremony, precedes the livestock exposition.

The Mulesta is proclaimed officially by the mayor. The city officials, with all their dignity, ride mule-back in the Mulesta parade. There are many novel floats—powered by mules or jackasses. There's something incongruous in a pretty girl mounted on a mule.

And now that the army's here, a vigorous attempt will be made to have the military in the parade—if cavalry officers have to be imported for the occasion!

*Chamber of Commerce, Fort Smith, Arkansas.

A section of mules swings into line for the big Mulesta parade

Foreign Reviews

CARDED

Reconnaissance by Light Troops*

By Lieutenant Colonel Schönfeld

DETACHMENTS of light troops are assigned organically to all large troop units. They are intended for special tasks, of which reconnaissance is first and foremost. The following pages are intended to give an idea of the nature and meaning of the term "reconnaissance."

Reconnaissance consists in securing a complete picture of the enemy, such as is necessary for successful, economical troop leading, superior to the enemy's. This is accomplished in various ways.

First, we must draw a sharp line between air reconnaissance, by means of aircraft, and ground reconnaissance, with the help of specialized units of light troops. The two assist each other, and together serve as the eyes and ears of the higher commander; neither can replace the other.

Air reconnaissance is able to get a general picture of the enemy's situation, over a wide area and in a short time. But in the nature of the case the picture is only an instantaneous one; and it should not be forgotten that air reconnaissance is limited by many conditions—action by the enemy, weather, clouds, fog, etc. To keep the situation up to date and to fill in details is the task of ground reconnaissance. And the results of ground reconnaissance are useless unless they can reach the proper authority in time, and can present a complete and comprehensive view.

A matter of prime importance, then, is the use of light troops. They alone can get out ahead of the larger troop units, and use the time thus gained for securing and transmitting information. The reconnaissance elements of the infantry divisions, then, are cavalry and cyclist groups. They can move several times as fast as the infantry, and hence can cover greater areas in

*Translated from *Wissen und Wehr*, Berlin, Germany, January, 1941.

Reconnaissance Elements

shorter time, and get their reports of the situation to the commander in time for him to utilize them in determining the march, the dispositions and the employment of his troops.

In the armored and motorized divisions also, reconnaissance duties have been taken over by special units which can march much faster than the divisions themselves. These are the motorized reconnaissance detachments, variously formed, according to requirements, from armored cars, motorcyclists and other motorized elements.

The general principles of reconnaissance are the same, for cavalry, cyclists, and motorized reconnaissance detachments. The details of execution vary, according to their organization and speed. In any case, their effort is to secure an adequate picture of the enemy's situation in the shortest possible time, and get the information back promptly. A statement of this mission is a sufficient outline for a successful reconnaissance. From this outline we may deduce a great variety of methods affecting the organization, employment and conduct of any reconnoitering detachment. It may safely be said that the conduct of such a detachment is the broadest and most varied task to be found in all military life. It requires of both officers and men a degree of decision, of independent thinking and action, of broad technical knowledge and military skill, such as is required of no other soldier, and such as is quite incomprehensible to the layman. If we follow, in imagination, the action of a reconnaissance detachment in the execution of its manifold duties, we shall find a greater variety of requirements than in any other operation. Even the apportionment of tasks indicates the difference between this and any other unit. An order for the advance or attack of any combat unit can generally be given with clearness and certainty. As a rule it contains only the time of movement and the objective. The formulation of a mission for a reconnaissance detachment includes many points, which are of prime importance for the handling of the detachment itself. It must include all information as to the beginning, the scope, the direction, the time schedule and the objective of our own troops' movements, and also a clear picture of the intentions of the commander. Upon these intentions depend the various tasks which the reconnoitering party may be given. Its commander can not in general be bound to any particular method of carrying out his mission; for among the fundamentals of that mission will appear as a prime factor, the situation and intentions of the enemy. The art of a reconnoitering officer consists in accommodating himself to the continually changing situation of the enemy, without departing from the intentions of his own commander, and still imposing his own will upon the enemy at the proper time and place. Only an accurate evaluation of these three elements will make it possible for him to accomplish his purpose. I say *possible* advisedly; for many factors will appear in the course of execution, which will have a decisive influence upon success.

The first of these factors is the mounted, cyclist, or armored patrol, which must be sent out to find the enemy, according to its own detailed instructions. We may illustrate the action of these patrols most readily by comparison with the human body.

The patrols of a reconnaissance detachment feel forward toward the enemy, like fingers groping in the dark. In various directions, to various distances, at various times and for various purposes, they go their perilous way. Through orders, reports and messages, like the sinews and nerves of the body, they are in constant elastic touch with the commander of the reconnaissance detachment. With untiring energy and infinite nervous tension, the patrol leaders work forward to the enemy, always keeping their orders and the intentions of their commanders before their eyes. Their successive messages and his own observations gradually form themselves in the mind of the reconnoitering officer into a many-colored mosaic, whose lines are here sharp, there vague. This is the first picture of the enemy.

And now a much more difficult phase of the reconnaissance begins. Some of the patrols fail to reach their objectives. Some do not get, from the enemy's reaction, a clear and definite impression of his situation. Some of the messages come through late or not at all. The detachment commander must know how to economize his forces, so as always to be able to send out new patrols at the proper time and place. This requires an inborn aptitude, and is very difficult to learn. Receipt of the first news of the enemy is only the beginning of a new task; it merely gives a clue to the boundaries within which hostile troops may be supposed to be.

A whole series of burning questions must now be answered by the reconnaissance detachment, *e.g.*—

How strong is the enemy?

What infantry has he? Artillery? Tanks? Other arms?

How is he organized and formed?

Is he dug in, or merely resting?

Has he finished his march, or is he just starting?

Where did he come from, and where is he going?

In how many columns is he marching, or preparing to march?

From all these questions there gradually develops a plan for utilizing all the force of the reconnaissance detachment to the absolute limit of its powers.

The second factor influencing the success of a reconnaissance is time. Like Damocles' Sword, this always hangs over the head of the reconnoitering detachment. Every minute, every second wasted cuts down the distance between the main bodies, and hence the freedom of action of the higher command. The commander of the reconnaissance detachment must count his seconds like a miser; but at the same time he must not permit overhaste to nullify the value of the work of his patrols.

The next factor is the messenger service; no military agency is more vulnerable. The burden of transmission, from the patrols to the reconnaissance detachment and on to higher headquarters is borne, not by many, but in each specific case by a single individual—mounted messenger, cyclist, motorcyclist or radio operator. The patrols may show the utmost energy and daring; but the fate of the larger units may depend upon the arrival or loss of a single important message. The messenger may be killed or captured, or some accident may prevent him from reaching his destination. Communication over long distances by radio depends upon the form of the ground, upon streams of water under or above ground, woods, mountains or atmospheric disturbances; and it is rendered difficult by the necessity of coding each message so as to be unintelligible to the enemy. In Poland and in France, as many as 250 radio messages have passed through my hands in a single day.

But the really decisive influence upon reconnaissance is exercised by the enemy himself, who does not want to show his hand. When patrols and detachment have learned all that is possible by skill and artifice, the detachment commander must fight to make the enemy show his actual strength; if the enemy's screen is thin, he may break through it. If the hostile groups are too strong for him, he must maneuver to get around them, to hang on their flanks or rear. A brief extract from the journal of my detachment in Poland will serve to illustrate the foregoing remarks.

About noon on September 10th, 1939, an armored division had forced a crossing of the Narev between the fortresses of Lomza and Ossowioc and broken through the enemy's front. Heavy attacks by infantry were made to widen the gap; meanwhile my detachment was pushed through to the south in the direction of Siedlce.

After a march of about 30 kilometers, a message was received from the patrol ahead of our point, "Village of Zambrow occupied by enemy, am going around via Siedlce." A few minutes later the point surprised the enemy and reached the market place of the village, which is of about 6,000 people. About 100 prisoners with antitank guns were captured.

The enemy, about a battalion, gradually recovered from his surprise, and the defense grew stronger. The reconnaissance detachment broke off the fight and went ahead in its original direction. A radio message was sent to the division, "Zambrow is strongly held by the enemy; should be cleared out."

About 20 minutes later we reached another group of villages, weakly held by the enemy; the tanks forced their way through, firing without a halt.

Lieutenant P's flank patrol went into a big wood on the right hand side of the road; the point had already gone ahead. Suddenly a heavy fire of machine guns was opened, and the patrol had to lie down to fire. Detachment headquarters halted for a few minutes, while all available officers and men made a reconnaissance in force against the woods. There was a brief fight; several Polish officers and about 30 men were captured, and their regimental numbers determined.

Meanwhile Lt. P. with his armored reconnaissance car pushed ahead through the woods past the halted columns, and carried his reconnaissance on for 4 kilometers. He then started to turn about, but at that moment several Polish officers came out of the woods against him; one of them had a hand grenade in his hand. P. leaned far out of his car as it turned, and fired his pistol at 3 paces; the grenade blew up in the officer's hand and tore him to pieces. The patrol came through uninjured.

At this moment I received a radio message from the division, forwarded to me by a breathless motorcyclist. It read: "Change direction from south to east, direction Brest-Litovsk." I broke off the fight, and all the men returned to their cars. Prisoners and wounded were put in trucks and sent to the rear. Radio messages were sent to the patrols, 30 km ahead, to change direction to the east. A new point was organized as we moved out, and the old one recalled by radio. All this was done in a few minutes; all officers and men concerned worked together perfectly, and the maneuver was a complete success. Report was sent to the division by radio. "Hostile columns of all arms, at least a regiment, resting in Zazeby Wood and Wacholy; regimental number ascertained from prisoners." And the reconnaissance was carried farther into the enemy's territory.

Besides actual reconnaissance, many other difficult tasks have to be accomplished in hostile territory—destruction of important railways, interruption of the enemy's communications, repair of bridges, and countless other things. For instance, Lt. Pr. with his reckless patrol worked far into the rear areas of the French Eastern Army on June 15, 1940, blew up an important railway junction on the Scane, and held possession of it after a surprise attack upon a force of many times his own strength. After six hours' fight a whole infantry regiment was taken, and 15 railway trains with over 500 cars and 50 locomotives.

In this brief description I have sought to give an idea of the exhausting work which falls to the lot of a reconnaissance detachment. When the people at home hear and read of the exploits of the army, they may readily judge how great a part has been played by the reconnaissance detachments in the work accomplished in all the theaters of operations.

Red Cavalry Effective Against Tanks and Infantry*

MOSCOW, July 19.—The Soviet press reports several examples of highly important tasks carried out by the Red Cavalry since the first days of the war. Acting in coördination with infantry and tanks, it makes full use of its main quality—high *maneuvering* capacity.

When a Soviet cavalry regiment launched an offensive near the town of "P" the Nazis opened heavy fire, but the horsemen continued to advance. They were followed by an infantry battalion which charged the enemy lines. Russian bayonets forced the enemy to retreat.

That same day a combined cavalry and infantry attack defeated a Nazi infantry regiment consisting almost totally of Hitler Youths, many wearing the Iron Cross.

Regiments of the "X" cavalry division captured 65 motorcycles, two artillery batteries and important documents near a German headquarters.

In one instance a cavalry squadron dashed through a column of attacking German tanks and cut off their infantry, which fled in panic.

*From the *Information Bulletin*, Embassy of the Union of Soviet Socialist Republics, Washington.

BOOKS
for the Horseman

A Horseman's Handbook on Practical Breeding, by *Colonel John F. Wall,* U. S. A. Retired	$ 4.00
Hand Book for Horse Owners, by *McTaggart*	2.75
Horse Training, Outdoor and High School, *Beudant* (translated by Lt. Col. J. A. Barry, U. S. Cavalry)	3.00
Horseshoeing, *Churchill,* 1933	1.20
Horsemanship, by *Brooke*	7.00
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(Books on horsemanship by The Cavalry School are listed with the Departmental Texts on inside of back cover.)

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Book Reviews

Advice For the Young Army Leader

LEADERSHIP FOR AMERICAN ARMY LEADERS. By Major Edward Lyman Munson, Jr. Foreword by Brigadier General E. F. Harding, U. S. Army. Washington: The Infantry Journal, Inc., 1941. 96 Pages; $1.00.

The greater part of *Leadership for American Army Leaders* is directed toward the small-unit leader, the company officer and noncom. But for all that may be true, there is plenty in it also that a major general can profit from reading and thinking over in reflection upon his own methods of leadership. In fact, one point that Major Munson might have brought out more forcefully is the fact that though a young leader may strive with much success toward perfecting his ability to lead, this very striving itself must run through the whole length of his military career. It is not within the capabilities of humankind to become the perfect leader and then give no more thought to the matter. A Chief of Staff himself has to give many a thought —and I daresay sometimes well-studied thoughts—to his own acute problems of leadership and in the process must often take stock of his own methods and character in endeavoring to avoid error.

Now reference to leaders of high rank brings us right along to another side of leadership that might possibly be considered as an omission from Major Munson's book. I refer to the effect of age upon the leader. This he does not touch upon and undoubtedly for the very good reason that he feels that a mere twenty years of service is not enough to warrant his tackling a subject both tender and tough—tender from the personal viewpoint of the leader who begins to think about the mounting years, and tough from the viewpoint of those serving under a leader who—usually without realizing it—takes out on his subordinates the worries attendant upon passing the prime of life. But perhaps the author is right in not considering this particular aspect of leadership, since it is plain to see that he has the young leader mainly in mind.

Leadership for American Army Leaders shows no sign whatever of ideas adopted directly from foreign thought on its subject. It has a purely American slant and this especially adds to its value. You have but to read a British or Australian book on military leadership, not to say a Nazi one, to realize how different in many major and minor respects are the problems of leading men in our own Army.

The book contains a number of illustrative passages but a few more still would have been helpful. There are very few abstract discussions of the qualities of leadership in the book and all that it does contain are brief. It gets down to business and stays there most of the time. The style of writing is likewise generally straightforward, though there are one or two signs of haste in it.

THE ARMY WIFE. By Nancy Shea. Harper and Brothers. New York. 297 pages. $2.50.

My army wife joins me in recommending this book to the Service.

This volume appears at a most opportune time. As the result of the Army's recent groupment and regroupment of units, numerous changes in unit stations have resulted—with the accompanying tribulations for the army wife. In less hectic times the husband had more time to be helpful, but now the army wife is often bewildered by the ever increasing number of chores that descend upon her, both civilian and military. This applies particularly to army brides and wives of little army experience.

In *The Army Wife* the author has shown keen perception and understanding in her effort to present the answers to those problems with which army women are usually confronted. There are many helpful suggestions relative to etiquette, customs and home management peculiar to army life. Even army women of extensive service experience will find many helpful ideas.

Unquestionably, *The Army Wife* is destined to become the "Emily Post" of the army. It would be a most acceptable gift for any army wife. It fills a definite need.

MY FATHER IS A QUIET MAN. By Tommy Wadelton. Coward-McCann, New York. 173 pages. $1.50.

In our November-December, 1940, issue our readers will doubtless recall that we carried one of Tommy's inimitable stories, "Remounts," with an excerpt from Mrs. Roosevelt's column, "My Day," in which she recommended Tommy's previous book, *My Mother Is A Violent Woman.* Well, Tommy (fourteen now) is still pen-pushing and, responding to popular demand, his latest offering is a delightful characterization in which he, in his naïve way, biographically tells of his father's escapades, and romance with the "violent woman."

This army story by an army boy is truly a gem—humorous and entertaining! When one has time for relaxation during these uncertain and busy days *My Father Is A Quiet Man* requires absolutely no effort to read and enjoy.

THE PRIVATE PAPERS OF PRIVATE PURKEY. By H. I. Phillips. Harper and Brothers. New York. 121 pages. Illustrated. $1.50.

This compilation of hypothetical letters written by Private Purkey to his mother is the most refreshing and hilarious army human interest story that has come to our attention. These letters have appeared since early this year as the feature of Mr. Phillips' widely read column, "The Sun Dial" in the *New York Sun.*

Purkey's comments on the army are typically American—and his spelling is as funny as his experiences. Be sure to meet Private Purkey. He is every mother's son serving his bit with Uncle Sam.

A YANK IN THE R.A.F. By Harlan Thomas. New York: Random House, Inc., 1941. 246 Pages; $2.00.
A good yarn that flows fast. Nothing serious.

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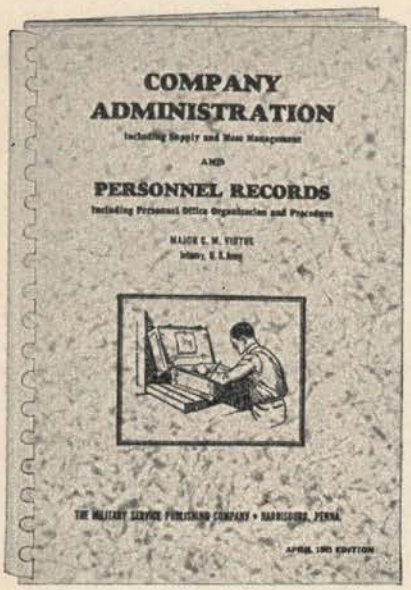

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A life of André Maginot written by his sister.

IF JUDGMENT COMES. By Alfred Noyes. New York: Frederick A. Stokes Company, 1941. 46 Pages; Illustrated; $1.50.

—Force and fire in this dramatic indictment of Hitler.

ARMIES OF SPIES. By Joseph Gollomb. New York: The Macmillan Company, 1941. 246 Pages; $2.50.

—A new edition.

PROBLEMS OF MODERN EUROPE. By Jackson and Lee. New York: The Macmillan Company, 1941. 127 Pages; $1.75.

—Of war and economic problems.

MILITARY SCIENCE TODAY. By Lieutenant Colonel Donald Portway. New York: Oxford University Press, 1941. 154 Pages; Illustrated; Index; $1.75.

—Author of *Mechanisation in Land Warfare.*

TOUGHEN UP, AMERICA! By Dr. Victor G. Heiser. New York: Whittlesey House, Inc., 1941. 216 Pages; Index; $2.00.

—Sound advice regarding health.

SEMANTICS: THE NATURE OF WORDS AND THEIR MEANINGS. By Hugh Walpole. New York: W. W. Norton & Co., Inc., 1941. 259 Pages; Index; $2.50.

ZAPATA THE UNCONQUERABLE. By Edgcumb Pinchon. New York: Doubleday, Doran and Company, 1941. 332 Pages; Maps; $3.00.

—An entirely new conception of Mexican revolutionists.

MILITARY AND NAVAL RECOGNITION BOOK. By Captain J. W. Bunkley, U. S. Navy. New York: D. Van Nostrand Company, 1941. 297 Pages; Illustrated; $2.50.

—A new edition.

HELL-BENT FOR WAR. By General Hugh S. Johnson. New York: The Bobbs-Merrill Company, 1941. 155 Pages; $1.50.

General Johnson's opinion of Hitler, et al.

MILITARY MEDALS AND INSIGNIA OF THE UNITED STATES. By J. McDowell Morgan. Glendale, California: Griffin-Patterson Publishing Co., 1941. 141 Pages; $3.00.

—Descriptions and pictures.

SOCIAL CASE WORK IN NATIONAL DEFENSE. By Pauline V. Young. New York: Prentice-Hall, Inc., 1941. 216 Pages; Index; $2.50.

—Is both a study and a practical handbook.

THE FIGHT FOR THE PACIFIC. By Mark J. Gayn. New York: William Morrow & Company, 1941. 370 Pages; Index; $3.00.

—Is an ably done book.

THE SOONG SISTERS. By Emily Hahn. New York: Doubleday, Doran & Company, 1941. 320 Pages; Illustrated; Index; $3.00.

—Of Charlie Soong and his three famous daughters, Madame Sun Yat-Sen, Madame Chiang Kai-shek, and Madame Kung Hsiang-hsi.

BERLIN DIARY. By William L. Shirer. New York: Alfred A. Knopf, Inc., 1941. 605 Pages; Index; $3.00.

—Has received a big hand.

SAFETY IN FLIGHT. By Assen Jordanoff. New York: Funk & Wagnalls, 1941. 325 Pages; $3.00.

—The main points of modern flying.

HAWAII, USA. By Bob Davis and George Armitage. New York: Frederick A. Stokes Co., 1941. 270 Pages; $3.00.

An easy going informal book on the Hawaiian Islands. Many excellent photographs as illustrations. Good, light reading for those who know Hawaii and for those who don't.

PHILIPPINE SAGA. By Marius John. House of Field, New York. 247 pages. $2.00.

This book is written in fictional style; however, it is replete with authentic detail of historical happenings, tribal and village life.

The author, with journalistic background, has spent many years in the Philippines, first as a member of the U. S. Army Medical Corps, and later as a teacher and trainer of teachers. His position enabled him to observe, first-hand, many extraordinary incidents which he relates in forceful and fascinating style.

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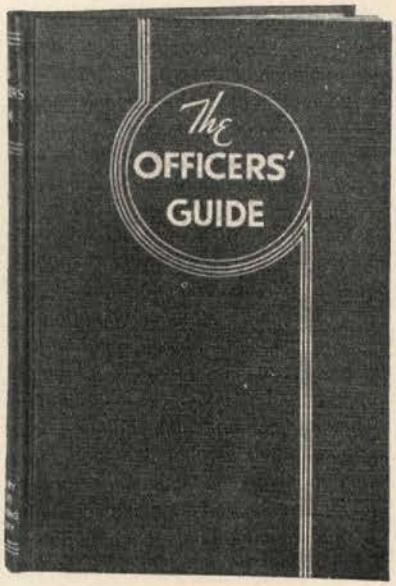

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Horse Feathers

Round Pegs in Round Holes

Isn't it strange, or is it, that the best *road-hogs* make the best tank drivers? The scout car is Seventh Heaven for the fender-smashing buckaroo who likes to tour the entire United States in *nothing flat*. But, for the solo motorcycle, ah! That's for the *Lothario* who can imagine that his pup tent packed behind him is his funny looking bunch of honey girl in slacks and high heels.

✦ ✦ ✦

TROOPER: "Hey, waiter, bring me a custard pie!"
WAITER: "You wanna eat it or t'row it?"

✦ ✦ ✦

ABE: "My son has just got an army commission."
IKE (rubbing his hands): "How much?"

✦ ✦ ✦

In a crisis the big mind thinks in repose, while the little mind prances around like a cat chasing its tail—extreme agitation, but getting nowhere fast.

✦ ✦ ✦

"Don't keep calling me 'General.' I'm only a lieutenant!"

" 'Scuse me, boss; I ain't disputin' yo' word, but any military gint'man dat gives dis old colored waiter a dollar tip is jes' natchally a gineral."

✦ ✦ ✦

"Why do you call your horse *Fortune?*"
"Can't you see he's a hunter?"

✦ ✦ ✦

"How do you figure that the man who wins at cards nearly always loses at horses?"
"Well, you can't shuffle horses."

✦ ✦ ✦

The place for grit is under the wheels and not in the gears!

✦ ✦ ✦

"Why doesn't that trooper get a hair cut?"
"Sheer fright, I guess."

Dood Dod!!

MANEUVER VETERAN (in hospital with sprained ankle and entertaining friends): "No foolin', I was so widdled wid woolets my wuddy wehind me tumplained of the dwaft."

✦ ✦ ✦

At Replacement Training Center, troopers were taking turns giving commands. Playing safe, they were giving "Fours right" and "Fours left."

The Instructor finally ordered: "Give a real command; something involving a large body of men—Next man!"

A weak voice chirped: "Army and Navy, attention! Marines, parade rest!"

✦ ✦ ✦

"Ever in history the Four Horsemen of the Apocalypse—War, Famine, Pestilence, and Death—have ridden together."

✦ ✦ ✦

"Asking a soldier about his morale is like asking a woman about her virtue—it should go without saying, and if it's questioned it's likely not to exist."—*Ft. Worth Press.*

✦ ✦ ✦

A true soldier does not waste time and effort in search of an alibi. He admits the truth and profits by his mistakes. If he cannot go through a wall or over it, or under it, or around it, he goes around the world and comes up on t'other side.

✦ ✦ ✦

A cavalry recruit was being initiated into the mysteries of equitation when his horse bolted. "Where the deuce are you going?" shouted his instructor.

The reply came back in gasps, "Don't know, sir—but this horse's home—is at Front Royal—Virginia."

✦ ✦ ✦

Shook All Over

SHE: "Tell me, trooper, when you were on maneuvers and the cavalry swam the river full pack, were you cool in the hour of danger?"

HE: "Cool? I actually shivered."

HORSE SENSE *is just* STABLE THINKING

WAR DEPARTMENT CHANGES, CAVALRY PERSONNEL
(From July 12, 1941 to September 6, 1941)

Second Lieutenant Albert W. Abbott, from Fort Riley, Kan., to Off., Provost Mashal Gen., Washington, D. C.

Lieutenant Colonel F. A. Allen, Jr., relieved Office, C. of S., Washington, D. C., August 10; assigned Armd. Force, Fort Knox.

Captain Robert E. Arnette, Jr., from Philippine Dept., to 4th Armd. Div., Pine Camp, N. Y.

Lieutenant Colonel W. B. Augur, relieved Fort Rilev; detailed as member of G. S. C.; assigned G. S. with troops, and GHQ, Army War Callege, Washington, D. C.

Major S. C. Babcock, assigned additional duty as asst. mil. att. for air to Japan.

Colonel J. A. Baer, relieved Hq., 2nd C.A., Governors Island, August 21; detailed as member of G. S. C.; assigned G. S. with troops, and as C. of S., Hq., 2d C. A., Governors Island.

Lieutenant Colonel Frank H. Barnhart, relieved 2d Cav. Div., Fort Riley, Kans.; assigned Cav. Rep. Tr. Cen. at that station.

First Lieutenant Louis J. Beasley, relieved Fort Benning, Ga.; assigned 2d Cav. Div., Fort Riley, Kans.

Captain George B. Bennett, from Fort Brown, Tex., to faculty, the Cav. Sch., Fort Riley, Kans.

Captain Everett I. Bibb, from Presidio of Monterey, Calif., to Hawaiian Dept., sail Sept. 5, San Francisco.

Second Lieutenant Edwin W. Bickhart, from Indiantown Gap, Pa., to Cav. Rep. Tr. Cen., Fort Riley, Kans.

Colonel S. V. Bingham, detailed as member of G. S. C.; assigned G. S. with troops, and Hq., 2d C. A., Governors Island; relieved C. C. C., Baltimore, July 25.

First Lieutenant Harold T. Bishop, from Indiantown Gap, Pa., to 3d CASC, A. P. Hill Military Reservation, Pa.

Lieutenant Colonel Howard A. Boone, from Ft. Omaha, Neb., Sept. 10, to CCC, Williamsport, Pa.

Captain Donald A. Brown, from Fort Ord, Calif., Aug. 29, to off. of AG, Washington.

Second Lieutenant Elwin O. Brown, from Camp Claiborne, La., to Panama Canal Department, sail August 26, New Orleans.

Major Daniel P. Buckland, Fort Knox, Ky., August 29, to AGD, 1st Armored Div.

Major C. W. Burkett, relieved Louisville Male High School, Ky.; detailed Owensboro High School, Ky.

Second Lieutenant Duange S. Cason, from Fort MacArthur, Calif., to Cav. Rep. Train. Cen., Fort Riley, Kans.

Second Lieutenant Stephen Chamberlin, from Fort Riley, Kans., to Philippine Dept., sail San Francisco, August 7.

Lieutenant Colonel Philip C. Clayton, from Philippine Dept., to 4th Cav., Fort Meade, S. Dak.

Colonel J. K. Cockrell, relieved detail as member of G. S. C., assignment to W. D. G. S., and office, C. of S., Washington, D. C.; assigned duty connected with N. G. affairs, Hq., 3d C. A., Baltimore.

Major J. H. Collier, relieved Fort Myer, Sept. 15; assigned 2d Armd. Div., Fort Benning.

Lieutenant Colonel R. W. Cooksey, relieved detail as member of G. S. C., assignment G. S. with troops, and T. H.; assigned Hq., Armored Force, Fort Knox.

Major Demmie H. Cox, Ft. Bliss, Tex., August 1, to asst. const. QM, Fort Bliss, Tex.

Second Lieutenant Grey Dresser, from Fort Oglethorpe, Ga., to faculty, Cav. Sch., Fort Riley, Kans.

Lieutenant Colonel Charles W. Fake, retired, October 1, disability incident to service.

Colonel H. A. Flint, relieved 7th C. A. Service Command, Fort Des Moines; assigned 2d Armored Div., Fort Benning.

Captain Jules K. French, Jr., Governors Island, N. Y., to G. S. with troops, 2d Corps Area.

Major Alan L. Fulton, Staunton Military Academy, Staunton, Va., in add. to other duties.

Major R. A. Gardner, relieved recruiting, Overseas Disch. and Repl. Depot, Fort McDowell, August 18; assigned 4th Armd. Div., Pine Camp, N. Y.

Lieutenant Colonel Mack Garr, detailed as member of G. S. C.; assigned G. S. with troops, and Hq., Central Defense Council, Memphis; relieved Camp Forrest, Tenn.

Major Edwin P. Geesey, from Camp Polk, La., Sept. 1, to GHQ, Army War College, Washington, D. C.

Major Alexander George, relieved Cav. R. T. C., Fort Riley; assigned C. Z., sailing from New Orleans, September 24.

Lieutenant Colonel J. I. Gibbon, relieved recruiting, Overseas Discharge and Replacement Depot, Fort McDowell; assigned Seattle Port of Embarkation.

Major Joseph M. Glasgow, from Presidio of San Francisco, Calif., August 29, to AGD, 2d Cav. Div., Fort Riley, Kans.

Second Lieutenant William T. Gordon, Ft. Riley, Kans., to 2d Cav. Div., that station.

Lieutenant Colonel Robert C. Graham, Ft. Sheridan, Ill., to 103d CA Bn., Ft. Sheridan, Ill.

Second Lieutenant Emerson W. Grant, from San Angelo, Tex., to 3d Armd. Div., Camp Polk, La.

First Lieutenant Jack L. Grubb, from Fort Benning, Ga., July 23, to Aberdeen Prov. Ground, Md.

First Lieutenant Clifford Hardwicke, Jr., from Fort Bliss, Tex., to Philippine Dept., sail Sept. 25, San Francisco.

Major T. L. Harrold, relieved 11th Cav., Camp Lockett, Calif.; assigned recruiting, Hartford, Conn.

Major William B. Hawthorne, Fort Monroe, Va., to instructor, CA Sch., that station.

First Lieutenant Edward C. Heuss, Fort Riley, Kans., to 7th CASC, that station.

Captain William C. Hobbs, Jr., from Ft. Benning, Ga., August 10, to 6th Cav., Fort Oglethorpe, Ga.

Colonel A. W. Holderness, relieved as member of G. S. C., assignment G. S. with troops, and Philippine Islands; assigned Hq., 9th C. A., Presidio of San Francisco.

Major Floyd M. Hyndman, from Ft. Knox, Ky., to AC Proving Ground, Elgin Field, Fla.

Captain George W. Johnson, from Selfridge Field, Mich., to Langley Field, Va.

Captain O'N. K. Kane, relieved Fort Myer, September 2; assigned Santiago, Chile, as assistant military attaché.

Lieutenant Colonel C. S. Kilburn, Washington to Fort Bliss, Texas.

Lieutenant Colonel James A. Kilian, Chicago, Ill., to Hq., 6th CA, that station.

Second Lieutenant Richard W. Kline, from home, August 20, to Spartan Sch. of Aeronautics, Tulsa, Okla.

Colonel Herman Kobbe, to Harvard Sch., North Hollywood, Calif., in add. to other duties.

Lieutenant James M. Lettig, relieved Camp Bowie; assigned Hawaiian Dept.

Captain Horace H. Locke, relieved Fort Sill, Okla.; assigned Hawaiian Dept.

Second Lieutenant Thomas L. McKnight, transferred to Air Corps on July 22, ranking from July 1.

First Lieutenant Lloyd H. Magar, from Ft. Knox, Ky., Sept. 2, to Geiger Field, Spokane, Wash.

Lieutenant Colonel John E. Maher, relieved at Fort George G. Meade, Md., effective about Sept. 3; assigned 3d Cav., Fort Myer, Va.

Major O. M. Massey, relieved Guthrie High School, Okla.; assigned Hq., 8th C. A., Fort Sam Houston.

First Lieutenant T. E. Matlack, relieved 4th Cav., Fort Meade, S. Dak., Oct. 1; assigned 3d Armored Div., Camp Polk, La.

Lieutenant Colonel J. G. Monihan's orders amended to assign him Hq., Philippine Dept.

Captain Edward B. Murphy, Fort Riley, Kans., Aug. 11, to 17th QM Sq., that station.

Colonel Henry McE. Pendleton, prior orders amended, from Fort Bliss, Tex., Sept. 30.

First Lieutenant L. E. Peterson's orders relieving him Fort Bliss, revoked.

Captain Louis B. Powell, from Bowman Field, Ky., to Hq., Army Air Force, Washington, D. C.

First Lieutenant Claude A. Pritchett, Jr., from Fort Jay, N. Y., to Panama Canal Dept., sail Sept. 20, New York.

Lieutenant Colonel Brock Putnam, relieved recruiting, Hartford, Conn., August 18; assigned Cav. R. T. C., Fort Riley.

First Lieutenant Francis J. Richter, from Jackson Bks., La., Sept. 16, to Office, Military Intelligence Div., New Orleans, La.

Captain Russell V. Ritchey, prior orders further amended, to Philippine Dept., sail Sept. 18, San Francisco.

Captain Andrew G. Russell, Jr., from Kelly Field, Tex., to Philippine Dept., sail Sept. 5, San Francisco, Calif.

Captain Joseph W. Scobey, prior orders amended, from Fort McPherson, Ga., Sept. 13, to office of C. of S., Washington, D. C.

First Lieutenant Alexander P. Sheridan, from station indicated, to Hq., Army Air Forces, Washington, D. C.

Second Lieutenant Joseph M. Siciliano, from Fort Myer, Va., to Philippine Dept., sail San Francisco, Aug. 7.

Maj. Elbridge H. Springfield, Fort Riley, Kans., to 2d Cav. Div., that station.

Major John H. Stadler, Jr., assigned office of Chief of Cavalry, Washington, effective upon completion of present tour of foreign service.

Second Lieutenant Chester G. Stewart, from Puerto Rican Dept., to 2d Reconnaissance Troop, Fort Sam Houston, Tex.

Lieutenant Colonel Harold P. Stewart, relieved CRTC, Fort Riley, effective about Aug. 19; assigned 3d Corps Area Service Command, with station at Fort George G. Meade, Md.

Lieutenant Colonel Robert P. Stout, from Governors Island, N. Y.; to GS with troops, First Army.

Captain E. H. F. Svensson, Jr., relieved Pine Camp, N. Y.; assigned office, C. Sig. O., Washington, D. C.; previous orders revoked.

Colonel E. W. Taulbee, relieved detail in I. G. D. and Hq., 8th Army Corps, Brownwood, Tex., July 21; detailed O. R., 8th C. A., San Antonio; previous orders revoked.

Second Lieutenant D. V. Thompson's orders amended to assign him Spartan School of Aero., Tulsa, August 20, for flying training.

Captain Philip W. Tiemann, from Ft. Riley, Kans., Aug. 10, to Armored Force Rep. Train. Cen., Fort Knox, Ky.

Major F. T. Turner will retire July 31, with rank of lieutenant colonel; physical disability.

Second Lieutenant George D. Walraven, Jr., from Fort Sheridan, Ill., to Panama Canal Dept., sail October 4, New York.

Captain Wyndham K. White, from Fort Bliss, Tex., to assistant military attaché, Quito, Ecuador.

Lieutenant Colonel Ernest A. Williams, from additional duty, GHQ, Army War College, Washington, D. C.

Lieutenant Colonel R. C. Winchester, relieved 1st Cav. Div., Fort Bliss, August 1; assigned recruiting, Little Rock, Ark.

Captain Merrill D. Wish, from Ft. Devens, Mass., to AC, Panama Canal Dept., sail New York, August 28.

Major Robert M. Wold, from Ft. Sheridan, Ill., Aug. 19, to office of IG, Washington.

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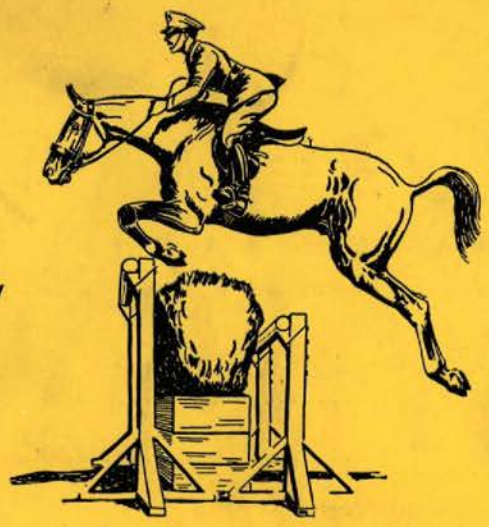

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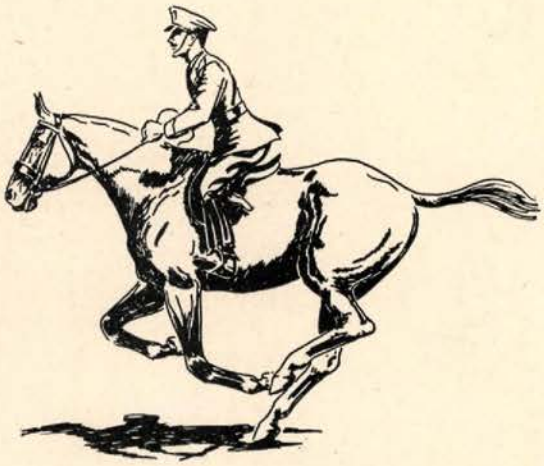

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The WEDGE and

German Tactics Against the Russians

THE outstanding characteristic of the German operations in the Campaign in the West during 1940 was the decisive rôle of the armored forces. At Sedan in May and again along the Aisne in June, Panzer divisions were hurled through the gaps that had been created by the combined action of the other arms. These armored forces, with the foot divisions following as rapidly as possible, pressed on relentlessly without regard to the safety of their own lines of communication until they either reached the English Channel or the Swiss border. The ruthless impetuosity of these daring tactics seemed to unnerve the French Army and caused its rapid collapse. The Maginot Line proved to be a collosal death trap!

Successful as these tactics proved against the French, they do not appear so far to have been employed by the Germans in the Russian campaign. This is due in part to the vastness of the theater of operations but mainly to the number and quality of the Soviet troops in both training and equipment, which makes them stubborn and dangerous opponents. As a result, the Germans have found it impossible to take liberties with these adversaries whose unique morale causes each unit and each individual to fight to the death.

As a rule the German armored forces in Russia have advanced cautiously in a wedge-like formation, closely supported by the foot infantry divisions. In addition, the Air Force has rendered close support to the ground troops, seldom operating more than 200 miles behind the hostile front. This is shown diagramatically in Figure 1.

In this wedge formation, Russian forces that advance between or are by-passed by the armored divisions are dealt with by the advancing German infantry divisions.

The tactical result of the operations of these German armored wedges, closely supported by the infantry and aviation, has been the continuous breaking off and surrounding of portions of the Russian forces. This encirclement of hostile forces is called by the Germans a *Kessel*. This is derived from a German hunting term *kesseljagen*, in which the game, having been encircled, is driven in from all sides toward the center for the kill.

In case the *kessel* is very large it is broken up into smaller areas by the armored forces.

Thus the two great concepts of the *wedge* and *kessel* stand out as characteristic of the German operations in the East. The strategical plan of the two tremendous encirclement battles of Smolensk and Kiev were based on the successful carrying out of these two tactical operations.

Field Marshal Gerd von Runsted, who is credited with the great "kessel" of Kiev.

BATTLE OF SMOLENSK

An official report of the German High Command describes the battle of Smolensk as follows:

"During the breakthrough to the east and northeast of Smolensk by Panzer and motorized infantry divisions, the foot infantry divisions in spite of the heaviest counterattacks covered the flanks of the armored shock wedge, which was attacked time and again by the enemy, and carried out the encirclement of the enemy forces that had been broken through by the armored units. As a result, a mighty battle occurred in the gen-

KESSEL

eral area: Polotsk, Vitebsk, Smolensk and Mogilev—an area 250 km. wide and 150 km. deep. In almost four weeks of fighting the Soviet forces sought to regain their freedom, fighting with the courage of desperation and suffering enormous losses, while new troops were thrown into the battle to relieve them. All these attempts failed due to the flexibility and tenacity of the German troops."

The form of the battle of Smolensk is typical of all the operations in the East and is indicative of the predominant part played by the two great concepts *wedge* and *kessel*. From the first day of fighting and continuing throughout the operations Panzer wedges were a prominent feature, thrusting themselves deep into the enemy front and making a breach. These shock wedges executed their breakthrough operations with extraordinary boldness, often with flanks uncovered and the enemy on the right, on the left, in front and to the rear, where the Russians would again assemble after the passing of the wedge.

These wedges were a necessary preliminary for the *kessel* operations in that they formed the wall separating the parts of the Soviet front and divided the Reds into groups.

These wedges of armored and motorized troops were widened and covered by the infantry divisions so that the German infantry had to make almost incredible marches in order to keep up with the Panzer formations and be able to cover the flanks of the shock wedge and carry out the encirclement and destruction of the Russian groups that were cut off. Germany then, was deficient in horse cavalry.

So in this great battle of Smolensk there were many combat centers; the manifold nature of the separate operations was confusing even to the German troops who were not acquainted with the operation as a whole. The vast battlefield was broken up into numerous strong points of resistance and encircled areas of greater or less size in which the Russians were destroyed. These encirclement operations were carried out as a rule in the following manner: After splitting off an enemy group the shock wedge would then swing to the right or to the left and by quick turns cut out a sector from the enemy front, then with extraordinary rapidity, before the enemy realized it, the encirclement would be completed.

So at times there were situations when the location of the front was known only to the German High Command, while the individual soldier had the impression that the front was everywhere—in front, behind and to the right and to the left.

Due to the tenacity of the Russian defense and the way their troops preferred to fight and die rather than to surrender, every encircled area became a bloody battlefield. If it is remembered that the Russians are very skilled in the construction of field works, that they are masters of camouflage and know how to exploit to the full the possibilities of every terrain feature, then it can be understood that the desperate masses in the encircled areas utilized the areas for defense in a manner that was most effective. Every village, every house, every wall, every strong point was utilized, and natural obstacles were also used in the defense and their organization completed by barriers. So then every *kessel* was a fortified area in which there were not only considerable masses of men for defense but also large quantities of arms and matériel.

The German troops, having completed an encirclement operation, often had to use considerable forces in cleaning up the fortified area. In these *kessels,* the Russians were like game driven together trying to break out in all possible directions. At one encircled area, where the Soviets made a particularly desperate attempt to break out, the Germans claimed that only three hundred Russians were captured while two thousand were killed. This gives an idea of the fierce resistance offered by the trapped masses. If it is kept in mind that in the great encirclement battles of Smolensk or Kiev the fighting was raging simultaneously in many of such encircled areas, then one can realize the effectiveness and the destructive power of such operations when both sides use enormous masses of men and matériel. The narrowing of the encircled area is the final stage in the

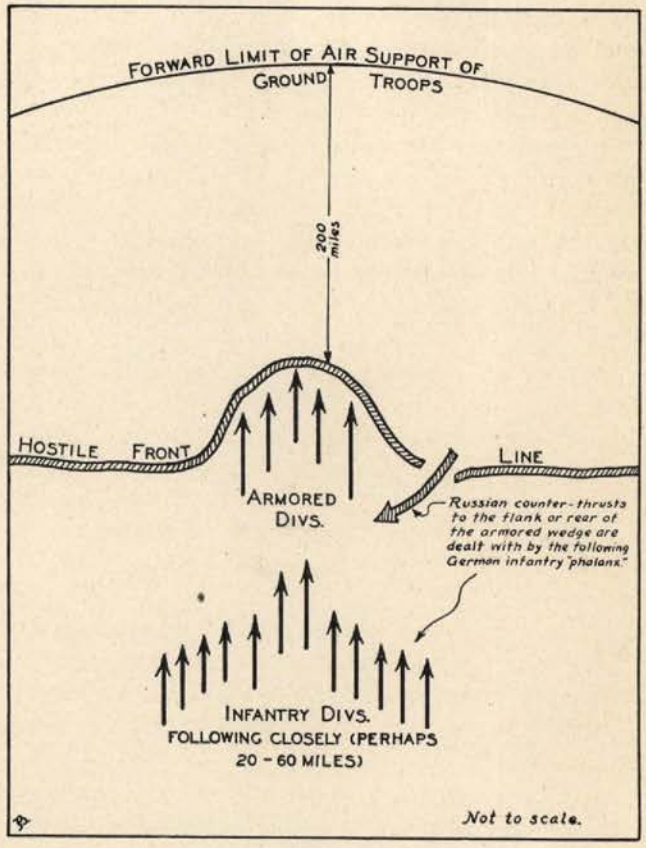


Figure 1

strategy of encirclement and destruction, which was executed with such extraordinary success by the German command in the East, and which aims not only to defeat and drive back the giant masses of the Soviet armies, but to surround and destroy them.

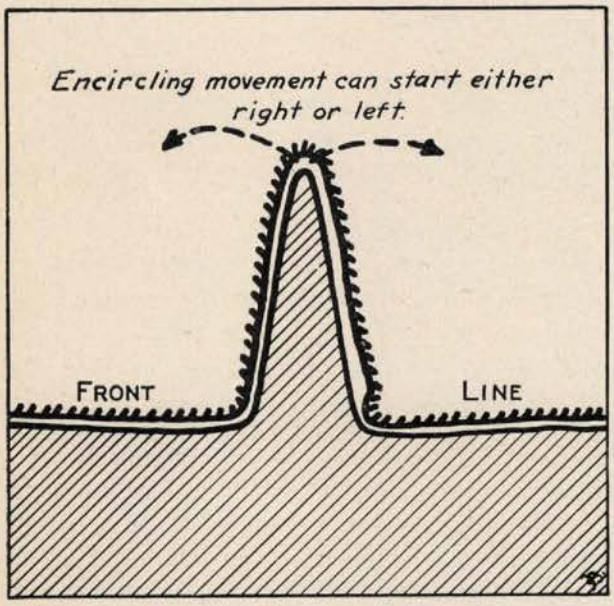


Figure 2 (1)—The wedge is the start of the kessel.

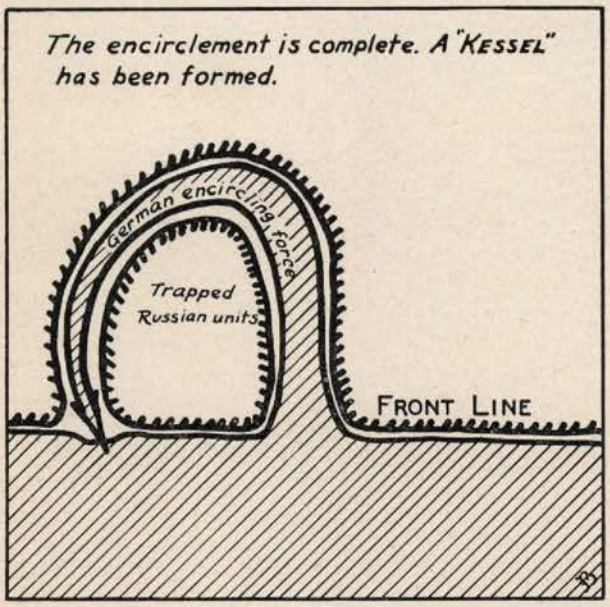


Figure 2 (2)—According to standard military doctrine, a breakthrough should be exploited by strong following forces who plunge headlong toward the hostile general reserves or toward areas of vital strategic importance. Also there may be a general fanning out in the open country in rear of the front. This could not be done in Russia. The so-called "open country" was full of Red units bent on counterattack. Hence we see the Germans adopting a new style of warfare in which the breakthrough force doubles back on itself. In so doing it completes an encirclement of a local portion of the enemy; repeated time and again this process destroys the enemy more or less in place, without the necessity of strategically deep and risky advances.

It goes without saying that the employment of this system of *wedge* and *kessel* operations demands troop leadership of the highest quality and one that can act with lightning like rapidity. In addition, the training and battle power of the troops involved must be developed to the highest degree. Subordinate commanders are often "on their own" for days at a time. Even when they are completely surrounded by superior forces (as happened frequently to units comprising the German wedges), the individual commanders must retain full faith that the eventual working out of the general plan will liberate them. Radio control has been exploited to a high degree.

(Concluded on page 9)

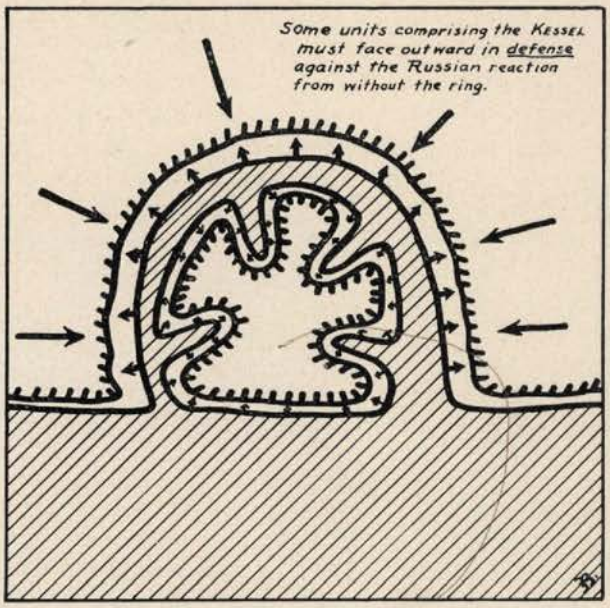


Figure 2 (3)—Sub-wedging the kessel. The German forces facing inward act offensively while at their backs are others acting defensively.

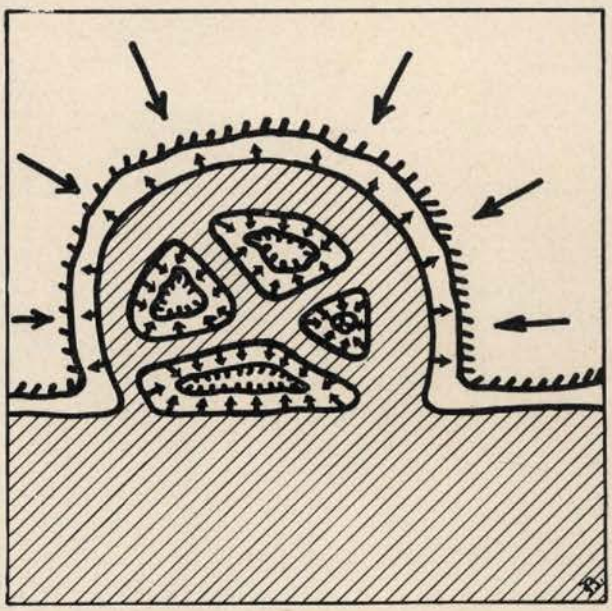
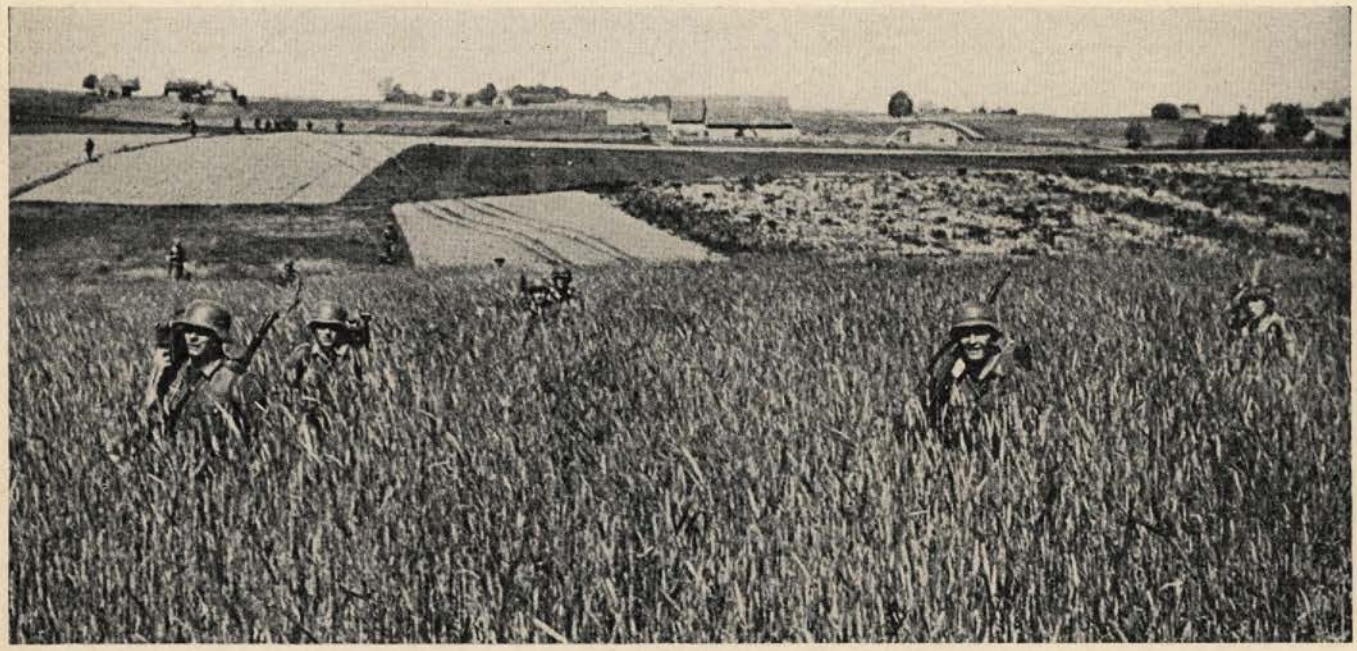


Figure 2 (4)—The Kill. Sub-kessels and final driving-in operations. The U. S. press seems to have failed to grasp the significance of "kessel." It has been miscalled "kettle."

A tank trap constructed at a cost of immense labor by thousands of Russian peasants has been dug hastily across the vast steppes to stop the German Panzers. What happened? The German motorized infantry and horse elements came up under cover of darkness, took refuge in the ditch, tore down ramps for the tanks to use; meanwhile reducing isolated redoubts by their usual storm-troop methods.

The beginning of the wedge. The vanguard of the armored spearhead has passed the Russian tank traps and now moves swiftly and in open order through the flat Russian countryside.

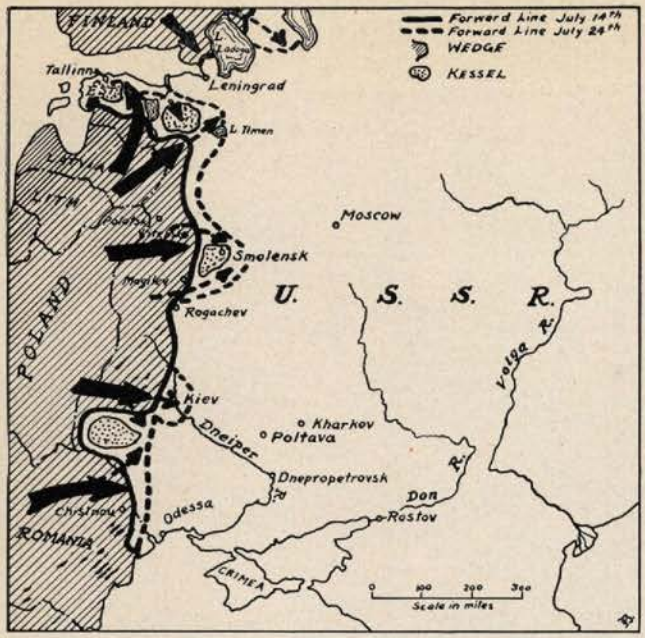
The encirclement begins. Motorized columns pour into the wedge. Resistance has been met, but the advance continues relentlessly. The formation of a kessel, and its maintenance under hostile reaction from within and without the ring, is a hazardous operation. As a single example of the tactical and technical problems involved, consider the artillery. In which direction should each unit face? How is one to avoid shooting across the kessel into one's own troops?



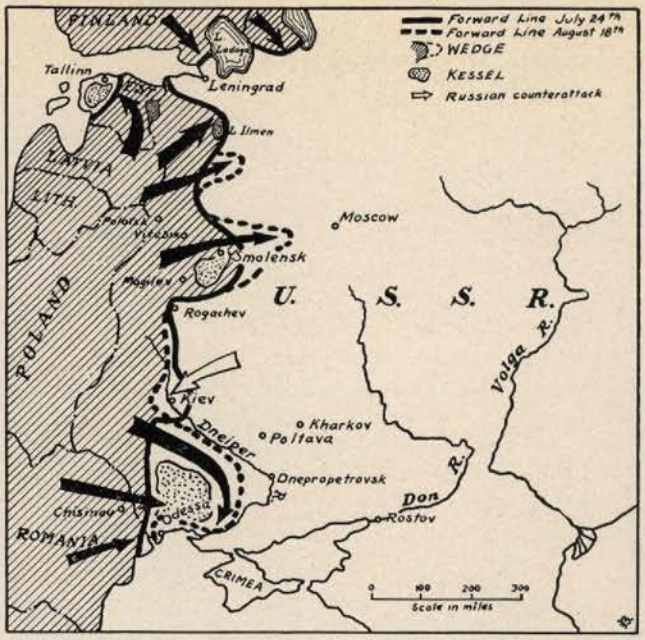
The heavy infantry phalanx comes up to support the armored spearhead. Here we see a modern battlefield in which the German infantry is advancing in typical deployed formation through the Russian grain fields of the Ukraine. The tracks of two tanks may be seen crossing the field. The successful use of wedge and kessel tactics implies the availability of masses of foot infantry who can make daily marches of 25-35 miles per day, for days on end.

German horse cavalry crosses Berezina River (west of Smolensk, Russia). In the wedge and kessel operations horse cavalry fills in the gaps, maneuvering in terrain too difficult for the motorized and mechanized elements.

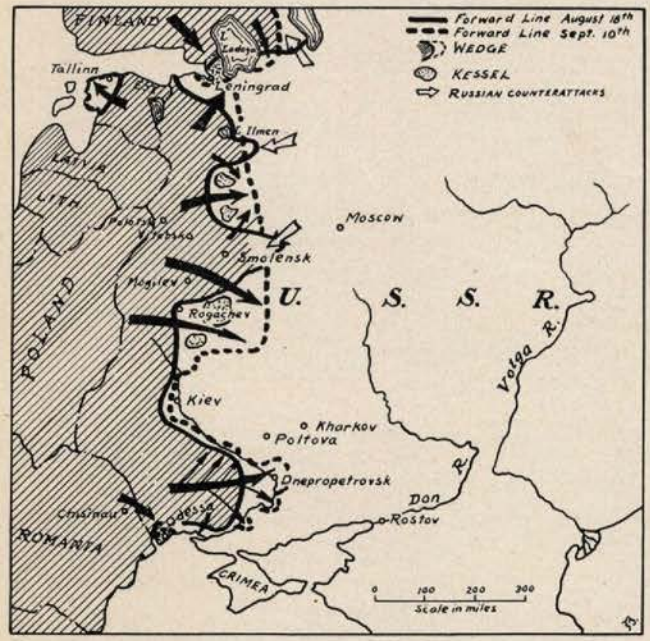
The final act in the kessel. Here is part of the bag in Russian prisoners taken in one of the encircling operations near Uman.



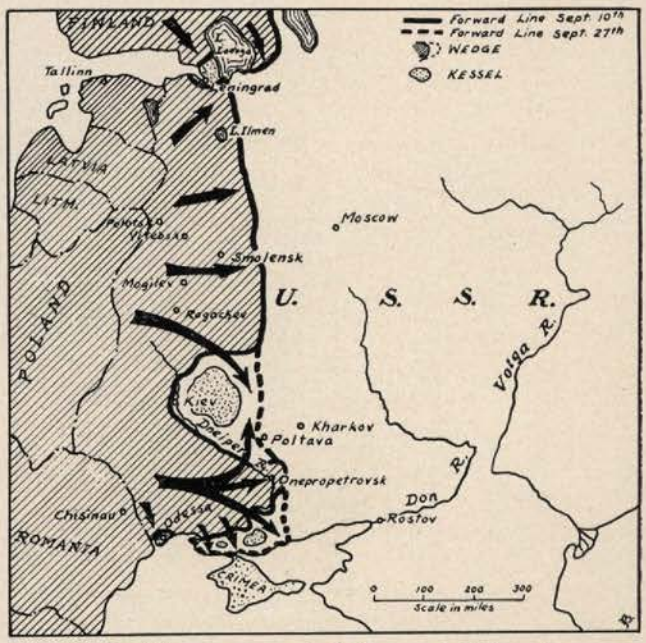
Sketch 1—Here, on a grand scale, are three major Kessels being formed. In the north the Soviet forces in the Balkan States are being pinched off. In the center is the annihilation battle near Smolensk, and in the south, great groups of Reds are being surrounded in the western Ukraine. Within the scope of these major operations are many smaller wedge and kessels, not shown hereon.



Sketch 2—The encirclement of Leningrad is beginning to show form in the north. In the center is another German wedge directed toward Moscow, which on this first attempt met effective resistance. In the south, Odessa is encircled, and Kiev passed temporarily (here the Germans were at one stage thrown back by a Russian counter-drive).

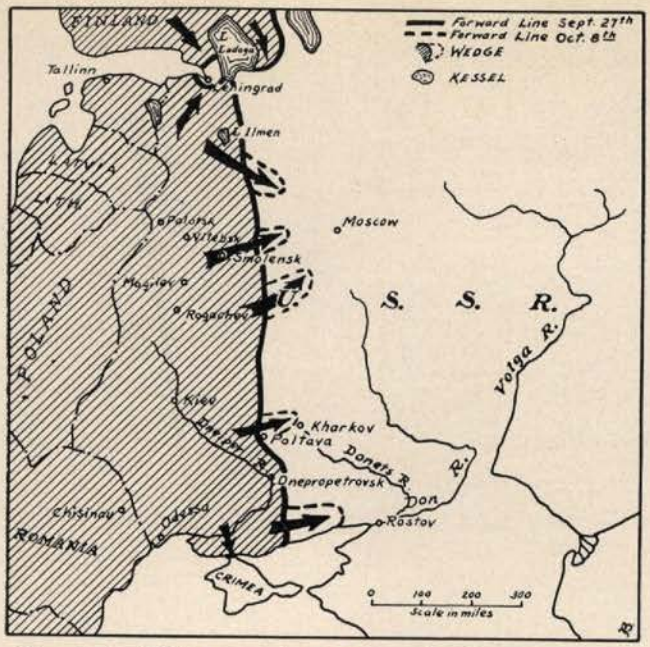


Sketch 3—A strategic operation which is to result in the fall of Kiev and the Crimea is developing here.



Sketch 4—The vast kessel of Kiev and Crimea is completed, with its huge booty in prisoners and matériel.

The photographs on preceding pages show how the wedge and kessel method was applied in the war in Russia. Sketches 1-5 show graphically how these encirclement operations were conducted in the great battles of Smolensk and Kiev. Illustrated also are the beginnings of the drives in the direction of Moscow and the Donets basin, where the Italian and Russian cavalry clashed.



Sketch 5—With scarcely a pause, the Germans continue driving wedges toward the Donets basin and Moscow. Leningrad has not fallen, but is completely cut off, as is Crimea. The gigantic Russian military machine is being slowly "wedged and kesseled" in major and minor battles of annihilation.

(Continued from page 4)

This Wedge and Kessel is thus an interesting *variation*—not an abandonment—of the blitz, and shows that the Germans must be expected to employ a "change of pace" in conformity with each new theater of operations and new opponent. This should be remembered!

RUSSIAN DEFENSE

To counter this *Wedge and Kessel* method of offense, even before the winter weather began the Russians achieved partial success by maintaining a flexible front, lightly held by infantry supported by mobile antitank and tank destroyer groups, traps and other antitank auxiliaries to stop or slow down the spearhead before encirclement could begin. Or else, with the defense organized in great depth, they struck at the encircling or kessel forces with highly mobile, well placed reserves of all arms, supported by combat aviation. Guerrilla and horse cavalry units have been employed in areas unfavorable to motor and mechanized units in order to attack and harass the flanks and supply installations supporting the wedge spearheads. On other occasions the Russian counterattacks penetrated the highly coördinated encircling tentacles of the German octopus and thereby caused a frustration of the operation.

In this effort the Russian Army has demonstrated a stability and morale hitherto unopposed to Germans during their projected campaigns of World War II. The German army, on the other hand, has disclosed a method of utilizing power-tactics hitherto unknown in military history.

In the offensive, the modified strategical and tactical principle of envelopment has survived since Cannae (216 B.C.) against which the defense that has been most successful has been the counterattack of relative strength applying the same principle.

Many are inclined to consider Napoleon's Russian Campaign as a parallel to what is transpiring today and might give one an index as to ultimate result. Such a conclusion, in our opinion, is misleading and dangerous. We might remember that General Morand stated: "The march of the Grand Army was first delayed by the Cossacks and later they cut it off from every source of supply and swarmed around its flanks like savage bees engaged in tormenting and exhausting a roaring lion with their innumerable stings." This irritating force, elusive and omnipresent, made itself especially felt at the time when Napoleon's cavalry, depleted in numbers and exhausted by hardship, was less than one-fourteenth of the strength of his infantry. His deficiency in light cavalry, more than weather conditions or any other cause, therefore, contributed to his downfall. It is not often that method can outstrip principle. The airplane has introduced a factor in modern warfare that, in the present German-Russian situation, could easily play the rôle of the Cossacks of 1812.

During this present winter we, in all probability, will witness the extensive use by both Germany and Russia of airplanes in combat, supply and troop transport operations in coördination with vast numbers of light tanks and horse cavalry.

The airplane-tank-horse combination* under unified command and aggressive leadership is to our mind the most redoubtable potential weapon in modern armies.

The effective exploitation during the present winter of this *new cavalry* with a superiority in strength and efficiency—employed in adherence to time honored cavalry principles—in our opinion, could make the greatest contribution by either side to a military victory.

For us the lesson is that we must look ahead, employ the utmost in vision based on solid realities, and devise our own tactical concepts to fit such theaters of operations and such opponents as *we* may expect to encounter.

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*"Rome acknowledged that the Russians in the Donets sector were constantly attacking with *tanks and airplanes supplemented by cavalry* and on the Moscow front the Germans said that the enemy had launched 'heavy' blows."—*United Press,* Nov. 15, 1941.

★ ★ ★

CAVALRY IN CRETE

*By Major R. L. Howze, Cavalry**

I. General

TO students of military operations, the capture of Crete is, to date, the most interesting campaign of World War II. Nothing that had not been employed successfully before was introduced. Parachutists and air infantry had outstanding success in the operations in the low countries and France. Combat aviation in the rôle of long-range artillery in close support of ground troops was proved effective in every campaign starting with Poland. But in Crete, a task force transported by air and supported by an air fleet conquered an island garrisoned by a numerically superior force and supported by a navy immensely stronger than any sea fleet which could be brought against it.

It is not the purpose of this article to point out any lessons to be learned from this campaign, but to present for consideration what might have happened had part of the British force on the island been horse cavalry, reinforced by horse artillery. One reinforced cavalry brigade would have greatly influenced the outcome.

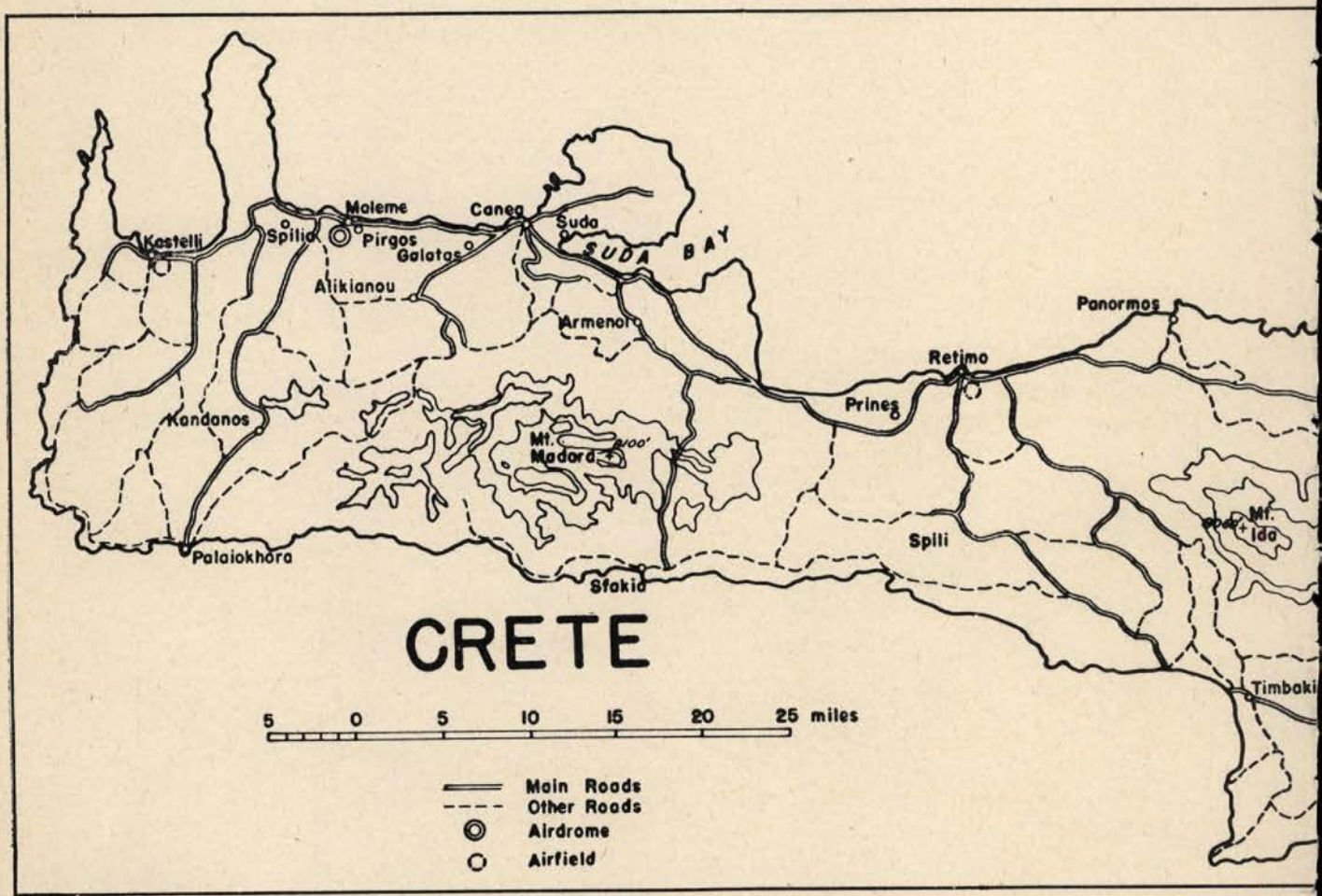
Crete is an island 160 miles long and varying in width from 7 to 35 miles. Its long axis runs generally east and west. The center of the island is mountainous and rises to three peaks, 8,100 feet, 8,000 feet, and 7,100 feet high, respectively, from west to east. The coast is unsuited for large scale landing operations. Roads are very poor. Third-class roads connect important points on the north coast. Coast-to-coast communication is by mountain track. Even if the roads were good, the road net would still be poor.

Canea, Retimo, and Heraklion are the principal cities. All are on the north coast, as is Suda Bay, the best anchorage of the island.

Airdromes existed at Maleme (west of Canea) and Heraklion, and airfields at Retimo and Kastelli. None of these could be considered first class.

The possession of Crete had various advantages. To the British, it provided the only air bases, after the loss of Greece, from which the Rumanian oil fields could be

*Office, Chief of Cavalry.



attacked. The anchorage at Suda Bay was immensely valuable to the navy.

The Axis wanted the island to provide security to shipping in the Adriatic and Ægean Seas, to restrict movements of the British Fleet in the eastern Mediterranean, and to provide bases for air operations in the Cairo-Alexandria-Suez Canal area and the western desert. Its position with respect to Turkey and the Near East was also important.

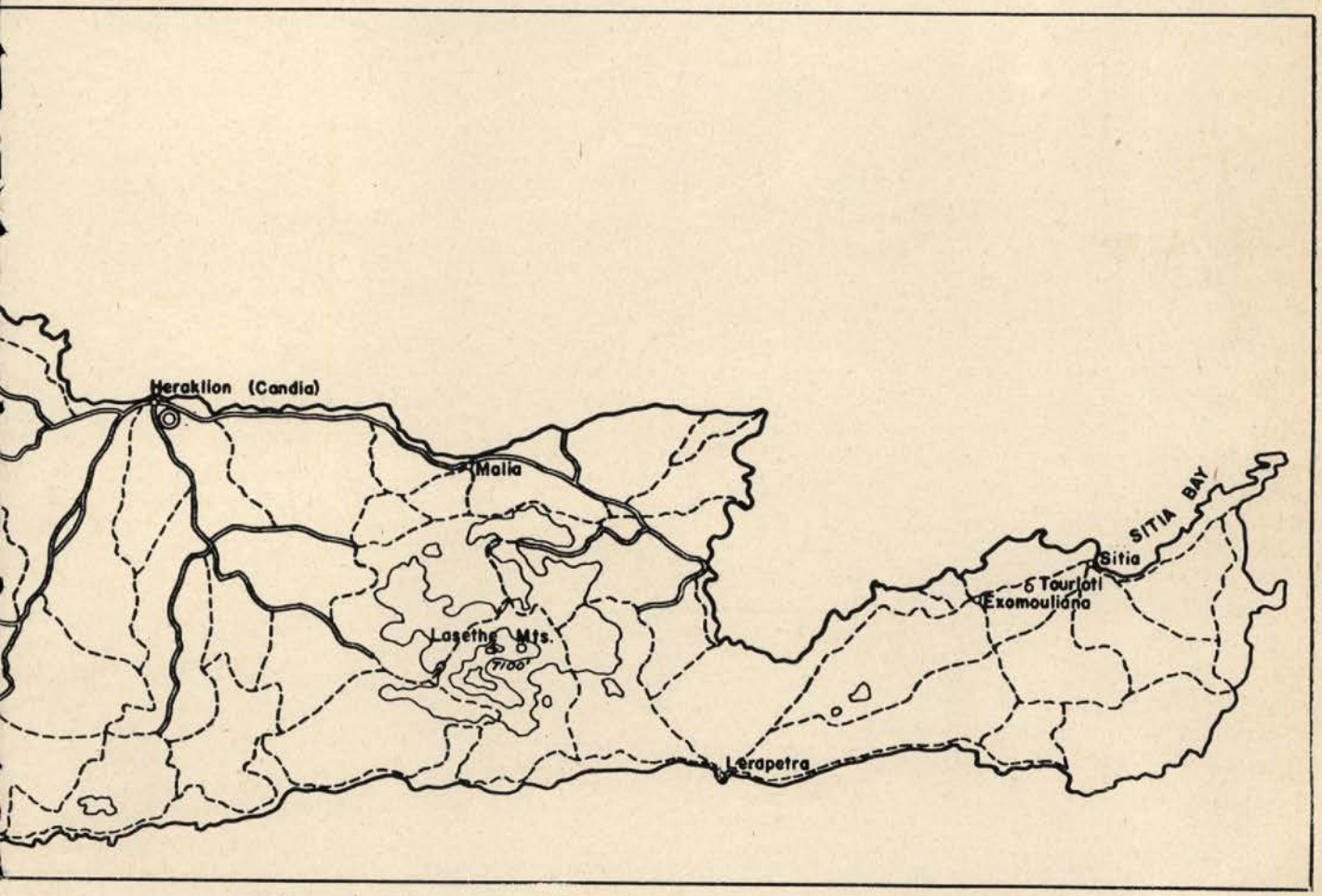
From November, 1940, the British garrison of Crete consisted of one infantry brigade. A few Greek replacement troops were also there. Following the Greek débâcle, the number of soldiers was increased by evacuées from Greece to approximately 37,500. So many of these were practically without equipment that it has been estimated that only about 12,000 could be considered fighting troops. Among the total were included about 4,000 Palestine and Cypriot labor troops, 10,000 Greek troops lacking much equipment, and many remnants of service units escaped from Greece. Sixteen airplanes, sixteen light tanks, and ten infantry (5-8 mph) tanks were on the island. There was some antiaircraft and artillery matériel, but not much.

The obvious objectives of an invader were the airfields at Kastelli, Maleme, Retimo and Heraklion, and the naval base at Suda Bay. The Allied dispositions were approximately as follows: 7,800 in the Maleme-Kastelli area; 4,400 in the Suda-Canea area; 760 between Suda Bay and Retimo; 6,000 in the vicinity of Retimo; and 6,000 at Heraklion. These garrisons add up to 24, 960, leaving about 12,500 Allied soldiers not accounted for. But only around 12,000 of the total were estimated as forming combat units. Apparently, each garrison had about fifty per cent of its strength in service echelons and the remaining 12,500 were employed as labor units on the roads and airfields, and in unloading supplies in Suda Bay. Most important, *there was no mobile reserve*. A few of the tanks were scattered among the garrisons. The location of the remaining few is unknown. They did not, however make their appearance as a unit during the fight.

The Germans, as usual, made complete and detailed preparations for the attack.

The forces which actually took part in the invasion consisted of the VIII Air Corps, based in Greece, and a ground force of three reduced strength divisions. The VIII Air Corps contained 360 heavy and dive bombers, 465 fighters and 650 transports. The ground force consisted of a parachute division of three *regiments* (4,950), an air-infantry division (5,600), and a two-regiment mountain division (5,000). In addition, there were motorcycle and antiaircraft units. The heavy organic supporting weapons consisted of 37-mm. antitank guns, 81-mm. mortars, 75-mm. infantry howitzers and 75-mm. mountain howitzers. The antiaircraft weapons probably did not exceed 37-mm.

Briefly, the German plan of operation consisted of three approximately equal parachute attacks on the air-



fields at Maleme, Retimo and Heraklion, to be followed by the landing of air-borne infantry and light artillery, wherever the preliminary attack was successful. An intense attack by bombers and fighters preceded the parachute attack.

II. The Actual Attack

The German preparation was conducted in three phases. The first phase, May 1st to 10th, was spent in visual and photographic reconnaissance and dive bomber and machine gun harassing attacks. The German plan was based on the results of this reconnaissance.

From May 11th to 15th, bombing and machine-gun attacks increased from day to day, both in frequency and intensity. Communications, concentrations and antiaircraft positions were bombed repeatedly. On May 15th, what was left of the R.A.F. withdrew to Egypt.

In the third phase, the attacks were directed mainly against sea-borne supplies, both en route and unloading in Suda Bay. Many of the British supplies were unloaded while the ships were burning and sinking. Attacks on the airfields were intensified in an effort to break down morale.

The real attack began on May 20th.

May 20th

An air attack of "unparalleled intensity" against the Canea-Maleme area was begun at dawn. At 8:00 AM, about 2,000 parachutists were dropped in this area. Parachutes were dropped in waves of about 600 each, *and about 400 of each wave carried equipment only.* At Maleme Airdrome, the 22d New Zealand Battalion was bombarded and machine gunned for ninety minutes and, before the cloud of dust and smoke cleared, a number of gliders (estimated at fifty) each carrying 12 men, landed in a dry creek bed. The passengers immediately took positions facing the New Zealanders and covered the landing of parachutists behind them. The defenders of this airdrome were overwhelmed. More parachutists interrupted communications on the Maleme-Canea road.

At 4:15 PM, parachutists landed in the vicinities of Retimo and Heraklion. As in the Maleme area, about a regiment was dropped on each place.

Losses of parachutists were appalling. However, these attacks were not defeated. At Maleme, the airdrome was captured, and at Retimo and Heraklion the remnants of the parachute regiments, although failing to capture the airfields, were a serious threat to the British positions, and prevented reinforcement of the hard-pressed garrison of the Canea-Maleme area.

During the evening, shortly after the capture of Maleme, the transports began to land on this field. British artillery still was in range, but the Germans took their losses and landed the infantry and mountain troops. Many crash landed on the beach. Casualties were probably heavy, both in personnel and planes, but an effective force was put on the ground.

The capture and holding of Maleme was decisive.

On this date, the British navy contacted a German water-borne expedition, convoyed by Italian naval units, on its way to Crete.

May 21st

German forces in the vicinity of Maleme began to push the British out of artillery range. The detachments of parachutists between Maleme and Canea and in the central part of the island continued to interrupt communications. Motorcycle detachments pushed south and west from Maleme.

May 22d

Motorcycle detachments captured Palaiokhora on the southwest coast and the airfield at Kastelli. Preliminary movements for an attack to the east from Maleme were continued. During the night of May 22d-23d, the British navy defeated and drove off the water-borne expedition. Axis losses in this naval action were extremely heavy.

May 23d-24th

On these dates, the German VIII Air Corps attacked the Britsh Eastern Mediterranean Fleet. With very little support from the air, the results were disastrous for the British. On May 24th, the fleet was withdrawn to Alexandria, and the Allied troops in Crete were entirely on their own.

May 25th-27th

The German drive to the east began in earnest. British positions around Galatas, key to the defenses of Canea, were penetrated. On the following day the penetration was deepened, and the German mountain troops began a flanking movement to the south, through trackless mountains from Galatas to south of Suda Bay. This movement was completed on May 27th and forced the fall of Canea. The British decided to evacuate Crete on May 26th, and withdrawals to the south coast began on May 27th. On this date, a small Italian force, estimated to be a regiment, landed at the extreme east end of the island. Their operations were slow and cautious and had no effect on the campaign.

May 28th

Withdrawals of British to the south continued. Rearguards suffered heavily.

May 29th

Contact with isolated parachute groups in the central part of the island was made by German motorcycle units supported by infantry in captured trucks. Heavy fighting between British rear units and pursuing German mountain troops occurred north of Sfakia. This village was the principal British embarkation point.

May 30th

British rear guards in the south were captured. The main body succeeded in escaping to Egypt. German troops in the vicinity of Heraklion were reinforced and

the British garrison at that place surrendered. The campaign was over.

III. What Might Have Happened

Obviously, the way to repel an attack by air-borne forces is to deny them a place to land. The preliminary seizing of landing places must be accomplished by parachutists and the passengers of gliders. Their defeat is accomplished by causing losses on the way down and immediately after landing, and by determined and speedy attack on small groups which have succeeded in landing and organizing. Delay will result in their being reinforced and becoming strong enough to take up offensive action.

At Maleme, the British adopted a perimeter defense of the airfield and were defeated. At Retimo and Heraklion, the defense was organized in depth, and succeeded in holding the fields. Organized groups of parachutists, however, remained a threat and cut communications between these points and the rest of the island. A mobile reserve should have been able to neutralize these isolated units.

What would have been the result of this attack had, say, 3,000 of the 12,000 Allied fighting troops been a cavalry brigade, reinforced by a battalion of horse artillery? For the sake of simplicity, consider this unit to be organized and equipped as U. S. Cavalry.

This force should be considered the mobile reserve, and disposed as follows:

One regiment and one battery of artillery on the northern slopes of Mount Ida (in the central part of the island).

The brigade, less detachments, on the northern slopes of Mount Madara in the west.

The remaining 9,000 of the combat troops should be distributed with 4,500 at Maleme and 2,500 each at Retimo and Heraklion. Patrolling should be conducted by infantry in trucks along the coastal plain.

As the number of tanks was small, they should have been disposed to take part in the immediate defense of the airfields. Had there been more, a portion should have been attached to the reserve.

The attack on Maleme began with parachutists descending at 8 AM. Between that time and late in the afternoon, parachute and glider troops succeeded in driving the defenders back from the airfield to the extent that air-borne infantry was able to use the field, but under artillery fire.

The garrisons of Heraklion and Retimo were successful in defending their airfields, but parachute groups had organized into first-class nuisances.

How to employ the reserve? It certainly should not be committed until it becomes obvious that the local garrisons have lost control of the situation and the enemy has gained the use of an airfield. But once this becomes apparent, it must strike and strike fast.

Consequently, when, early in the afternoon, on May 20th, it was known that Maleme would be lost, the portion of the reserve in the vicinity of Mount Madara should have been ordered to move. Moving rapidly across country in dispersed formation, its losses from the air would not be too heavy. Within two hours, a regiment of cavalry, supported by two batteries of artillery would be ready to attack the hostile parachutists *from the rear*. The New Zealanders, supported by their own artillery would coöperate, and the field would have been denied to the air-borne troops. Remember, Maleme was captured *by one regiment of parachutists and glider troops which had suffered horrible losses in landing*. They could not have withstood an attack from two directions.

Upon the movement from Mount Madara, the other regiment, less a reinforced squadron, should have been moved west, with its battery. The reinforced squadron would have provided a mobile reserve in the less danderous area, and a new reserve constituted in the area of the main attack within six hours. The length of time the Cavalry in the west took to clear up the situation there and reorganize would determine how far west this new reserve would move.

Having cleared up the situation at Maleme, consideration would be given to the isolated groups at Retimo and Heraklion. The garrisons there were undefeated. Coördinated action, taking one vicinity at a time, would quickly overwhelm the parachutists, for again, at each place there was a regiment greatly reduced by losses, and unable to withstand an attack from the rear. Finally, the lone Italian regiment in the east would be easy pickings.

After each counterattack, the Cavalry must be reorganized and returned to the reserve. Only under extreme circumstances should it reinforce garrisons.

Of course, had the British had more infantry, with ample truck transportation to move a reserve, perhaps the Germans would have been repelled. But its movements would have been road-bound, and subject to heavy dive-bomber attacks. The movement of the reserve had to be by daylight. Also, a brigade of tanks, part to reinforce local garrisons, and part as a reserve, would no doubt have won the battle. But bear in mind that the British didn't have the tanks to send, any more than they had the extra infantry to spare.

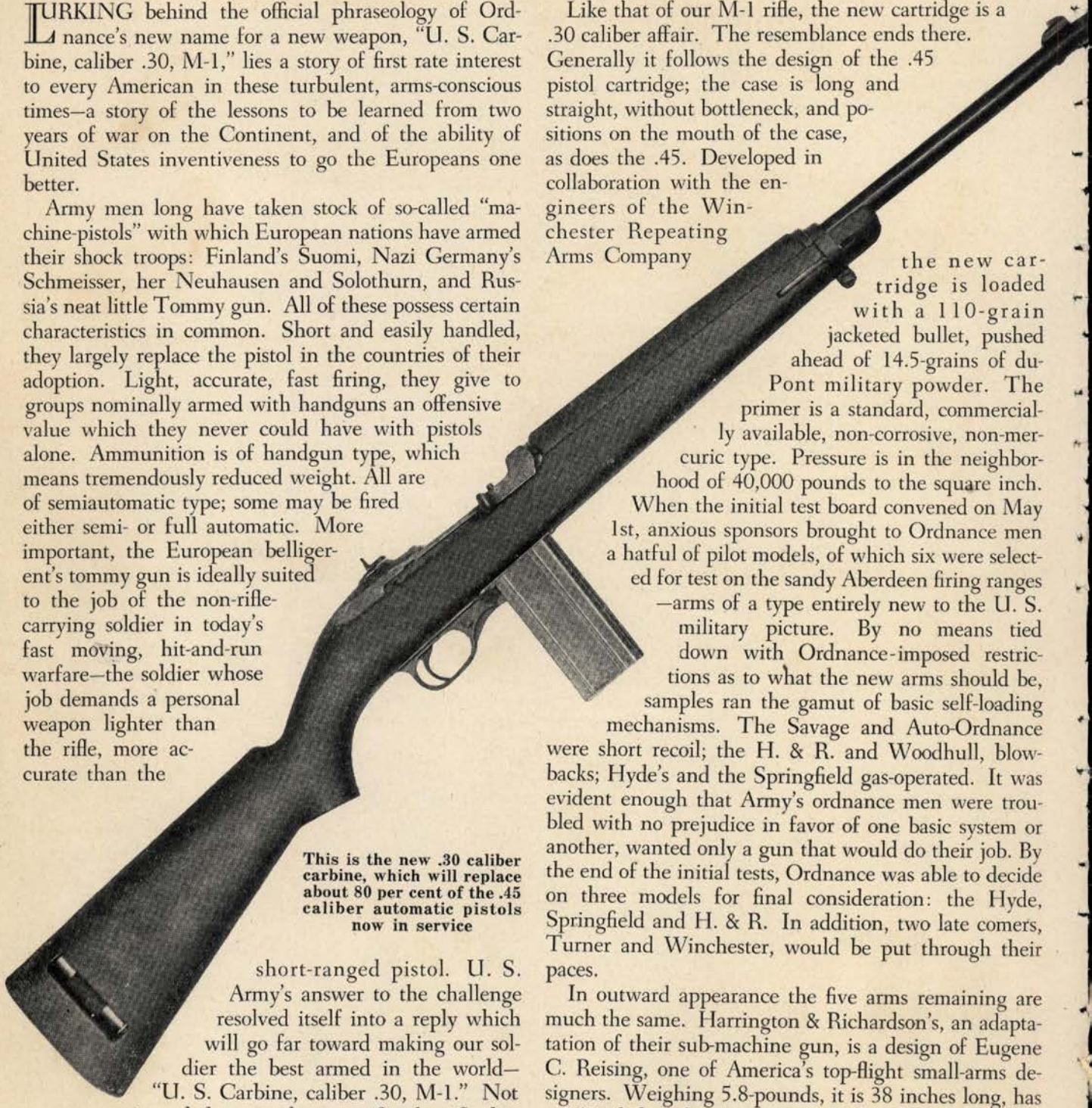
Crete was captured in the only way it could have been, so long as the British navy dominated the surface of the Mediterranean. It was garrisoned since November, 1940, by British troops. All other things being as they were, I believe that in those seven months Cavalry could and should have been sent there.

The British Fleet was defeated on May 23d-24th, and withdrew to Alexandria. It had, however, defeated the Axis water-borne expedition and eliminated it from the picture. It would take some time to organize another, and although hurt, the fleet was still a formidable threat to this type of invasion. Would a later water-borne invasion have succeeded? Perhaps, but that is not my story.

The New M-1 Light Carbine*

LURKING behind the official phraseology of Ordnance's new name for a new weapon, "U. S. Carbine, caliber .30, M-1," lies a story of first rate interest to every American in these turbulent, arms-conscious times—a story of the lessons to be learned from two years of war on the Continent, and of the ability of United States inventiveness to go the Europeans one better.

Army men long have taken stock of so-called "machine-pistols" with which European nations have armed their shock troops: Finland's Suomi, Nazi Germany's Schmeisser, her Neuhausen and Solothurn, and Russia's neat little Tommy gun. All of these possess certain characteristics in common. Short and easily handled, they largely replace the pistol in the countries of their adoption. Light, accurate, fast firing, they give to groups nominally armed with handguns an offensive value which they never could have with pistols alone. Ammunition is of handgun type, which means tremendously reduced weight. All are of semiautomatic type; some may be fired either semi- or full automatic. More important, the European belligerent's tommy gun is ideally suited to the job of the non-rifle-carrying soldier in today's fast moving, hit-and-run warfare—the soldier whose job demands a personal weapon lighter than the rifle, more accurate than the short-ranged pistol. U. S. Army's answer to the challenge resolved itself into a reply which will go far toward making our soldier the best armed in the world—"U. S. Carbine, caliber .30, M-1." Not intended as a replacement for the rifle, but rather as an auxiliary for the sort of job neither the rifle nor pistol can do effectively, the new carbine gives a great first impression. Trim and neat, it looks like business over every one of its stubby 36 inches, should make a tremendous hit with the 80 per cent of pistol-armed fighters whose .45's will be replaced in its favor. No sissy, the new carbine packs a wallop—15 rounds staggered in its long box magazine, speeds its 110-grain jacketed bullet at a mean velocity of 1,900 feet a second.



This is the new .30 caliber carbine, which will replace about 80 per cent of the .45 caliber automatic pistols now in service

Like that of our M-1 rifle, the new cartridge is a .30 caliber affair. The resemblance ends there. Generally it follows the design of the .45 pistol cartridge; the case is long and straight, without bottleneck, and positions on the mouth of the case, as does the .45. Developed in collaboration with the engineers of the Winchester Repeating Arms Company the new cartridge is loaded with a 110-grain jacketed bullet, pushed ahead of 14.5-grains of du-Pont military powder. The primer is a standard, commercially available, non-corrosive, non-mercuric type. Pressure is in the neighborhood of 40,000 pounds to the square inch. When the initial test board convened on May 1st, anxious sponsors brought to Ordnance men a hatful of pilot models, of which six were selected for test on the sandy Aberdeen firing ranges—arms of a type entirely new to the U. S. military picture. By no means tied down with Ordnance-imposed restrictions as to what the new arms should be, samples ran the gamut of basic self-loading mechanisms. The Savage and Auto-Ordnance were short recoil; the H. & R. and Woodhull, blow-backs; Hyde's and the Springfield gas-operated. It was evident enough that Army's ordnance men were troubled with no prejudice in favor of one basic system or another, wanted only a gun that would do their job. By the end of the initial tests, Ordnance was able to decide on three models for final consideration: the Hyde, Springfield and H. & R. In addition, two late comers, Turner and Winchester, would be put through their paces.

In outward appearance the five arms remaining are much the same. Harrington & Richardson's, an adaptation of their sub-machine gun, is a design of Eugene C. Reising, one of America's top-flight small-arms designers. Weighing 5.8-pounds, it is 38 inches long, has a 15-inch barrel, operates on a delayed blow-back system. The arm submitted by veteran George Hyde, nearly a half-pound lighter, is gas-operated, draws its gas from a port about 5½ inches from the muzzle, is shorter than the H. & R. by five inches.

Winchester's entry works on a recent and proven principle of taking gas off close to the chamber, before cooling can take place, thus preventing carbonization

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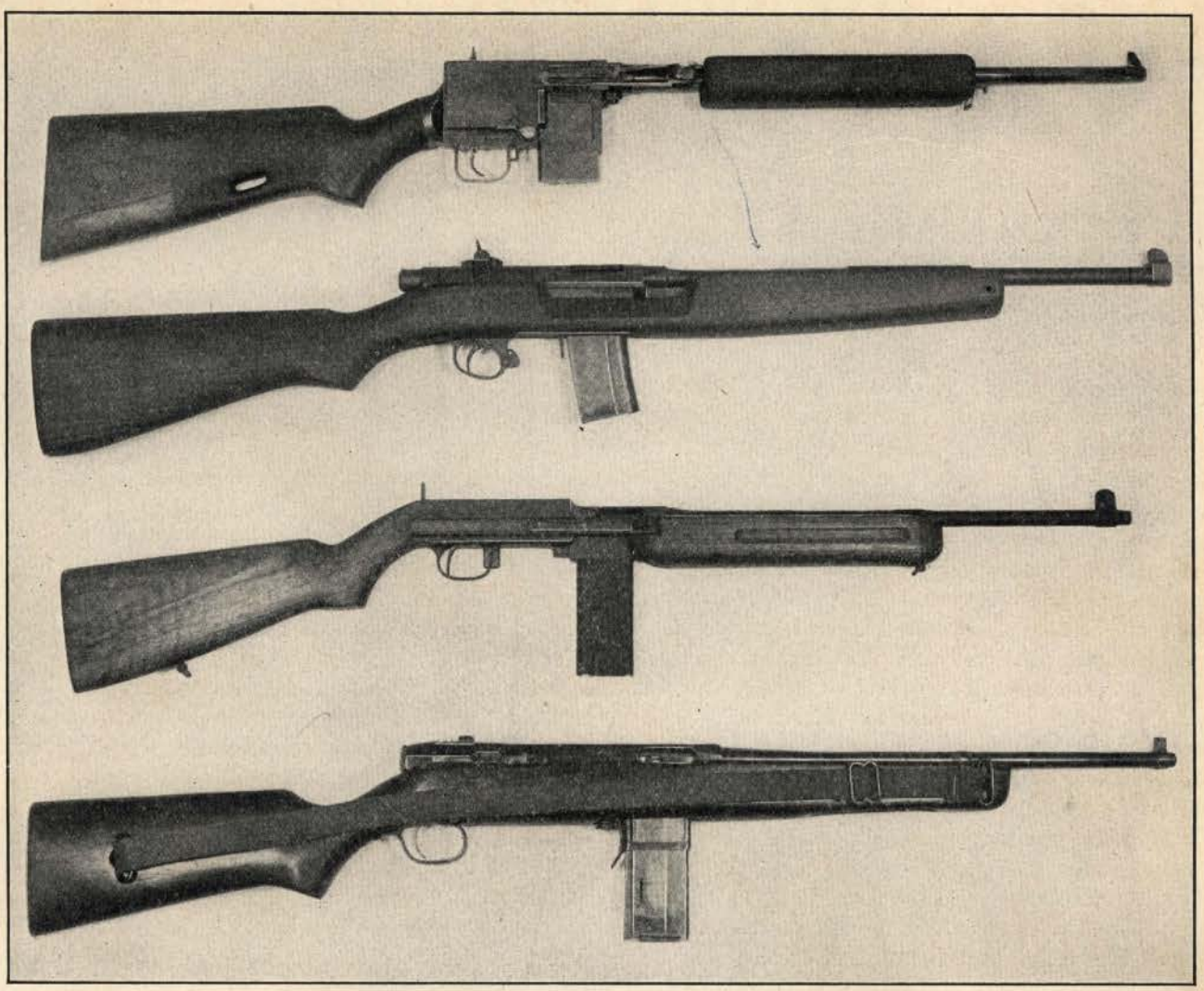
*Courtesy, *The American Rifleman.*



Other entries in the Army's tests were (top to bottom) the Turner, Springfield, Hyde and Harrington and Richardson arms

of the piston and gas port. Seven and a half inches shorter and four and a half pounds lighter than the Army's Garand, Winchester's carbine weighs 4.63 pounds.

Tests for accuracy, sustained firing, exposure to weather, burial in gritty dust bring out merits and faults as relentlessly as would months of hard field use. Through these final tests one weapon stood out increasingly, standing more abuse, holding up longer under sustained firing, breaking fewer parts. By the time the test personnel had handled all of the weapons, witnessed all of the gruelling tests they were required to undergo, members of the group were unanimous in their opinion. The *Winchester* was voted best suited to military service.

Adoption of the new carbine will mean much to our Army. Offensive fire power, meaning in the final analysis potential *aimed* shots per minute, will be increased by nearly 33 per cent. Actually the increase of fire power will be greater even than that 33 per cent would indicate. Previously men in rear echelons depended upon riflemen for protection. Armed with the carbine, these men become an offensive threat themselves, relieve supporting riflemen for other tasks.

It is a far cry from the carbine of Grandfather's day obsoleted 35 years ago, to the semi-automatic "U. S. Carbine, caliber .30, M-1." The return of open, shifting warfare, the development of highly mobile fighting units and employment of parachutists and air-borne troops as shock forces, have made the position of troops behind combat zones extremely vulnerable. Far from being "safe behind the lines," our modern soldier may find himself face to face with armed, determined enemy fighters at any time, and anywhere in a zone of operations. With the new carbine, his chances of protecting himself and the success of his mission are increased tenfold.

Please address all communications for The United States Cavalry Association and The Cavalry Journal to 1624 H Street, N.W., Washington, D. C.

Responsibility for the Employment of Cavalry

THE success of a cavalry force depends primarily upon several factors. First, it depends upon the manner in which it is employed by the Commander-in-Chief; second, upon the way it is led by its immediate commander; third, upon the knowledge and initiative of its subordinate commanders, especially the leadership of its squadron and similar unit commanders; fourth, upon the training of its individual soldiers.

The recent maneuvers have shown that there is improvement over the past in the first three of these categories, but especially in the first.

There are, of course, other conditions necessary for success—the size and condition of the command, its equipment and its horses, the terrain, the weather and the quality of the enemy—but, given a good cavalry force, the first of the factors mentioned is perhaps the most important.

Napoleon's cavalry owed its success primarily to the manner in which he employed it—its tasks and missions, and the care he bestowed upon it. The same thing may be said of Lee's cavalry and of that of Stonewall Jackson when the latter commanded an independent force. The mediocre success, or failure, of the Federal cavalry in the first years of our Civil War were due to the same thing—the manner in which the army commanders employed it. Many illustrations to the same effect could be drawn from ancient wars, from the European wars of two hundred years ago, and down through the years to the World War of 1914-18. In that war, contrast the employment of the German and French cavalry forces with that in the army commanded by Allenby!

The great commanders of history have always employed their cavalry forces well. The present great war is the first in which large forces of cavalry have not been present. As everyone knows, this has been due to the great reliance placed in mechanized forces and the consequent neglect to provide cavalry forces of any important strength. On the part of Germany this provision was not necessary because of its overwhelming strength, compared to that of its enemies, in air force and mechanized force. Should the opposing forces be anywhere near equal in the air and in tanks, Germany would need large forces of cavalry. All of her opponents need large cavalry forces now. They would have done better in the past two years had they possessed such forces and had they known how to use them. Of course, reference is made to modern cavalry, not the antiquated European cavalry of the First World War.

The missions of this modern cavalry in modern warfare should receive intense study in our War College and our General Staff. As already intimated, one of the qualifications necessary in our new army commanders is a knowledge of cavalry and of how to use it skilfully.

Let us examine some of the items of knowledge that such a commander should possess.

In school problems and maneuvers there seems to be a tendency to assign to the cavalry component of a mixed force, tasks which are too great for the size of the cavalry unit involved. For example, a cavalry squadron is sometimes ordered to cover the whole front of an infantry division that is advancing in two widely spread columns. This has resulted in dispersing the cavalry unit so that it is out of the control of its commander and is not strong enough anywhere to deal with advanced elements of the enemy. In such a situation it would be much better to assign a mission of covering or reconnaissance that one squadron, under the control of its command, could reasonably be expected to perform. Otherwise, such a squadron is wasted. If this mission is not as comprehensive as the force commander would have wished had he had a cavalry unit of sufficient strength, he must make the best of what cavalry he has at his disposal. He should employ his cavalry where he believes it is most needed. If it is a matter of covering the advance, the squadron should be sent by positive and definite orders to cover the wing of the force which seems most important. Some other means must be used to cover the other wing. If it is a matter of reconnaissance, the force commander should send his cavalry to definite points or localities to answer certain definite questions. This is a responsibility that the force commander cannot avoid. It would be a great mistake to give the cavalry squadron commander an indefinite mission of wide spread reconnaissance according to some academic formula. No cavalry unit should be expected to spread itself so widely that it is out of control of its leader.

Similarly, an army composed of several army corps but only one cavalry division could not expect of that one division all of the service that an adequate cavalry force could give. It seems almost silly to say that a cavalry unit of a certain strength cannot do more than

its strength permits. Nevertheless, it has often been remarked about some particular campaign that the cavalry did not perform the functions expected of cavalry, whereas the real reason for apparent failure was the absence of any cavalry force of adequate strength for important duties.

We can state in general terms what the missions or duties of cavalry are in modern war, but few persons seem to realize what the strength of the cavalry should be to perform those missions.

A force commander should not use his cavalry as he would his armored force. Both of those weapons are necessary but they have different functions. The armored force is a new weapon. It is not cavalry and has not usurped the duties of cavalry. The cavalry mobility should not be used in competition with armored force mobility. Cavalry mobility remains what it has always been and it should be so used. Mechanized mobility is a new thing and should be used as such. Cavalry mobility applies particularly to cross-country movements. Mechanized mobility applies especially to roads and favorable terrain. Herein lies the secret of the different employment of these two arms. Infantry still remains the main body of the fighting forces as is evidenced by the enormous number of infantry divisions in operation in the greatest of campaigns now being fought between Germany and Russia. For certain purposes cavalry still has the advantage over infantry in cross-country mobility. The new armored force has a great advantage over cavalry in road mobility which can also be used for certain purposes.

The Air force also is a new weapon. It has certain advantages over artillery, but it does not usurp the rôle of artillery. It simply makes it possible to extend the power of artillery under certain circumstances. The commander of a force must use his artillery and his air force differently. Of course, the air force has other uses also, such as reconnaissance and observation, and sometimes completely independent missions.

It follows, therefore, that the commander of a mixed force should not use his armored force for cavalry missions nor his cavalry for armored force missions.

There is yet another arm to be developed. It is the antitank force. Infantry and cavalry must have a few antitank guns in each of their regiments, but the large mass of antitank guns must be organized into an antitank force.

Thus, we now have several new arms of the service for the commanding general to employ; and he must know how to employ them all—old as well as new.

In a previous article I have written about the missions of the modern cavalry. The commanding general must know them as thoroughly as he does the employment of his other arms. Without this modern cavalry the army is just that much weaker, that much handicapped. This is certainly true, no matter what they are doing in Europe, Africa, or Asia, or what may come to pass in the Americas.

Good cavalry is hard to make. It could not be improvised during a campaign just because someone had discovered its usefulness. *Every field army should have a cavalry corps.* Without this provision we could not expect our army commander to understand how to employ cavalry should the occasion arise. Every army commander who has studied our modern cavalry and its possibilities will certainly have occasion to use it and be very thankful for it.

Useless missions wear out the cavalry to no purpose. It is then not available for important missions. The tendency to run the cavalry off its legs should be avoided unless it is the last act of the war. The army commander should know his cavalry so well that he will not make this mistake. If the mission is that of attack or delaying action, the army commander must know what to expect of cavalry units of various sizes. He must aim not only to use his cavalry but to preserve it also for future use. He must rely greatly on the initiative of his cavalry commander but he must give him very positive and definite orders, such as he would to any other component of his command.

This fine and necessary understanding, and the very useful results from cavalry properly employed, can never be realized if the attitude toward cavalry in the army is not materially and intelligently changed.

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If We Don't All Hang Together . . .

It ain't the guns or armament, or the money they can pay;
It's the close coöperation that makes them win the day;
It ain't the individual, nor the army as a whole,
But the everlastin' teamwork of every bloomin' soul.

—J. Mason Knox *in Coöperation.*

HORSEMASTERSHIP

Four Exercises to Train Remounts and Reclaim Spoiled Horses

By Brigadier General Harry D. Chamberlin, U.S.A.*

Note: Before studying this article, Changes 1, F. M. Animal Transport (25-5) should be carefully studied and each detail thoroughly understood.

THE four simple exercises herein described will not only serve to train all colts and remounts, but also will render older horses obedient and supple for military and other equestrian purposes, such as polo, hunting, and jumping. In fact, before negotiating a single obstacle with a hunter or jumper, or before practicing with stick and ball on a polo pony, these four exercises should be thoroughly taught, and practiced over and over again. Many remounts, jumpers, and polo ponies are permanently injured physically or spoiled temperamentally because they are respectively placed in ranks, started at jumping, or put in a polo game before having been taught to execute properly and calmly the movements required in the four exercises. On the other hand the exercises themselves can be executed by mediocre riders, provided the work is under the supervision and direction of capable horsemen. Many spoiled and headstrong horses can also be reclaimed by the same simple system.

The reader will discover that the exercises not only train and subdue the horse, but also teach him and the rider the five rein effects as well as the effects of the legs used either singly or in conjunction. In the beginning the exercises are taught in the order given. When learned fairly well they should be intermingled.

Exercise No. 1

The first exercise consists in riding the individual horse on a circle of about fifteen to twenty-five yards in diameter. He is guided solely with *the inner "opening," or "leading" rein.* The principal purpose of the exercise is to "take the edge off the horse" and thus, without a fight, render him calm, obedient, and attentive. However, many other benefits which result as by-products will be pointed out.

Always begin at the walk, until circulation in the feet is assured. As soon as this is accomplished, take up the trot. *The opening rein must be employed, not the direct rein; that is, there is no tension on the rein unless absolutely necessary to control the horse.* For example, when circling to the right, the right rein is carried out and to the *right front* and is used with "alternating" effects (not a steady tension). The leading effect is applied and continued until the horse both follows the desired path and bends his neck to the right with relaxed muscles. At the exact instant when the relaxation of the neck occurs the rein effect ceases by allowing the rein to go slack momentarily. As the rider "feels" the horse is about to branch off on a tangent to his circle, he reapplies the leading rein and continues its effect until the horse again concedes as just described. This is what is meant by "alternating" effects of the reins. Total relaxation cannot be expected until the horse's first friskiness and exuberance have worn off. Then he soon learns that when he obeys the reins and relaxes he is *instantly* rewarded by escaping the annoyance of the bit. This is the basis of all horse training, i.e., instantaneous reward for obedience through ceasing all use of the aids when the horse concedes. The reward *must be instantaneous*—never so much as one second *after* the horse obeys. If the reward is a fraction of a second tardy he will not associate his concession with escape from the annoyance of the aids.

Thus the light leading effects are used with just sufficient frequency and intensity to keep the horse on the chosen circle. The left rein is entirely passive and "floating"—rather than stretched taut. (It is amazing to note how few riders can keep one hand entirely passive while the other one is active!) The left rein is only used in two cases. First case: if the horse's trot becomes so rapid that there is danger of his breaking into the gallop, a *minimum amount* of *direct tension* on both reins must necessarily be applied momentarily in order to prevent his doing so. Also increase your forward inclination when applying the tension rather than leaning heavily backward. Reins should work exactly parallel with each other in this case and the bit be slowly and gently sawed ("vibrated") through the horse's mouth. The moment he settles to the trot, resume the leading rein. Permit him to trot freely and fast rather than fight his mouth to maintain a regulation or slow trot. Second case: if a horse is inclined to be rubber-necked (i.e., bend his neck too far to the right in answering the right leading rein), the left rein should be lowered so

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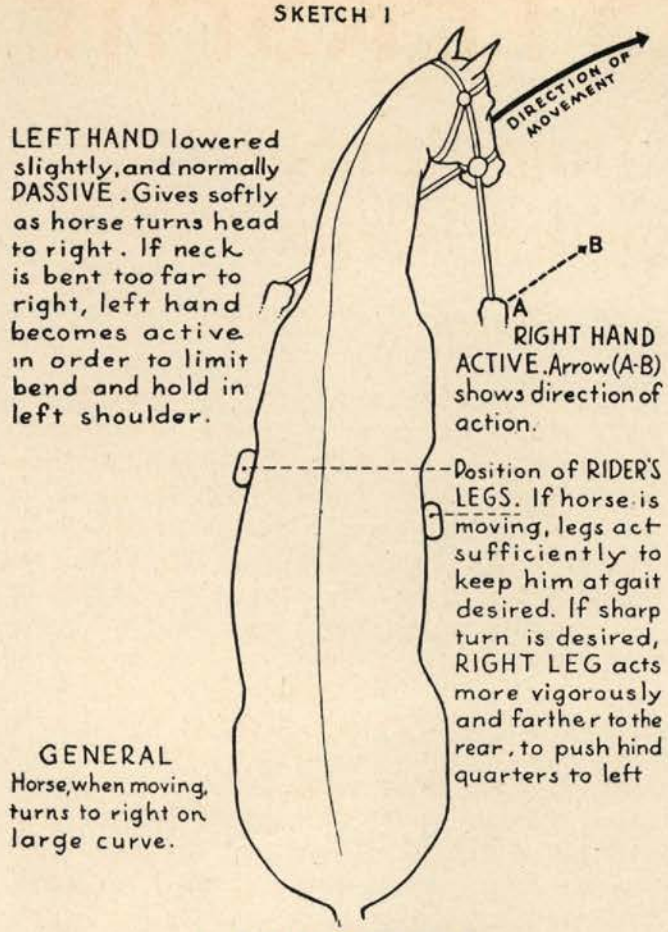
*Commanding the 4th Cav. Brig.; 2d Cavalry Division, Camp Funston, Kansas.

General Chamberlin, an internationally recognized authority on horsemanship and horsemastership, is the author of several books on the subject, published in England and in the United States.



1st REIN EFFECT
Right Opening, or Leading Rein

that the left hand is near the upper part of the horse's left shoulder and just enough tension intermittently applied to the left rein to prevent the horse's bending his neck exaggeratedly to his right. The left rein thus exerts a limiting effect to the bend of the neck. (This is also the one and only case where the hand need be *lowered* to a point where the rein and forearm do not form a straight line. The hands are very frequently *raised* to secure the correct effect on the bit but only lowered in this specific instance.) See paragraph 9 *i*, (1), Changes 1, *F. M.* 25-5.

As the horse becomes calm, the neck should bend uniformly from shoulder to poll and gradually become entirely relaxed and soft. As indicated above, do not endeavor to compel him to trot slowly. Always ride well forward, with weight somewhat over the inside shoulder. This frees the horse's loin from irritating pounding and helps to induce a maximum extension accompanied by a lowering of his head and neck. Calmness is never obtained with a spirited or nervous horse until he is taught to work with an extended and naturally carried head and neck. Soft relaxation of the jaw (chewing on the bit) and a *lateral bend of the neck* usually will soon develop with this exercise if the rider's hands are clever and soft. The hand is kept rather high so that the leading rein tends to act approximately *parallel to the long axis of the horse's head.* If the hand acts perpendicularly to this long axis it will usually overflex the neck and poll and render the horse fretful from constraint. Inevitably, the right leading rein occasionally will have to be used with a little tension to the *right and rear,* particularly with an impetuous horse. Remember, however, to limit tension to an absolute minimum.

Thus, with minimum rein annoyance the horse is allowed to trot on the circle until his playful exuberance has subsided. The exercise is then repeated on a similar circle to the left hand. *If he has any tendency to carry his head high, the rider's inside leg should predominate, pushing the croup slightly to the outside of the circle.* This mobilization of the haunches requires the horse to lighten his hind quarters because they are forced to cover more ground than the forehand. Consequently he soon automatically increases the weight on his forehand by lowering his head and neck. As he becomes calm and obedient, the rider should begin to establish light tension on both reins so as to secure very delicate contact with the horse's mouth. Thus he is gradually taught to "accept the bit"—with his head and neck in a natural, graceful, and extended posture. Remember that if he raises his head too high your hands also move higher in order to make his mouth uncomfortable by slowly and moderately sawing the bit with slightly *increased* tension. *He must not be allowed to escape the bit for so much as a second until finally he seeks relief by lowering the head. Instantly he is rewarded by softening the hands and allowing him to lower his head to a natural position.* You must sustain the gait by appropriate use of the legs while holding the horse's head high, as the additional pressure on the bit tends to slow or stop him. That we have any high headed horses in the army is a sad, though tacit commentary on our riding and horse training!

Depending upon the energy and condition of the horse, exercise on the circle will take from 5 to 20 minutes on each hand, or a total of from 10 to 40 minutes. Where the horse is very "high" or very sensitive, stubborn, etc., he should, prior to any mounted work, *always be worked on a longe until calm and relaxed.* The longe properly used is of enormous value and all officers and noncommissioned officers ought to be skilful in its employment. Many an old but energetic and difficult horse can be quieted and made pleasant to ride by plenty of work on a longe each day before he is mounted. Longeing also will subdue and reclaim many so-called *bad* horses. If necessary, longe such rogues three or more hours daily in two or more periods until through boredom and fatigue they come around to going quietly under the sadde.

With young or difficult horses always execute the exercises and use the longe in a hall, pen, or corral when one is available, since there will be fewer distractions and the horses will be more attentive and responsive.

After having worked the mounted horse on circles such time as is necessary to cause him to trot quietly with his head and neck extended and low, he should be allowed to walk on a *loose rein* for several minutes and caressed by pats on the neck. Many riders are quick to punish and far too slow to reward. He is then pushed into the canter and again worked around the circle, first on one hand and then on the other, until completely soft and amenable at this gait.

In taking the gallop depart on circles, the rider should switch to the outside direct rein and outside leg aids. Use the direct rein effect very lightly in order to weight the outside shoulder just as the legs are used to force the horse to break into the gallop. The outside leg is used more vigorously than the inside and a little farther to the rear. The leg aids, just as the hands, should always be employed alternating—yielding instantly to obedience—resisting (acting) instantly against resistance or disobedience.

Naturally, long periods of work can be given to a remount only after he has been conditioned by longeing and leading until his wind, legs and muscles are fit. Early lessons should always be short and frequent. Three short lessons daily are of much more benefit than one long lesson. Often it is necessary to longe an older and fairly well trained horse, which through being without exercise for some time is bursting with fire and exuberance, for several days before he will be sufficiently quiet and relaxed to ride, even on a circle, without his fighting your hand. Moreover, after all this longeing, it will be found that the trot *only* can be used when mounted for several days because the horse is still too lively to gallop without fighting the bit and resisting in other ways. Patience and intelligence on the part of the rider and hours of slow work both on the longe and by leading prior to riding will gentle, relax, and make manageable most any horse. With an intelligent group of men, a remount squad can be organized in a troop, squadron, or regiment which will produce amazing results by the system here advocated with either remounts or rogues in an astoundingly short period of time.

It will be noted that this first exercise accomplishes the following:

1. Calms the horse through:
   - *a* steady work;
   - *b* permitting an extended and natural head carriage;
   - *c* not annoying the mouth so as to provoke resistances.
2. Teaches the horse:
   - *a* relaxation of his neck in obtaining a lateral flexion;
   - *b* relaxation of the jaw by vibrating the reins;
   - *c* obedience to the leading rein;
   - *d* obedience to action of rider's inside leg through mobilizing the haunches;
   - *e* relaxation of the spine as he bends lightly around the rider's inside leg when mobilizing the haunches;
   - *f* natural extended carriage of the head and neck as well as acceptance of the bit (a well-trained horse only needs the lightest sort of support from the hands);
   - *g* the gallop departs and the aids therefor.

2nd Exercise

(NOTE) This exercise is not attempted until the horse is calm at the trot on the circle.

The greatest difficulty in riding horses either for military purposes or for sports, such as hunting, jumping, or polo, is to regulate the gait (commonly called rating), change the gaits, and to halt. *Absurdly enough while these three items are the most difficult to execute, few riders ever attempt to train their horses to go at any desired rate, to decrease the gait readily or to halt under all conditions promptly and without resistance.* Needless to say, all should be practiced over and over again. Instead of riding a young horse for an hour or more and halting only upon returning to the stable *he should be halted and required to change gaits and rates literally hundreds of times during that time.* If the routine to be described below is followed, there will be few horses that will not only halt quickly and decrease gaits readily when being ridden alone but will do likewise in ranks, at polo, hunting and jumping. Not only does the following exercise teach the horse regulation of gait and rate but it develops his natural balance. Again let it be stated for emphasis that everything described hereafter should be repeated over and over again.

Halting

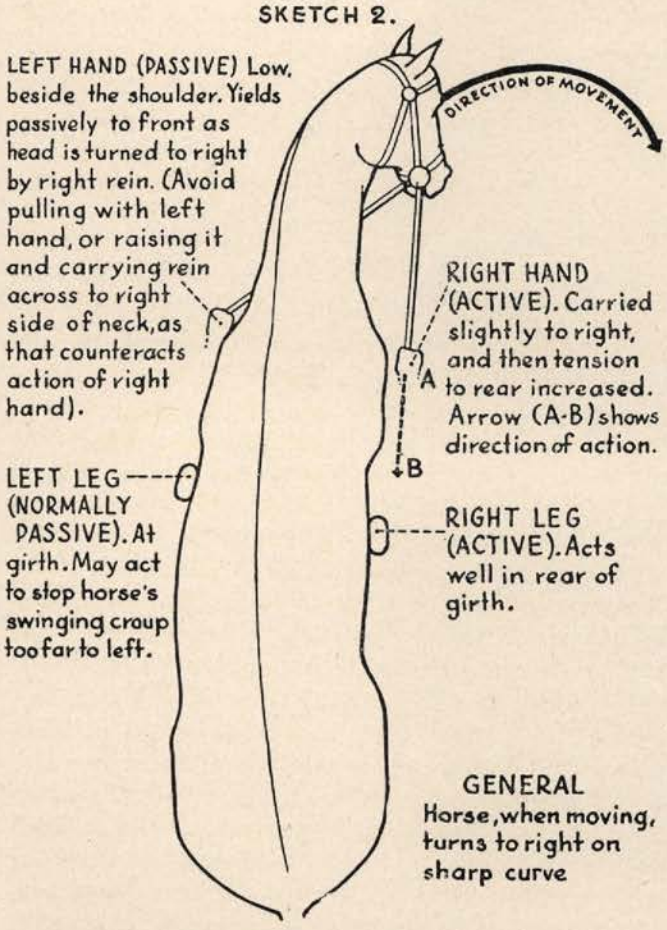
Before describing the 2nd Exercise in detail the correct manner of halting the horse—or decreasing the gait—will be stated. The semi-relaxed fingers are closed on the reins and the hands and elbows diminish the amount of backward and forward play used in following the mouth. Thus the hands gradually become more or less fixed in position relative to the rider's body, at the same time retaining a certain elasticity to prevent jerky action. Since during breaking no flexion of any sort is demanded, all action of the hands, wrists, and elbows should be *softly* and *progressively* executed when setting up increased tension. *The hands resist, in contradistinction to pulling,* so that when the colt concedes, *they do not fly in toward the body, but instead, instantly relax and move forward to reward his obedience.*

In the beginning several successive resistances are set up, the fingers softening momentarily to reward each diminution in the gait. To fix the hands in continuous resistance, as may be done with a trained horse, will break, or over-flex, the poll, which must be avoided. Turning his head *just the least bit* to the right or left and then equalizing the tension on the two reins will expedite the first halt with a contrary colt. This turning

at successive halts should be alternately to the right and left, and as soon as he responds readily, the halt is required in the normal manner with his head square to the front.

The head and neck should not be appreciably raised or otherwise displaced while halting. The moment the halt is consummated, all tension is released from the reins as a reward. The rider does not lean backward, but remains inclined forward from the hips, increasing the pressure with his knees and the downward thrust of his heels in order to keep his seat from sliding forward on to the pommel. To throw the weight backward interferes seriously with the horse raising his croup and engaging his hind legs. Always raise the hands slightly in halting or decreasing rate or gait. If the head is excessively raised the hands are raised correspondingly and light sawing action exerted until the horse seeks respite by lowering his head to a correct position. *Never let the horse escape the hand by raising or turning the head.* Each such escape tends toward your domination by him and his ruination by you.

After the horse has become thoroughly relaxed and calm on the circle and accepts light contact with the hand, *he should be required to walk on a long rein and halted every few steps.* The *instant* he halts the fingers should be completely relaxed and the reins allowed to hang entirely loose while the colt is permitted to rest in place and is patted on the neck for several seconds. Next he should again be moved forward in response to the rider's legs. Dot not contradict the legs by pulling on the reins as the horse moves forward. As soon as he learns to halt promptly and stand quietly, the periods during which he rests should be made progressively briefer so that he *halts only a second or fraction thereof before being urged forward again by the rider's legs.*



2nd REIN EFFECT
Right Direct Rein of Opposition

Next, changing from the trot to the walk and vice versa is practiced. After walking quietly for a few moments, he is squeezed into the trot and as soon as he settles to a steady, balanced movement he is brought back to the walk and kept at this gait until complete calmness occurs. The periods at the walk or trot should be briefer and briefer, and the changes more and more frequent. After a few lessons much practice also should be given at extending the trot little by little, then bringing the horse gently back to a slow trot; then to a halt. When this exercise is executed well, the horse should be brought from the normal trot directly to the halt, then moved out at the normal trot again. To reiterate, these exercises must be repeated over and over and over again. *Also the rider's hand must give the horse's mouth entire freedom the moment he halts.* If the hands and legs are skilful the horse will soon obey the lightest effect. As soon as resistance or displacement of the head develops in halting or slowing the rate, similar work at a slower pace should be resumed. In other words, if the horse resents halting from the trot, more work in changing from the trot to the walk and from the walk to the halt is necessary. *The preparation for the halt from the trot has not been complete.* The exercises can be greatly elaborated and made more difficult as obedience and calmness become habitual.

For example, move (a) from halt to slow trot, to normal trot, to extended trot, to normal trot, to slow trot, to halt; (b) from halt to normal trot, to extended trot, to normal trot, to halt; (c) from halt to extended trot, to halt. When the horse is fully prepared, he should come to the halt from the extended trot in about six or seven steps, but such tests are not attempted until after good condition is acquired with calmness and obedience normal. *The prompt moving out after a halt, and prompt, smooth, increasing of speed after it has been reduced, are vitally essential to teach the horse to collect himself naturally.* Without displacing his head unnaturally he very soon learns to check or halt with his hind legs advanced well under his belly ready to spring quickly forward. He moves and handles himself as does a horse at liberty, using his head and neck (balancer) naturally, and works at maximum efficiency.

These gymnastics can be executed on circles, straight lines, or the serpentines and zigzags, to be described under Exercise 3. If a horse is exceedingly "hot," it is usually best to keep him on circles until he becomes perfectly calm. After all the work involving the halts

and changes of rate and gait described above are performed easily and promptly, similar work at the canter and gallop, etc., should be given as: (a) from canter to gallop and reverse; (b) from trot to canter to gallop, and reverse; (c) from canter to walk, to halt, and reverse; (d) from canter to halt and reverse; (e) finally, when the horse becomes strong, conditioned, obedient and calm, he should halt in a few yards from the extended gallop, promptly back a few steps and spring forward again gracefully and without excitement into the gallop.

From this exercise he learns:

1. Obedience to the direct reins through halting or slowing down in answer to tension or resistance by both hands. NOTE: Extreme care should be taken that the hand *resists and does not pull.* In other words, if the rein, held by a resisting hand, were cut, the hand would not fly to the rear; whereas in the case of the pulling hand, it would.

2. Obedience to the legs—i.e., moving forward frankly, energetically and promptly in answer to pressure from the rider's calves or spurs. (A horse should gradually be taught to fear an attack from the rider's legs more than anything else in the world.)

3. To engage his hocks naturally at all appropriate times.

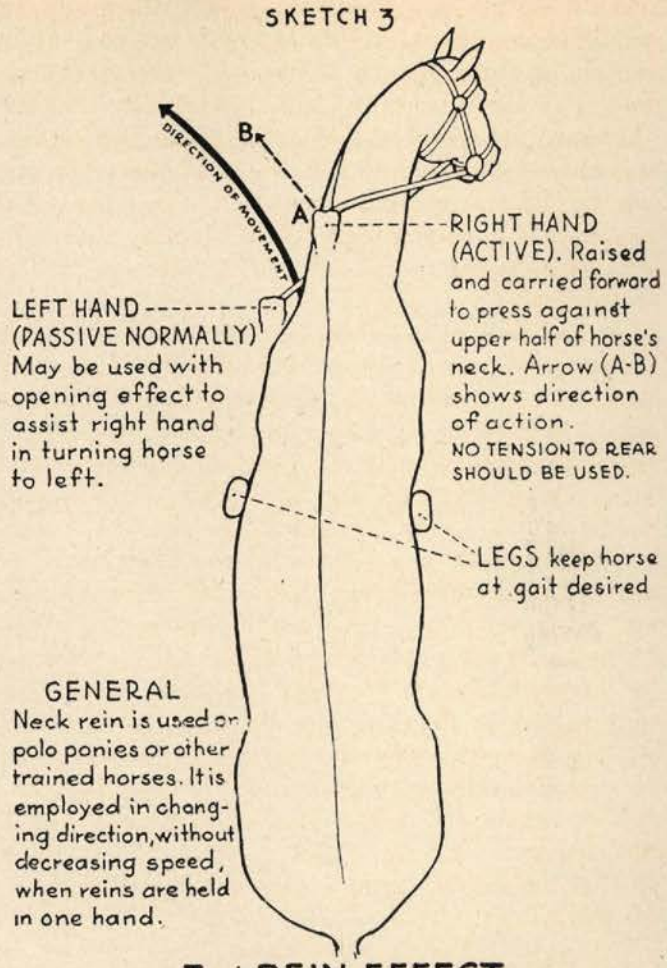
4. To move lightly in good balance.

5. To slow the gait or halt almost instantly in answer to light rein indications.

3rd Exercise

The third exercise consists in schooling the horse, first on serpentines described on large curves, and later, as his training progresses, on zigzags arrived at by progressively reducing the radii of the serpentine curves until sharp changes of direction of approximately 180° are executed on the hind quarters as a pivot.

In these movements, the "bearing" or "neck" rein only is employed. For example in using the right "bearing," or "neck" rein when turning to the left the *right hand is carried just across the crest of the neck, and acts toward the left front.* To be most effective, it should bear against the right side of *the upper half of the neck,* as this part is more sensitive than that near the shoulders. It is an artificial effect in that it is not powerful, but is habitually used with cavalry horses and polo ponies to change direction without changing speed, whenever the reins are held in one hand. By first using the *left opening rein* and immediately thereafter alternating it with the *right bearing rein,* obedience to the *right bearing rein alone* is quickly taught. The effect is to turn the horse's nose upward to the right, and force the bulk of the weight of the neck onto the *left* shoulder. While this effect is not strong the horse's balance is shifted toward the left front tending to cause him to turn to the left. When working with a green colt, the rein is used intermittently each time the left foreleg is moved. If the rider's right (outside) leg is used in conjunction with the right bearing rein the horse soon learns to engage



his haunches and to pivot on the hind quarters in changing direction.

Since the horse during the first part of his lesson has been calmed by work with the opening rein on circles changes of rate and gait and by halts, the exercise on serpentines and zigzags may be begun at the trot. In this work the rider habitually uses the outside leg to engage the haunches. In other words, the haunches are kept on the inside of the curve of the serpentine. Thus, travelling over less ground than the forehand, the horse as a result must lighten the weight on his forelegs at the expense of his hind quarters. This tends to improve his balance and render him light to effects of the hand. As soon as he appreciates the significance of the bearing rein the inside hand (leading rein) is entirely passive. For example, as he turns to the left, the right bearing rein and the right leg are used; as he turns to the right, the left bearing rein and left leg are active. Of course, if the horse attempts to escape the hand and whirl around too rapidly or to cut inside of the path which the rider desires to traverse, effective corrective measures must be applied by the inside leg and rein. As a variation, and to obtain complete control, the rider should occasionally *mobilize* the haunches on a serpentine. *Never permit a horse to become routined.* Later on

when serpentines and zigzags are used at the gallop, he should be brought to the trot just prior to changing direction, otherwise he will be required either to change lead or *gallop false* on the half turns. Until complete obedience and much experience are gained, no attempt should be made to require the change of lead at the gallop. In fact, the trooper's horse and the polo pony as a matter of self preservation when necessity demands, will learn without special schooling the changes of lead at rapid gaits.

As the horse becomes obedient, calm, and relaxed in changing directions in response to the outside leg and neck rein, turns should be made sharper and sharper until it is made by pivoting with the hind legs remaining almost in the same place. Since he has been given many lessons in halting, each sharp change in direction should be executed by first indicating a partial halt with both direct reins (using the hand in a *high position*) and immediately thereafter by applying the neck rein and outside leg to secure the turn on the hind quarters. Many, many halts should be executed while exercising on the serpentines or zigzags. Inevitably horses will sometimes resist the turn, in which case the neck rein must be changed to what is known as the "indirect rein of opposition in front of the withers." Taking the right rein for an example, instead of acting to the left front, it now acts to the left rear across the horse's neck *but in front of the withers*. Such *tension* as is necessary is applied in order to secure a sharp turn to the left, remembering always that the right leg assists as strongly as necessary in holding the haunches in place. It also may be necessary to employ the left direct rein in combination with the right indirect rein of opposition if the horse presents marked resistance. All resistances are certain signs of insufficient training at slower gaits and during preceding exercises.

The horse should often be worked on circles with the bearing rein as well as with the opening rein after this 3rd exercise has been taught.

This exercise teaches the horse:

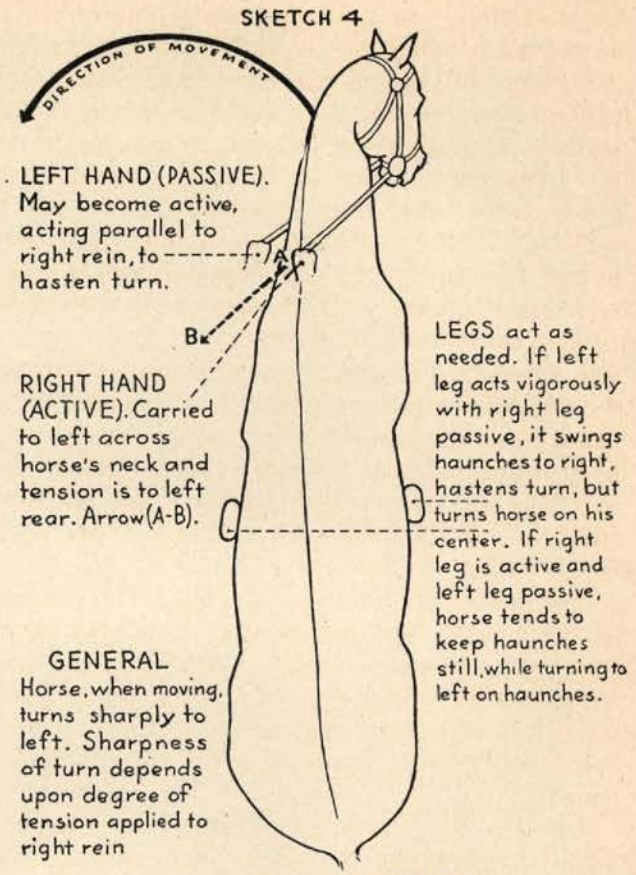
1. Obedience to the bearing rein;
2. Obedience to the rider's outside leg;
3. Lightness of the forehand;
4. Engagement of the inside leg on all turns;
5. Agility and natural balance.

4th Exercise

Shoulder-In

This last exercise is not difficult and is the *most valuable of all gymnastics given a horse*. Having taught mobilization of the haunches on the circles and occasionally on serpentines, there will be no difficulty in securing the shoulder-in from any horse by even a mediocre rider who is properly supervised and directed.

Taking "right shoulder-in" as an example; *the horse is bent symmetrically throughout his spinal column, from poll to point of croup, around the rider's right leg, and moves toward his left front with his body set ob-*

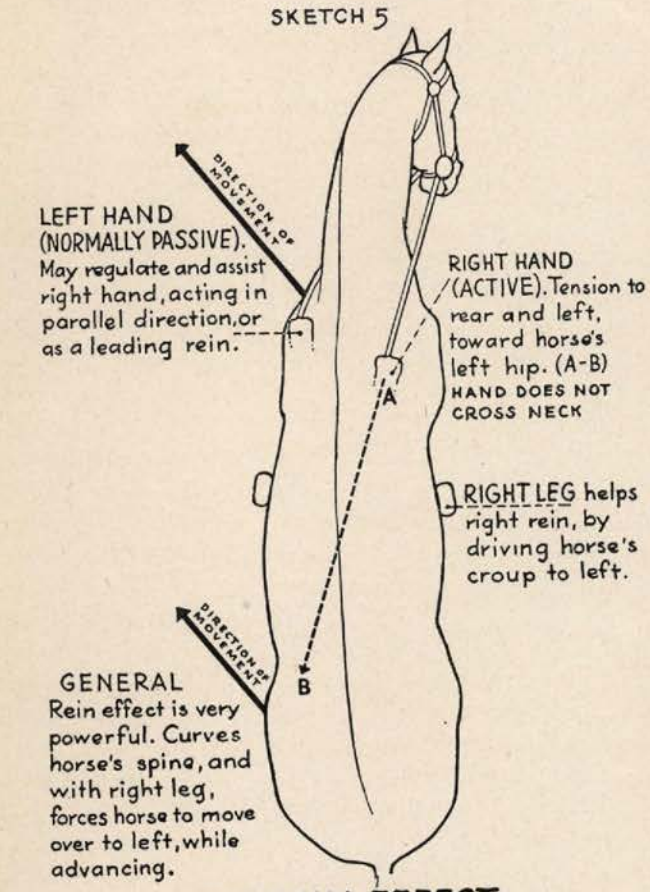


liquely to the line of motion. This requires him at each step to cross his fore and hind feet, respectively. The movement is obtained by: (1) shortening the right rein; (2) beginning a turn to the right with the right opening rein; (3) just as the horse's forehand is led off the straight line which he has been following, the leading rein is changed into a *"rein of opposition in rear of the withers,"* which acts in the direction of the *left haunch;* (4) at the same instant, the rider's right leg is carried back a few inches and used to force the horse's croup to the left; (5) the left rein, with combined opening and direct effects, assists in conducting the horse in his oblique attitude along the same straight line he has been following; (6) the left leg aids the right as necessary to sustain impulsion.

The horse thus is bent around the rider's right leg so that his right shoulder is inside the curve made by his own spinal column. Obviously his right fore and right hind legs at each step must cross over in front of the left fore and left hind, respectively. If the rider is unsuccessful in obtaining shoulder-in along a straight line, further preparatory work in mobilizing the haunches, and in schooling with the "rein of indirect opposition in rear of the withers," while moving through the corners of an enclosure is indicated. The horse is simply *pushed* into the corners by this rein effect and the rider's inside leg.

The benefits of shoulder-in are manifold. If the horse is gradually required to carry his head in a low position, a soft, relaxed lateral bending of the well extended neck occurs. *Alternate resisting and relaxing of the fingers,* which is necessary to keep the horse oblique to the direction of motion, will secure complete relaxation of the jaw, as well as a slight flexion of the poll as the horse gives himself entirely over to his rider. The crossing of the fore legs involves a raising, and an unusual swinging, of the whole right fore leg across and in front of the left fore, necessitating suppleness and relaxation of the right shoulder and knee. Also the horse is required to obey the rider's right leg and to bend his whole spine laterally as he moves in a sidewise direction. To cross his right hind over the left hind calls for engagement of the former far forward under his body. This supples the joints of the hind leg. *The horse, in working at right shoulder-in, is simply over-balanced to the left because of the attitude forced on him by the aids, and consequently is compelled to chase his own center of gravity in order to maintain balance.* When fully trained, a shying horse can be pushed into an object which frightens him by applying shoulder-in to the shoulder away from the object.

Shoulder-in, although here described while moving on a straight line, should be practiced on curves, serpentines and circles. On circles it is simply an exaggerated



mobilization of the haunches. *The horse's curved attitude, and not the particular direction in which he moves, constitutes shoulder-in.* His spine is bent like a bow, with the rider's arm and rein functioning as the bowstring and his inside leg as the archer's hand bending the bow. As it is somewhat difficult to execute straight to the front, this phase is taught last. *Practice on circles first, next on oblique lines and finally straight to the front with the horse oblique to the line of movement.*

The principal points to be observed in right shoulder-in are:

1. Shortening the right rein and using the rein of *"indirect opposition in rear of the withers"* predominately so as to bend the whole spine (to do this the right hand should be above the top of the right shoulder blade, not across the withers);
2. Limiting the bend of the neck with the left rein so that it is uniform with the curve of the backbone;
3. Maintaining impulsion;
4. Endeavoring to keep the neck low, well extended and relaxed and the jaw soft with frequent flexions;
5. Using the right leg just before the horse's right hind starts to cross the left;
6. Stopping the exercise before the horse, through boredom, shows resistance.

As always, the rider's fingers and legs "act" or become "passive" as required: (1) to break any resistance; (2) to maintain the correct position; (3) to follow the prescribed path; (4) to reward obedience. In right shoulder-in at the walk, the fingers relax as the right fore crosses the left fore, since this difficult movement of the right shoulder requires its freedom. They tighten more or less as needed at the instant the left fore steps to the left front, which prevents the horse from moving on a curve to the right. Just at the time the fingers tighten, the rider's right leg, or spur, pushes the right hind across the left hind. Since the right hind moves immediately after the left fore, the action of the rider's leg is timely. At the trot, similar timing of the aids is essential. Remember that the diagonals move *simultaneously.*

Shoulder-in is obviously almost universal in its relaxing and suppling results. *Taught first at the walk and slow trot, as all exercises should be when feasible, it is most efficacious when executed at a free, long-striding trot.* The long strides and impulsion make agility, relaxation, suppleness and good balance imperative. At the gallop the exercise obviously is confined to left shoulder-in when the horse is leading right; right shoulder-in, when leading left. The work has no value unless his position is correct and all resistance is absent. The horse should be utterly relaxed and contentedly obedient.

Where a rider's inexperience makes it advisable, advantage may be taken of a wall or fence to give first lessons in shoulder-in. In so doing, the horse's head is turned toward the wall so that he cannot escape obedi-

ence. Great care, however, must be taken to prevent the crossing of the right fore and right hind *in rear, instead of in front,* of his left fore and left hind, respectively. The wall should be utilized only at the walk for interference of his legs easily may occur. Moreover, the horse is controlled largely by the wall and not the aids. It is, in fact, a very simple exercise to execute for either horse or rider.

Each horse develops, on one side or the other, certain stiffnesses and resultant resistances, or vice versa. If, for example, he stiffens his neck and jaw to the left front, he generally increases the resistance by thrusting his left hip to the same side. The quick remedy is shoulder-in. In this case, left shoulder-in is indicated, but in practice it will be found that some work at right shoulder-in will also be beneficial. This exercise is immeasurably helpful in breaking up all such resistances and a few steps at shoulder-in will reveal to the rider who mounts a strange horse, where the resistances lie—whether in the croup, jaw, shoulder or elsewhere.

It is an excellent idea with an old, well-trained horse at the beginning of each day's work to require a few steps of shoulder-in at the walk shortly after leaving the stables. Complete relaxation of the jaw, neck and spinal column are quickly obtained. This puts the horse in a pleasant mood and he becomes calm, obedient and agreeable in the work to follow.

The above explanation has covered in detail the benefits of *shoulder-in.* Its value is inestimable.

* * *

Thus, we find that the four exercises described require the use of all rein and leg effects by the rider. For the horse, they develop all the objectives of training; i.e., calmness, boldness, suppleness, agility, balance, relaxation, and long low strides through absence of overflexion and distortion.

These exercises are certainly within the capacity of any good horseman directing training, and *they will produce results without fail if followed in detail.*

The First Obligation of an American

I have served in the Army and I know the soldier's point of view both while in the service and in later life. You may take it from me that your service to the nation in its hour of need will not be a waste of your time and effort. In the years that lie ahead you will hold your heads high in the thought that you gave honest and faithful service as soldiers when your country called.

Remember that you are the chosen fighting men of the nation. Others throughout the land are working to supply you with the equipment and the weapons with which you are to act in our defense. But, however earnestly and effectively they may labor, no man who contributes to the common cause only work or money can ever stand on the level of you who are asked to risk life itself for your country and your countrymen.

This nation was founded in the bond of blood and sacrifice by men who pledged their lives, their fortunes, and their sacred honor. They reached their goal. Now you men of a new generation are called upon to preserve the freedoms which they so bravely won. To serve in the common defense, for the general welfare, is the first obligation of an American citizen. You will not falter. You cannot fail.—Henry L. Stimson, *Secretary of War, in his address to the Soldiers of the Army of the United States, August 15, 1941.*

Editorial Comment

MANEUVERS, 1941 — IN GENERAL

UNQUESTIONABLY, the 1941 maneuver period, just concluded was an unequivocal success. It accomplished the purpose for which it was intended. It proved that our expanded army as a whole is *mobile* and rugged. "They can take it." Whoever won or lost the battle is an item of little consequence. The important thing is: *What did we learn?*

Our attention, therefore, is now focused professionally and impersonally on an evaluation of the various maneuver operations and principles involved; to determine the degree of unit combat efficiency and any lessons that can be learned as a result of prolonged field experience.

The press has devoted considerable space in criticism of leadership in the higher echelons of our army, which we believe has been magnified far out of proportion to fact. We should not be deluded. The paramount lesson in our opinion, *observed first hand,* was indicated in several typed pages of comments distributed by Lieutenant General Lesley J. McNair, GHQ, at the critique terminating the first phase of the Second vs. Third Army Maneuvers in Louisiana.

Some of the typical comments that applied *in general to nearly all combat units* were as follows:

"Reconnaissance and security missions continue to be unsatisfactory."

"As in the past, there were too many cases where infantry failed to employ maneuver to overcome resistance."

"It is fundamental that infantry must be trained to melt into the ground and avoid bunching on every occasion when under fire."

"Excessive frontages were so common as to be almost the rule."

"It was so common as to be almost unusual that unit transportation was taken too close to the firing line. In one division, great masses of vehicles were jammed up close to the firing line."

"It was noted that there was a growing tendency in all units for officers and men to take off their equipment at every possible occasion and rush to the nearest soft-drink stand for refreshments—a most unmilitary performance."

". . . failure to maintain contact with neighboring units."

". . . a battalion halted at a destroyed culvert for at least an hour until an engineer officer came up and located a feasible crossing only two hundred yards to the flank."

"Most marches were made during daylight hours when they should have been made under cover of darkness."

". . . . a great disregard of actual hostile aerial combat formations encountered."

"Our troops are not sufficiently air conscious. . . ."

"Only in a few cases were artillery weapons well cared for. Some were neglected so as to have rusty bores."

"Police of bivouac areas was generally poor."

And so on . . . and so on . . . and so on . . . !

At the end of the second phase it was indicated that the same criticisms still applied. It would appear obvious, therefore, that the sum and substance of the whole matter is a definite deficiency in *basic training . . . in fundamentals.* The junior officer group and not the senior group is the weakest link today in our military chain. A watch, no matter how perfectly constructed and adjusted, simply cannot function without a *hair spring.*

In our opinion, the great lesson behind the maneuver lessons is that we have superficial leadership in the platoon, company (troop or battery), and battalion (or squadron). We must crawl before we can walk; and for this reason, we should not expect marked improvement in successive large-scale maneuvers until this noted condition in the lower echelons can be rectified. The success accredited the German Armies is due largely to thorough *basic training.*

The root of this evil began to sprout immediately after World War One. Because of curtailed appropriations for field service, and reduction in size of our Regular Army far below that recommended by General Pershing, a large corps of Reserve officers was created, with resultant undue importance given to academic correspondence work, theory, and map problems. Officers were promoted, with insufficient basic training in the practical combat leadership of platoons. They, in turn, now are not training their subordinates thoroughly in fundamentals. Units are road-bound when they should be well grounded tactically in the "pincher" conception of offensive fighting.

Another cumulative evil is, that in the regular establishment, promotion had stagnated to the point that many officers were held in the same grade for a period of sixteen years or more without opportunity for practical experience in exercising command appropriate to age and length of service—for which we are paying the fiddler today.

As we watched the front-line combats in Louisi-

This photograph is presented editorially as a grim warning to all road-bound units that are oblivious to the capabilities of enemy combat aviation.

ana, a general officer, with a noteworthy record of experience in actual warfare, was heard to exclaim, "This is fantastic. These men are not fighting. They seem to have forgotten all they know or have been instructed to do. There is too much *playing the maneuver* instead of assuming actual war conditions." Some may say, "When the bullets begin to fly the troops will take cover," etc. This we doubt, since men under the stress of battle usually do subconsciously what they have been trained to do during peacetime.

The strength of the Army of the United States recently was estimated at 1,588,500 officers and enlisted men. The breakdown is as follows:

OFFICERS	
Regular Army	15,000
National Guard	22,000
Reserve Officers	76,000
Total	113,000

It can be noted that there are over six times as many non-Regular officers as Regular officers in our army today; and of the total number of enlisted men, only about half of them are serving under a three-year enlistment.

ENLISTED MEN

Regular Army, 3-year enlistments	505,000
Regular Army Reserve and one-year enlistments	17,500
National Guard in Federal service	248,000
Selective Service Trainees	705,000
Total	1,475,000

In view of the above, it should not come as a surprise that our army is not yet ready in strength, training and equipment for shooting war, and we probably never can be until our people acquire a *Total War perspective*. For example, the personnel strength of the German army is about seven times that of ours. We are fortunate, however, that the situation is not worse than it is! We still are far short of the necessary fighting implements for modern warfare but at least we do have enough with which to TRAIN!

The objective, therefore, is clear. Our material is good. We need only *time* to thoroughly train our lower echelons in fundamentals; to build up the spirit and technique of the offense. We must insist on the rigid adherence to basic training principles and methods. It is a *command* responsibility! We must have many more of the prolonged, large-scale maneuvers to give experience to the higher echelons and toughen and test combat efficiency. In our opinion, unless we immediately do *get back to earth* in our thinking and doing, our future maneuver lessons will continue, in general, to bear a marked resemblance to those of the past.

* * *

Horse Cavalry

The 1941 maneuvers developed little that was startlingly new for our horse cavalry, because of certain influencing circumstances.

In the Louisiana Army Maneuvers the National Guard, 56th Cavalry Brigade and all of our Regular Horse Cavalry regiments were involved excepting two; but unfortunately, the east flank maneuver area was bordered by the Red River which was a major terrain obstacle. The two cavalry divisions and the 56th Cavalry Brigade consequently found themselves often in Texas on the open west flank of the opposing armies resulting in the usual *cavalry vs. cavalry* engagements. It is believed that horse cavalry, however, could also have been used effectively in covering the advance or retirement of their respective armies in these situations.

We already were aware of the relative merit of our cavalry units. We knew that cavalry can *march*. The 1st Cavalry Division while in the Louisiana area covered approximately 900 miles, for the most part the result of administrative marches. Quartermaster regiments were used extensively in shuttling infantry on administrative road marches. A similar use of quartermaster vans in shuttling horse elements on administrative marches would greatly have enhanced cavalry combat efficiency.

Our horse cavalry divisions, by their own means, crossed and recrossed the Sabine River at night. In the words of General McNair: "The 1st Cavalry Division performed a notable feat in crossing the Sabine River on the night of 18th and 19th of September." Our cavalry accomplished normal cavalry missions in a manner prompting numerous commendations from higher commanders and the press (see pages 33-36).

Horse cavalry proved again that it can operate in terrain prohibitive to combat vehicles and can materially assist combat vehicles in their operations where terrain conditions make mechanized and motorized units road-bound. General McNair characterized the Louisiana Maneuvers as the "Battle of the Bridges" because demolished bridges at times paralized our highly mechanized and motorized road-sensitive armies. Similar terrain can be found in numerous areas of the Western Hemisphere, particularly the eastern and northwestern seaboard areas of the United States and in Russia.

It is hoped that, in a subsequent maneuver, all of our horse cavalry will find itself attached to either one army or the other to determine the relative advantage of an army that has horse cavalry over an army that does not.

* * *

Horse-Mechanized Cavalry

In the Louisiana maneuvers our two Regular H & M regiments and three National Guard H & M regiments were involved. While not all of the horse-mechanized regiments were fully equipped with portée vehicles and radios, the basic organization as set up by the Chief of Cavalry proved definitely to be sound.

Horse-mechanized regiments are difficult to control, and as our Chief of Staff, General Marshall, expressed it, "The horse and mechanized elements should be employed as a single unit. Regimental commanders must *think it through.*" It was noted that where the missions were appropriate and when the employment was *thought through* the results obtained were extremely effective; for example, the 4th Cavalry (H-Mecz), attached to the Red Army, received a commendation from the Army Commander, General Ben Lear. In this regard, however, as opposed to this thought, we might cite a test conducted in the same instance. The portée vehicles were withheld from a horse-mechanized regiment for possible use in shuttling infantry. Two of the horse troops, without radio communication, were attached respectively to two infantry divisions for close-in reconnaissance. One division assigned its troop, less a platoon, the mission of establishing a *counterreconnaissance screen* to its flank, covering a *front of twenty miles.* While complimentary to the prowess and capabilities of cavalry, such a mission was not within the realm of possible effective execution. Parenthetically, the troop

in question had had but three feeds of grain in three days and was supplying its men with Type C rations by means of a *jeep*. Whenever a unit is attached to another, tactically, for a prolonged period and not administratively, such a situation frequently exists. It obviously is a better solution to permit a horse-mechanized regiment to operate as a unit under its own commander.

There is no need for confusion as to whether or not the Corps Reconnaissance Regiment lacks the driving power (tanks) to smash through resistance to obtain information. For a line of demarkation, we should remember that the reconnaissance regiment is not intended as a combat regiment, although it does have considerable striking power. It was designed primarily to provide reconnaissance for the Corps with counter-reconnaissance and security as secondary missions. Reconnaissance usually implies dispersion, speed and stealth, whereas combat means a concentration of force. The necessity for *reconnaissance in force* is not habitual. When it is necessary, a force of sufficient strength as a reinforcement should be employed by the Corps. There are tank battalions, motorized infantry, artillery and combat aviation for this purpose that should be provided by the Corps.

Horses and combat vehicles complement each other, particularly in the reduction of road blocks; and, as demonstrated in Louisiana, the horse-mechanized regiments can perform the missions for which they were designed when their contemplated employment has been *thought through*.

(See articles on pages 37 to 46 inclusive.)

Military Courtesy

Courtesy usually is a *reflected attitude* indicative of background, training, and good breeding. That it almost invariably is uniform in character in military organizations suggests that while one usually finds its greatest manifestation at the bottom, the inspiration of military courtesy emanates from the top.

General Pershing, in World War One, requested: "Send me men who can shoot and *salute*." This is easily understandable. When a senior in rank addresses a junior, even *in the field*, he usually is giving orders, or instructions, or is seeking information. The junior (even though it were not a military regulation) who does not immediately assume the *position of attention* is invariably one who is inattentive, unalert and, moreover, he is rude according to ordinary civil standards of courtesy and consideration. We are approaching the subject, however, from the standpoint purely of military value. Psychologically, it is far-reaching.

Those units, personally observed in the Louisiana Maneuvers, that were outstanding in military courtesy; i.e., the Military Police, the Armored Force, the Cavalry and the Engineers, etc., were outfits radiating *esprit de corps*. In units where the earmarks of military courtesy were conspicuously absent it was noteworthy that the men were apathetic and lethargic. They were careless about camouflage precautions and oblivious to aerial attacks. They had a "Tom, Dick, and Harry—come-on-gang" attitude without military decorum. They lacked snap and the spirit of the offense. They were what a World War One veteran would classify as a "rag-time outfit." The enlisted men could not furnish information relative to the locations of the CP's, of designations of adjacent and supporting units, etc. They lacked interest and *military curiosity!*

There is ample historical proof that when an army lets down in military courtesy, there is a proportionate let down in military discipline.

This is a command responsibility and can be aroused by mutually earned professional respect.

Essential Reading

In the splendid October, 1941, issue of The Command and General Staff School, *Military Review*, Fort Leavenworth, Kansas, first place prominence was given to an article captioned, "The Company Commander," by Captain Hans Ellenbeck, German Army. No officer could possibly read this comprehensive and excellent portrayal of the rôle without professionally deriving a great deal from it. In our opinion, it should be regarded as essential reading!

The following is a brief excerpt:

Authority and Discipline

Discipline is the foundation upon which an army is built. A goal of military training should be to inculcate the mere external discipline of the military unit until a point is reached where this discipline is embodied in each individual member of that unit as a fixed mode of living. An officer who in his own person embodies also the subjective type of discipline will be able to attain the goal by making of himself a living example of conduct for his men. His authority will be assured even in the most difficult situations if his sincerity is perfectly obvious, and his men willingly acknowledge him as their leader. It is not really essential for him to be the most intelligent man in his unit, but he must be the most blameless. German soldiers, and especially the ordinary, plain fellows among them, are quite sensitive to the ethical quality of their superiors. They will be only too glad to follow a leader they can look up to and for whom they have genuine respect. Conditions in the field make it necessary for an officer to spend day and night under the scrutiny of his men; and that calls for a high degree of self-discipline, both on and off duty. It implies first of all cheerful and conscientious performance of all necessary tasks; but aside from that the situation also requires cheerful willingness to be content with little in the way of food or lodging, a habit of keeping sober at all times, self-control in matters of sex, avoidance of profligate conversation, as well as a certain steady and calm self-assurance of manner. . . .

2d Cavalry Division Organizes 11 New Units

Organization of 11 control and service units of the 2d Cavalry Division without any increase in the present Division strength of approximately 8,200 officers and men, has been announced by the War Department.

The new Cavalry units authorized were already formed provisionally with about half of their full strength. They participated in Second Army maneuvers in Louisiana under this provisional organization at reduced strength, with soldiers taken from other squadrons of the Division to form the skeleton units. The activated units will maintain this reduced strength.

Elements of the 2d Cavalry Division formed are:

Troop A (Reconnaissance) 92d Cavalry Reconnaissance Squadron
2d Signal Troop
Headquarters and Headquarters and Service Troop, 9th Engineer Squadron
Headquarters and Headquarters Battery, 2d Cavalry Division Artillery
Headquarters and Headquarters Troop, 17th Quartermaster Squadron
Troop B (Truck) 17th Quartermaster Squadron
Division Surgeon's Office, 2d Cavalry Division
Headquarters and Headquarters Detachment, 2d Medical Squadron
Troop A (Collecting), 2d Medical Squadron
Clearing Troop, 2d Medical Squadron
Veterinary Troop, 2d Medical Squadron

* * *

Major General John Millikin commands the 2d Cavalry Division at Camp Funston, near Fort Riley, Kansas; one of the two such divisions in the Army.

Housewife

For that stitch in time, the Quartermaster Corps will furnish each Army squad with an Army "housewife." The "housewife" is a small packet containing sewing and darning needles, assorted buttons, pins, approximately 100 strands of thread, and other articles necessary for emergency clothing repairs. A special braiding technique keeps the thread together until the last strand is used. Thread is provided in two shades of olive drab and white.

Lubrication Guides

In the November-December, 1941, issue of *Army Ordnance* there appear two War Department Lubrication Guides—Scout Car M 3A1, and Carrier Mortar 81-mm. half track M4.

These excellent charts with the accompanying notes doubtless will be of great value to those units having such equipment. (Also see page 61, our July-August 1941 issue.)

Spark-Proof Shoes

Spark-proof shoes are among the latest types of footwear being tested by the Army. The new shoes are designed for soldiers who dispense gasoline and other inflammable materials, particularly in the Armored Force, where a spark may be disastrous.

Vulcanized fiber, instead of metal, is being used for washers in the heels of these new shoes, and the nails are made from a non-sparking metal. Shoes made according to this new design are being given a thorough workout by soldiers of a gasoline and oil battalion in the Armored Force. If they prove satisfactory, all soldiers who perform duties where a spark may be dangerous, will be provided with these spark-proof shoes.

Portée

Delivery of motor vehicle trailers will make it possible for Cavalry units to travel farther and faster and still have mounts for specialized work upon reaching their destination.

The trailers are of two types—a small two-horse van and a large semi-trailer combination animal and cargo carrier sufficiently large to hold eight horses and their required equipment.

Plans of the Quartermaster Corps call for procurement of approximately 1,000 of the larger carriers. They soon will be delivered for use by the Cavalry, but will be maintained by the Quartermaster Corps.

Notice

For several years it has been the practice of The CAVALRY JOURNAL to publish, in the November-December issue, a complete roster of cavalry officers. This year, however, due to certain restriction and to the greatly increased number, including National Guard and Reserve Officers on active duty, such a roster cannot be made available. Reference can be made to "War Department Changes," which have appeared regularly in The CAVALRY JOURNAL during 1941.

Annual Meeting

The Annual Meeting of the United States Cavalry Association will be held at the Army and Navy Club, Washington, D. C., at 8:00 PM, Monday, January 12, 1942.

Formal notification, together with proxy cards will be mailed to active members of the association stationed within the continental limits of the United States.

In order to establish a quorum at the annual meeting, all members who will be unable to be present are requested to return the proxy cards promptly to the Secretary, United States Cavalry Association, 1624 H Street, NW., Washington, D. C.

Editor's Mail

Smoke

EDITOR, THE CAVALRY JOURNAL:

I wish to thank you very much for your thoughtfulness in sending the article which appeared in the September-October, 1941, issue of The CAVALRY JOURNAL, written by Major Miller and titled "Smoke for Protection."

While Major Miller's article is very interesting and depicts a method by which smoke can be generated from tanks under field conditions, this method of smoke generation and this type of smoke has never been acceptable to the Armored Force. In 1924, the Chemical Warfare Service developed a very neat and efficient apparatus for installation on the outside of a tank using FM as a smoke liquid. At that time tanks were under the jurisdiction of the Infantry and after many tests the Infantry decided that this type of smoke was not satisfactory for use with tanks due to its corrosive action. Later the Armored Force Board set up specific requirements for a smoke generator which prohibited the use of FM, FS and other corrosive gases. Our effort, therefore, for the past two years on this type of apparatus, has been devoted to producing a smoke in the manner outlined in Major Miller's article, but by means and methods which eliminates the use of the corrosive type of smoke. You might be interested to know that some one hundred and forty apparatuses designed as outlined above have been under field service tests during the Louisiana maneuvers and the results have been very satisfying.

I consider that the tactical use of smoke as outlined in Major Miller's article is correct and that his article is very interesting from that viewpoint.

WILLIAM N. PORTER,
Major General,
Chief of the Chemical Warfare Service.

Washington, D. C.

Cans

EDITOR, THE CAVALRY JOURNAL:

In reply to your letter of October 7, 1941, inclosing a letter which appeared in the September-October issue of The CAVALRY JOURNAL, you are advised that when the Type C ration was developed, the Quartermaster Corps considered using the rectangular can because of the resultant space saved. Investigations proved, however, that it would result in considerable additional expense if the flat can was adopted. Although used for packaging certain meat products, this type of can is not generally produced by can manufacturers. To manufacture the can in quantities would necessitate expensive revision of can dies.

Packaging difficulties of the B Unit of the Type C ration were discovered in experiments with the flat can.

Because of these reasons, the Quartermaster Corps has adopted the standard round which has proven very successful.

For the Quartermaster General:

R. A. OSMUN,
Colonel, Q.M.C.,
Assistant.

Washington, D. C.

Cavalry and Artillery Saddles

EDITOR, THE CAVALRY JOURNAL:

Replying to your letter of the 6th: There is no difference between the basic McClellan Saddle for either the Cavalry or the Artillery. There are, however, several differences in the fittings.

Considering the Cavalry McClellan as standard, this saddle is equipped with the new skirts and girths, and with three coat straps, pommel 33" and three coat straps, cantle 45".

For the Artillery: Individual Mount. The McClellan saddle is identical with that issued the Cavalry, with the exception of the coat straps. This saddle has—

Three coat straps, pommel 33"
One coat strap, cantle 45"
and two of 60 inches.

For the Artillery: for use with artillery harness: All McClellans are equipped with D rings on top of pommels and on top-rear of cantles. These D's are used for holding up harness parts.

Further, all "near" saddles are equipped with the new skirts and girths, but the "off" saddles are still of the old type with quarter straps and cinches.

To simplify issue we tried to have these "off" saddles modified but both the Chief of Field Artillery and the Office of the Quartermaster General did not deem it economical to do so.

ALBERT E. PHILLIPS,
Colonel, Q.M. Corps,
Assistant.

Jeffersonville, Ind.

The Guerrilla

EDITOR, THE CAVALRY JOURNAL:

I had to take time out to congratulate you on the excellent series of articles on Guerrilla Warfare. Captain Haig's article was particularly enlightening. I would like to see him write a much larger article on the subject.

If Norway is to be reconquered without a great cost in Allied lives the groundwork must be laid by guerrilla warfare. The country possesses most of the prerequisites for this type of warfare.

Yours truly,

SAM SKURNICK.

48 Lippincott Ave.,
Long Branch, N. J.

Armored Force, Please Note

EDITOR, THE CAVALRY JOURNAL:

The Armored force is packed with Cavalry officers. I'd like to see a *bit* more on Armored Force tactics.

WELLS FAY,
Capt., Cav.

Camp Polk, La.

* * *

The Guidon

EDITOR, THE CAVALRY JOURNAL:

It seems odd to be addressing a letter to the Editor—after being on the receiving end of so many. But, as an old Cavalryman, I was especially interested in the suggestion that would change the colors of the guidon.

I recall that I was surprised when I first saw the red and white of the Troop guidon. I had expected it to be yellow, I suppose. But that was many years ago, and since then I have lost the feeling that it should be anything else.

In most things, I feel that the Cavalry has leaned so heavily on the outward manifestations of tradition as to become, to many, a standard example of reaction, and, in fact, to imperil its own existence. I refer particularly to the lack of foresight and imagination in the last War that was unable to find tactics or weapons impressive enough to hold the Arm together and allowed itself to plunder almost out of existence by more progressive Arms. Although armored cars and tanks were widely used and ideally adopted to the philosophy of Cavalry warfare, it apparently never occurred to any of us that here lay our destiny. We thought too much of the horse as a fetish and not enough as a means of conveyance, mercifully becoming less import to war.

And even today, an Armored Corps is to be found as a separate Arm, when it should naturally become the basis of the modern Cavalry service. Properly used, Armored divisions are simply today's materialization of yesterday's cavalry.

Yet I cannot help remembering the Banquet Room in the Armory where the walls are decorated with framed Guidons that go far back in our nation's history. I would feel, somehow, that in making such a change, we would be sacrificing a fine tradition in a rather futile, desperate effort to make some concession to change. Surely to select new colors for our guidon cannot make any great improvement in our position in contemporary warfare. But to many a veteran of the old Cavalry they can bring a feeling of needless bewilderment and isolation. Here, in the small things, the emblems and banner, tradition can be important.

Let us modernize our thinking, our imagination, our weapons and our organization. Let us keep the old guidons intact, the colors that led many an intrepid, hell-for-leather charge in the past, to be an inspiration for the same spirit in the rolling wheels of the Cavalry of today.

Very truly yours,

J. FRANKLIN WHITMAN, JR.,
Associate Editor, *Our Army*.

11 Park Place,
New York City.

* * *

EDITOR, THE CAVALRY JOURNAL:

Dear Sir:

The question I am about to ask has been discussed many times, but the answer is still unknown by many of us.

Guidons! The artillery have red; the infantry blue; and why does the cavalry have red and white?

I don't mean to stick my neck out too far, as perhaps I should know, but I would like to have an authentic answer for this question when queried by other branches as well as fellow cavalrymen.

HARRY W. POST,
2d Lt., 15th Cavalry (H-Mecz).

Ft. Lewis, Washington.

Editor's Note: A description of the cavalry guidon first appears in army regulations 1835 as Red and White.

In the 1863 reprint of the 1861 regulations a change (no date) was made directing all guidons be made like the *US flag with stars and stripes.*

* * *

"Regulations of the Army of the United States and General Orders in Force. Volume I, 1881, page 284, par. 2792.

GUIDONS FOR CAVALRY

"To be made of silk, with stars and stripes like the national flag; made swallow-tailed. Stars to be gilt, one and one-eighth inches in diameter from point to point.

"The guidon to measure from the lance three feet five inches to the end, and fifteen inches to the fork of swallow tail, and two feet three inches on the lance.

"The fork of the swallow tail to be equidistant from the top and bottom of guidon.

"The letter of the company to be embroidered in yellow silk, or painted on one of the white bars of the flag.

"The lance to be one and one-fourth inches in diameter, and nine feet long, including spear and ferrule.

"To have a water-proof case or cover to protect the guidon when furled."

* * *

A change was made back to the red and white guidon by War Department General Order 65, June 20, 1890.

The quartermaster specification book of 1893 gives the date of the specification March 19, 1890, 3 months before the general order.

Cavalry Commendations

What Others Say - -

About the 1st Cavalry Division

Major General Innis P. Swift, Commanding

The following letter, Headquarters V Army Corps, August 29, 1941, is published for the information of all personnel:

"1. I desire to express to you, the officers and men of your command (1st Cavalry Division), my deep appreciation for the superior manner in which all missions assigned you were accomplished during the period you were under my command.

"2. The training of all echelons of the V Army Corps greatly benefitted from the cheerful manner in which you undertook all tasks, and the thorough coöperation extended by you to the Staff and Units of this Corps.

(Signed) E. L. DALEY,
Major General, U.S.A.
Commanding."

* * *

RADIOGRAM

"Commanding General First Cavalry Division.

"I desire that the following message be brought to the attention of every individual under your command: 'Upon termination of the maneuver today, I extend to the Third Army, the 3d ATF, the 1st Tank Group, and other attached troops, my sincere appreciation of their fine exhibition of physical stamina, aggressiveness, and *esprit de corps*. I am proud of the performance of officers and men, and congratulate them for duty well done.' KRUEGER."

* * *

COMMENDATIONS RECEIVED BY THE 1st CAVALRY DIVISION AT THE SECOND AND THIRD ARMY CRITIQUE

"The movement of the Cavalry Division across the Sabine River on the night of 18-19 was a beautifully done piece of work."

Signed: LT. GEN. KRUEGER.

* * *

"The 1st Cavalry Division performed a notable feat in crossing the Sabine River on night of 18th and 19th of September."

Signed: L. J. MCNAIR,
Lt. Gen., G.H.Q.

* * *

"HEADQUARTERS I ARMORED CORPS

Office of the Commanding General
Camp Polk, Louisiana

September 30, 1941.

SUBJECT: Appreciation of coöperation of 1st Cavalry Division in second GHQ exercise.

TO : Commanding General, 1st Cavalry Division.
(THROUGH: Commanding General, Third Army)

1. I wish to express to you and all the personnel of your fine division my appreciation and that of the entire personnel of the I Armored Corps for the splendid coöperation and assistance received in forcing a crossing of the SABINE RIVER at JOAQUIN on September 28, 1941. The successful crossing of this river and the establishment of an effective bridgehead could not have been accomplished in the prompt and efficient manner that pertained, without your bridge equipment and without the most remarkably efficient crossing of your horse elements over a foot bridge.

* * *

3. I regret that the exercise did not continue through another day because I believe that your division could have demonstrated most conclusively that it could assist Armored units in their movements forward over difficult terrain and could follow up promptly and effectively the attack of these units after it had been launched.

C. L. SCOTT,
Maj. Gen., Commanding."

* * *

"Express my thanks and congratulations to General Swift for that river crossing. He certainly pulled us out of a hole."

MAJOR GENERAL GREELY.

* * *

The following comments were made by members of the Second Division Staff:

"That crossing was in the best tradition of Lee and Custer."

"When the Cavalry crossed the river, they relieved the pressure on us and the enemy found himself in an impossible position."

"The Cavalry Division's crossing the river was the only thing that saved our neck."

* * *

The following radiogram, Hq. Third Army, 28 Sept., 1941, to CG 1st Cav. Div.:

a. "To all troops First Cav. Div., it is with pleasure that I repeat the following telegram from Gen. Marshall, Chief of Staff, United States Army: 'Please see to it that the following message reaches each division, separate brig., or regt., air groups, and principal supply echelons and staffs within six hours after termination of final maneuver phase: "To all commanders and their

officers and noncommissioned officers and to the men in the ranks. The maneuvers just completed have been a great success on the ground, in the air, and for the supply and maintenance services. The zeal and energy, the endurance and the spirit of the troops have been a marvel of excellence. There is much more to learn but the mistakes of the past two weeks will be corrected, the deficiencies in material will be made good. The armored units and the air squadrons are now a part of the military team supported by dive bombers of the navy and marine corps. The supply services have proved that they know their business. This new citizen army is rapidly on its way to becoming a powerful machine with all its parts in close coöperation. To all of you and especially to those older men soon to be released from active service my thanks and those of the entire War Department for having done a grand job. GENERAL MARSHALL." ' (signed) KRUEGER."

b. "Upon successful completion of the most arduous maneuver task given our army I desire to express to every member of this command my deepest appreciation and thanks. Well done, Third Army. (signed) KRUEGER."

* * *

"CHAMBER OF COMMERCE
Bryan, Texas

October 6, 1941

General I. P. Swift
Fort Bliss, Texas.

Dear General Swift:

I am writing to say, on behalf of the citizens of Bryan and Brazos County, that we greatly appreciate the privilege we recently had of having your command with us for one night. Our only regret is that we could not do more in the way of entertaining your men and making them more comfortable in their surroundings.

I would like to say that our citizens are unanimous in their praise for the fine conduct of your men while here. I have not heard a single derogatory remark but on the contrary have heard praise of the men and officers on every side.

Again assuring you that it was a great pleasure to have you and your command with us and hoping that we shall have the pleasure of having you with us again, should the occasion ever arise, and with regards and all good wishes to your staff, I am

Yours sincerely,
(signed) D. L. WILSON, Secretary-Manager."

* * *

About the 2d Cavalry Division

Telegram from Second Army Commander

Congratulations on your *fine* work in the maneuvers. You and the Fourth Cavalry did a swell job.

BEN LEAR,
Lt. Gen., U.S.A.,
Commanding.

HEADQUARTERS I ARMORED CORPS
Office of the Commanding General
Pleasant Hill, La.

Sept. 21, 1941.

SUBJECT: Commendation.
TO : Major General John Millikin, Commanding 2d Cavalry Division.

1. I wish to express to you, your officers and enlisted men, my appreciation and that of the entire personnel of the I Armored Corps, for the most effective coöperation rendered to us by your division in the first G.H.Q. exercise.

2. You and your division not only handled all missions assigned to it exceedingly well, but also took care of many pressing situations that could not be foreseen.

3. It is hard to single out any particular unit in a command so good as yours for special commendation. However, I do think the performance of your 4th Brigade (Colored) in the action which occurred at ZWOLLE on the afternoon of Sept. 19, 1941, deserves special mention. This place was the focal point of attack of various hostile elements including cavalry, motorized infantry, and air. The enthusiasm, the interest, and the actions of your colored brigade was up to the standard expected of our best cavalry traditions.

4. Good luck and more power to you.

C. L. SCOTT,
Maj. Gen., U.S.A.
Commanding.

* * *

I wish to express my gratitude to all officers and enlisted men of the Third Cavalry Brigade Combat Team for services rendered during the recent maneuvers. The successful execution of all tactical missions assigned you was made possible by the highest degree of coöperation and distinguished by a cheerful readiness to accept the hardships imposed and by an unusually high spirit and pride in your organization. Great credit is due to all officers and enlisted men of both the combat and service elements.

TERRY ALLEN,
Brig. Gen., U.S.A.,
Commanding, 3d Cav. Brig.

* * *

About the 113th Cavalry (HM)

HEADQUARTERS VIII ARMY CORPS
Office of the Corps Commander
Brownwood, Texas

October 30, 1941.

SUBJECT: Commendation.
TO : Colonel Maxwell A. O'Brien, 113th Cavalry (HM), Camp Bowie, Texas.

1. I take great pleasure in commending you, and through you, all ranks of your splendid regiment, for their superior performance of duty during the recent grand maneuvers in Louisiana.

2. The numerous missions assigned to your regiment were habitually executed with a high degree of efficiency and promptness. In many situations patrols displayed great ingenuity in accomplishing these missions. The prompt and accurate information which came to my Headquarters from your regiment was of great assistance in planning and directing the operations of the VIII Army Corps.

3. The highly efficient manner in which the 113th Cavalry performed its duties is worthy of emulation by all units of this command.

4. This letter will be read to all troops of your regiment.

GEO. V. STRONG,
Major General, U.S. Army,
Commanding

* * *

The Press

1. The following editorial from the September 26th issue of the *Evening Star,* Washington, D. C., is quoted:

"After five days of intensive fighting in the Louisiana war games, it seems possible to draw some rather clear-cut lessons from the results achieved.

"One is that the function of horse cavalry in modern warfare—at least on swampy, wooded terrain such as that over which the maneuvers are being staged—is by no means exhausted. Another is that in territory where tanks cannot maneuver extensively except by keeping to established roads, the engineers and even the infantry must play vital rôles in successful defense operations.

"Some news dispatches emanating from the headquarters of Lieutenant General Ben Lear's Second, or "Red" Army, give the distinct impression that the utter failure of Thursday's large-scale attack by the armored units of the Red Army—the first of the maneuvers—was attributable to the aerial superiority of the Blues. That is decidedly erroneous.

"The Blues enjoyed superiority in the air, it is true, although their margin was not great—400 planes to 300 for the Reds. And this advantage was exploited to the fullest extent, with dive bombers blasting mechanized concentrations and harassing communication lines while observation planes kept Blue headquarters well informed of the enemy's movement. But, in final analysis, the planes neither stopped the attack nor drove back the attackers. That was the work of the infantry, the engineers, and the cavalry.

"General Lear had made careful preparations for his attack, and it was well executed. But it soon bogged down in the face of bridges blown out by Blue engineers, 37 and 75 millimeter guns rushed to strategic positions behind the Blue lines by antitank units to kill off tanks that succeeded in breaking through, and by the efficient work of riflemen and machine gunners who melted away into the woods to let the tanks go roaring by and then reformed their lines in time to prevent any Red infantry units from jamming through the breach made by the armored vehicles.

"It was at this stage of the battle that the Blues brought the First Cavalry Division, which had been stationed far out on the left flank, into play. This outfit, preponderantly horse-mounted and horse-drawn, proved capable of crossing terrain that had defied the best efforts of the tanks, and succeeded in getting in behind the Red lines and capturing most of the reserves of gasoline for the attacking armored units. This forced a Red withdrawal to the northeast to new sources of gasoline, and this withdrawal was quickly turned into a desperate but unsuccessful effort to stem a well coördinated drive by a Blue infantry division upon the important town of Natchitoches, headquarters of General Lear, who was compelled to make a hasty withdrawal to avoid capture.

"This initial Blue success by no means detracts from the great present-day importance of planes and tanks. The latter, had they been operating under more favorable geographical conditions, undoubtedly would have given a much better account of themselves. But the triumph for the Blues does serve to emphasize the importance of not overlooking the older service arms in planning for the future, and it is a safe assumption that this fact has not been lost upon the Army's high command."

* * *

The following editorial from the September 27th issue of the *World,* Tulsa, Oklahoma, is quoted:

THE CAVALRY

"It is often asserted that the cavalry tradition of the United States dies hard. The truth is that cavalry is not a tradition and it isn't going to die.

"Out of the big practice 'war' in Arkansas, Louisiana and Texas comes the significant note that the cavalry division was found indispensable. In that swampy country, with many streams and bayous, horses went where tanks could not go; the cavalrymen opened the way for the light motored divisions and the infantry in places where heavy equipment would stall. Cavalry is still relatively fast, despite the overshadowing airplanes and the extensive motorized equipment on the ground. There is almost a full cavalry division in action in the mock warfare, where the practice is of the hardest and where the conditions of real warfare are simulated to a remarkable degree. Cavalry serves also as a capable sort of light artillery.

"This development is important in face of the fact that many army officers have been quoted as saying that 'horse cavalry' is obsolete, and that most civilians have abandoned horses. It has become apparent, through war, work, and sports and for sentimental reasons, that the virile American is not going to be fully separated from his horse. They together conquered the terrain

of most of the United States—in peace and war—and are going to keep it."

* * *

In the September 29th issue of *News Week*, the first phase of the maneuvers of the Second Army versus the Third Army is discussed. In this article, it is indicated that after a strong advance by the Blue Third Army, the Red Second Army counterattacked. The manner in which the Blue Third Army stopped this counterattack is described approximately, as follows:

"To meet the Red counterattack, the Blue Third Army threw in all it had—tanks, tank destroyers, dive bombers—the works. But what really stopped the Red Armored force was, ironically, a Blue horse Cavalry operation. Miles away from the battle of Peason Ridge (across the Sabine River) a horse Cavalry foray that would have delighted a Jeb Stuart or a Phil Sheridan, captured the Red gasoline supply, bogging down the mechanized drive."

In commenting on the employment of horse Cavalry, the following is quoted from the same article:

"For many months to come the Army will study this and other results of the exercises, including the brilliant work done by the horse cavalry in grabbing the panzer forces' fuel—a stroke that must have warmed the heart of many a red-necked cavalryman who has been told over and over again that armored force has made the horse obsolete. The cavalry's feat, plus the more effective use of air power, were the outstanding actions leading up to the Blue victory."

* * *

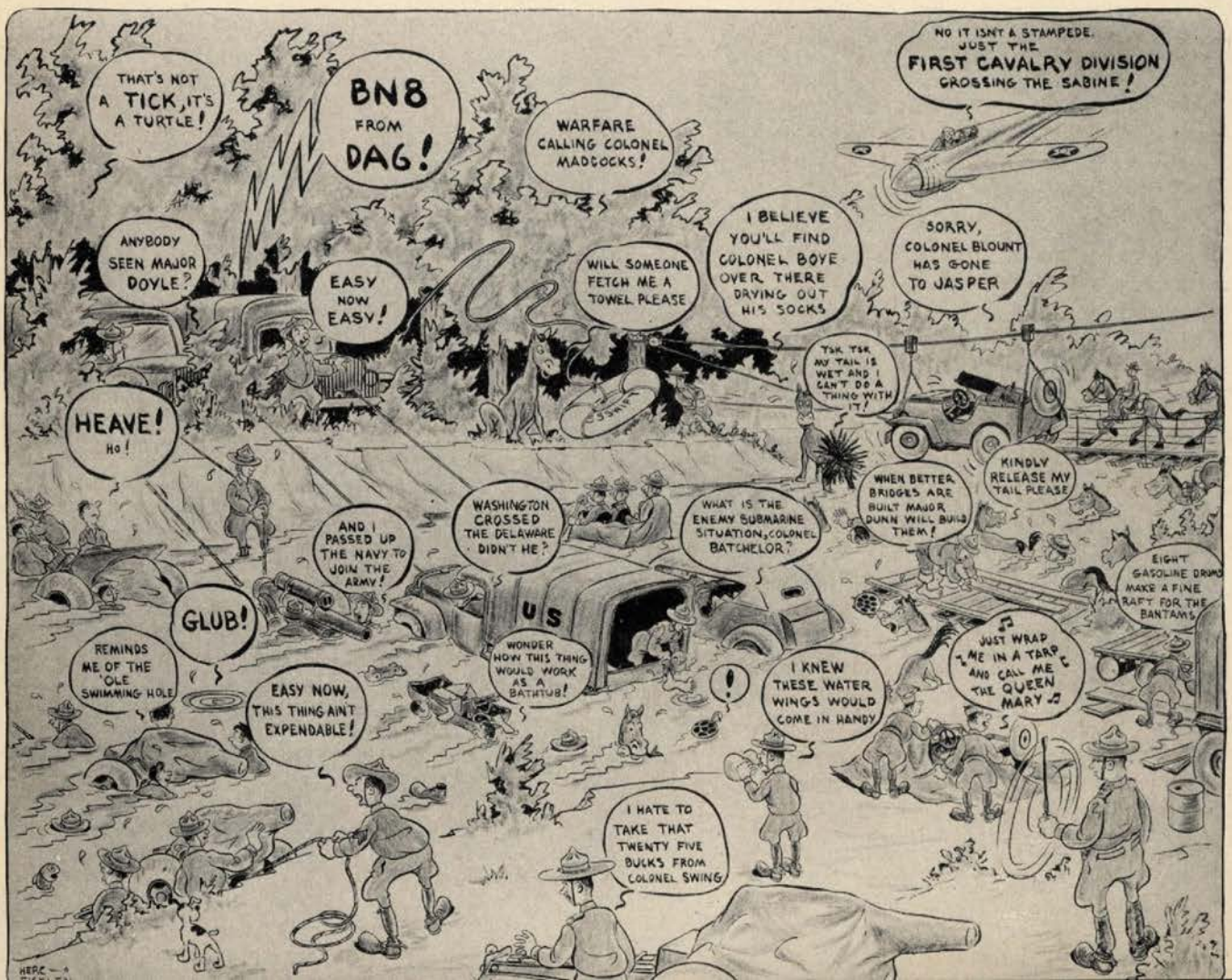
In the September 29th issue of *Time Magazine*, "Final blow came as the Commanding General, Third Army, threw the 1st Cavalry Division in. This division swept out of East Texas with 17,500 men, on horse, motorcycle, and scout car, slashed east and north around the flank of the Red Second Army in a night ride. By that time the Commanding General of the Red Second Army knew the worst. Driven back from two headquarters, he had lost most of his rear and supplies to the 1st Cavalry Division."

* * *

Christian Science Monitor, Boston, October 2, 1941: "The First Cavalry Division forded the Sabine River with its motorized equipment at night. Where water was too deep cables were carried to trees on the far bank and the trucks and scout cars and 'jeeps' literally pulled themselves across on their winches. The feat enabled the Blue Army to catch the Reds by surprise, capture the gasoline supplies of the armored division and put them out of action."

* * *

EDITOR'S NOTE: It is regretted that the additional commendatory news items in this regard are too numerous and voluminous to publish in this limited issue.



113TH CAVALRY (H-MECZ)

In Louisiana Maneuvers

By Colonel Maxwell A. O'Brien, Commanding

THE confidence which the officers and men of the 113th Cavalry had in the successful performance of the horse and mechanized reconnaissance regiment proved to be thoroughly justified by our experience in the Louisiana maneuvers. We have always been enthusiastic about the organization and were convinced that the combination of the horse and mechanized would prove successful. It is true that a large number of changes in both the Table of Basic Allowances and the Table of Organization have been recommended as a result of our experience in the maneuvers but we are well satisfied that the basic plan for the organization is sound.

During the maneuvers we seized every opportunity to experiment with the team of horse and mechanized elements. To this team we added as the situation required, sections of the Antitank and Pioneer and Demolition platoons. When we were so fortunate as to have a company of engineers attached to the regiment, we also added detachments from this company to the team. Had the motorcycle troop been equipped with either bantams or tricycles, we would also have used detachments from this troop with the team at various times. Unfortunately, our motorcycle troop had so little motor equipment that we could not avail ourselves of its full capabilities. We are sure that it has a very important place in this team and upon several occasions we greatly deplored the fact that a detachment from this troop could not be used. In using reconnaissance teams of the horse-mechanized and other attachments, we found that the horse in portée could keep within easy supporting distance of the mechanized unit to which attached. When the situation warranted, the horses were speedily detrucked and succeeded in reducing road blocks and forcing the withdrawal of delaying detachments by unexpected flank attacks. We found that when the time came to infiltrate through the enemy lines the horse, detrucked, could by its own means succeed as well or better than the mechanized troops using it's capabilities. Close contact was always maintained between the horse and mechanized units of the team and assembly points designated both to the rear and to the front and behind the enemy lines for each element so that each knew at all times where the other was operating and might be reached at designated intervals. The horse elements were especially successful in night operations, flooded areas, or marshes and swamps. They succeeded in capturing a large number of valuable records, maps, regimental and corps SOI's and SOP's, and succeeded in taking a large number of prisoners including a number of field officers and regimental commanders. The horse troops were able to maintain contact with the enemy during the hours when the mechanized troops were compelled to halt to await daylight and for the purpose of servicing equipment. As all organizations generally moved during the night, the horse troops were able to report enemy movements and the establishment of new lines almost as soon as this occurred. Even more information could have been obtained from the horse elements had their radio net been larger and better. We found that the SCR-203 sets were extremely difficult to keep in operation, especially when carried in pack and that their range was not sufficient in general, to maintain contact with the Regimental Command Post, and many times with the Squadron Command Post. Moving by portée permitted the employment of the horse troops many miles from the Regimental Command Post and at times from ten to fifteen miles from the Squadron Command Post. These distances require practically the same radio equipment for proper communication within the Squadron and to the Regimental Command Post as that used in the mechanized Squadron. Our conclusion is that the horse squadron should be equipped with many more and better radios.

We believe the horse squadron should have SCR-245 sets in the Squadron Headquarters and the troops. These sets should be constructed to ride either in horse pack or bantams. On several occasions the horse squadron was unable to contact the Regimental Command Post with the SCR-203 sets and the mechanized squadron was compelled to relay such messages through its troops and squadron. To relay messages in this manner requires very close liaison between the units of the horse and mechanized squadron and causes some delay. The necessity for this relay would be done away with if the larger sets were provided for the horse troops. We do not wish to be understood as going on record that the SCR-245 sets are adequate in the mechanized squadron, for they are not. The troops of the mechanized squadron should be equipped with SCR-193 sets and the commander's group cars in Regimental Headquarters should have these sets equipped with both ground and whip aerials. The ground aerial could be speedily set up when greater range is necessary. At times we were so far forward that even with a relay car it was very diffi-

cult to contact Corps Advance Message Center, and contact could not have been made at all without the relay and had not the Corps Message Center been well forward. Our shortage in radio equipment during the maneuvers was critical and necessitated that all sets including the fragile SCR-203 be kept in operation at all times. We had no replacements for the SCR-203 and we did not have sufficient of the SCR-245 sets to even provide one for each of the platoons in the reconnaissance troops. Our communications personnel, did a remarkable job to keep all of this equipment operating twenty-four hours a day throughout the maneuvers. The volume of messages that they handled is indicated by the fact that during the first phase of the Army vs Army exercises, our regimental radio net cleared over 1,600 messages.

We are now satisfied with the size of the tractor trailer and believe it is better than a larger number of small vehicles. We are convinced, however, that the tractor to the portée combination should be more powerful. The present tractor does not have sufficient power to maintain a uniform moderate rate of speed over ordinary hilly ground. It would be very much better if a uniform rate of speed of from twenty-five to thirty miles per hour over all ordinary terrain could be maintained. The present rate on marches of average distances is from twenty to twenty-five miles per hour. Even though the tractors are now underpowered, we were pleasantly surprised by the comparatively easy manner they covered the ground and when used in a team, kept within supporting distance of the mechanized units. They were much easier to camouflage than we had anticipated and were especially difficult to detect when parked close to buildings. It was anticipated that a large number of bridges would be encountered over which the portées could not be moved. Actually we found but few bridges that it was believed might be unsafe for the portées, and at such times the Pioneer and Demolition section which we attached to the portée platoon was prepared to reinforce the bridge or construct a bypass which enabled the portées to proceed with but slight delay. Protection of the portées was always a problem. The three scout cars now assigned to it in the Service Troop are insufficient protection when the squadron acted independently of the mechanized troops or when it accompanied those troops. The portées were generally moved by troop which allowed but one scout car for each section of portées. At least ten additional scout cars should be added to the portée platoon to provide adequate protection for each section, and avoid the necessity of attaching scout cars to the platoon from the mechanized troops. The mechanized troops require all scout cars to cover their zone of reconnaissance, and to detach any cars from the troop seriously impairs its capabilities. When additional scout cars were not attached to the portée platoon for protection it was found necessary to halt the platoon for detrucking a considerable distance short of the point where the portées would otherwise have been able to proceed.

Many times the horse troops were in excellent position to use smoke, antitank mines and demolitions but owing to the lack of a suitable pack were unable to do so. The horse and mechanized team worked particularly well in delaying actions and during one phase of the maneuvers succeeded in delaying a division for approximately one whole day. With the addition of smoke, anti-tank mines, and demolition equipment, the delay could have been made even longer.

The need for a larger Pioneer and Demolition unit was repeatedly brought to our attention. Both the reconnaissance troops and the horse troops should have sections from this platoon attached. The platoon as now organized was not nearly large enough to meet all demands made upon it. At least another platoon should be added, equipped with collapsible boats, and light bridge building material.

The Antitank Platoon is much too small and if a weapons troop is not made a part of the horse and mechanized regiment, at least twenty-four more 37-mm. guns should be added to the armament of the regiment. With the increasing use of tanks and armored vehicle, the six guns in the antitank platoon cannot cover the numerous avenues of approach for them. While we did not have experience with them, we believe the 37-mm. antitank gun mounted on the bantam would be a very good arm for this regiment.

We used the solo motorcycles for all purposes and found that in reconnaissance work they were entirely unsuitable. A few motorcycles for messengers and traffic control are sufficient. Bantams should replace not only the solo motorcycle but the tricycle except the few needed for traffic control and messengers. The substitution of bantams would also increase the fire power of the regiment and permit its speedy employment whereever needed.

The mechanized squadron lived up to all of our expectations, even though it suffered from a critical shortage of radio equipment. It was invariably first to contact the enemy and succeeded not only in getting its own information back to the Regimental Command Post but on many occassions relayed information from the horse troops that were beyond the range of the SCR-203 sets. The scout cars performed very well mechanically, and displayed unexpected ability to overcome mud and water. We believe, however, that they would have even better cross country roadability if mounted on the standard six by six chasis. They should also have higher sides, be equipped with a winch, a bracket for a spare tire, and with brackets for carrying twenty gallons of additional gasoline.

The scout cars being somewhat unwieldly are hard to extricate on narrow roads when necessary to speedily withdraw from a tight situation. If the present organization of the reconnaissance troops is continued, these cars should have dual steering and controls, one front and one rear, thus permitting quick getaway on narrow

roads or when otherwise confined. However, we believe the reconnaissance troops would function better if reorganized with platoons composed of one scout car and six bantams. This would give the platoon much greater "peak and sneak" ability with less chance for serious loss. The use of bantams should also relieve the serious gasoline supply problem with which we were confronted during the maneuvers. Our regiment at that time used 4,000 gallons of gasoline per day. Replenishment of the gasoline supply by the method of exchanging empty ten gallon cans for full ones, we believe, is unsatisfactory. If three 2,500 gallon tanks, tractor drawn, are included in the equipment of the regiment, the gasoline supply problem would be much less acute. The tractor drawn tanks could be moved forward to a distributing point where the gasoline supply could be quickly replenished. There are many other points in favor of the tractor drawn gasoline tanks over the can system.

Another serious obstacle to the uninterrupted performance of both squadrons was the difficulty in supplying the personnel with hot food. At the beginning of the maneuvers there were days when the troops existed upon the "C" ration or other canned foods. This is not satisfactory and as we were unable to obtain Marmite cans, we purchased insulated canvas ice cream can packers. In each one of these packers we carried three covered pails, one for hot coffee, and the other two for the meat, vegetables, bread and butter. These packers kept the food hot for about five hours. While we experienced but little difficulty in getting rations to the troops, difficulty was experienced in moving the hot food to the platoon or section, as this had to be done by the use of scout cars sent back for that purpose. Marmite cans should be a part of this regiment's equipment and transported in modified bantams. The marimite can-bantam combination should relieve the difficulty experienced in getting hot food forward to the platoons and sections.

The supply of ammunition could not be properly tested, owing to the shortage in motor equipment. From what we observed, however, we doubt whether the plan used would work with our type of organization. Ammunition supply for the regiment has always been one of the items that has caused us considerable concern. Again it would seem that bantams are the answer. Moving ammunition and food forward in bantams greatly lessens the hazard and prevents the loss of time.

One or more reconnaissance planes should be a part of the organic equipment of the regiment or if this is not possible, they should be attached for the duration of the engagement. Many times we felt the need for air reconnaissance and if it had been available, our mission could have been accomplished in shorter time and with less likelihood of loss. The O-49 plane or similar type would fit nicely into our plan of operations.

The horse-mechanized regiment is an organization that has great possibilities for expansion to increase its effectiveness. No doubt this will be done in the near future and the personnel of this regiment looks eagerly forward to future activities with the additional equipment and changes that are bound to come. We are well satisfied that the horse and mechanized combination in one regiment will become permanent in the Army Corps.

106th Cavalry, Last Phase, Louisiana Maneuvers

By Lieutenant Colonel Charles R. Johnson, Jr., 106th Cavalry

ON the morning of September 23d, 1941, the 106th Cavalry (H-Mecz) was assembled under cover in the rearward portion of the area occupied by V Corps. V Corps was on the right of the line occupied by the Third Army *(see Map 1)*. And also at noon on the 23d of September a hurricane, moving in from the Gulf, struck at the boundary between Louisiana and Texas, and swept north. The fringe of this storm hit the regiment at Ville Platte.

At 3:00 P orders came through from V Corps directing the 106th Cavalry to move forward under cover of darkness to the limiting line for the next phase of the maneuvers, with the statement that troops might cross the limiting line at noon on the 24th. The corps order specified that the 37th Division was to advance as shown on Map I; that the 32d Division, after relieving elements of the 106th Cavalry at the Alexandria bridgeheads, was to advance as shown on *Map 1,* after having been relieved at the Alexandria bridges by the 34th Division. The mission assigned the 106th Cavalry was to move rapidly forward at noon in the direction of Boyce, seize and hold the exits from the bottleneck northwest of Boyce, and the Boyce and Alexandria bridges, until relieved by the infantry. Thereafter the Cavalry's mission was to be one of normal reconnaissance north of Red River.

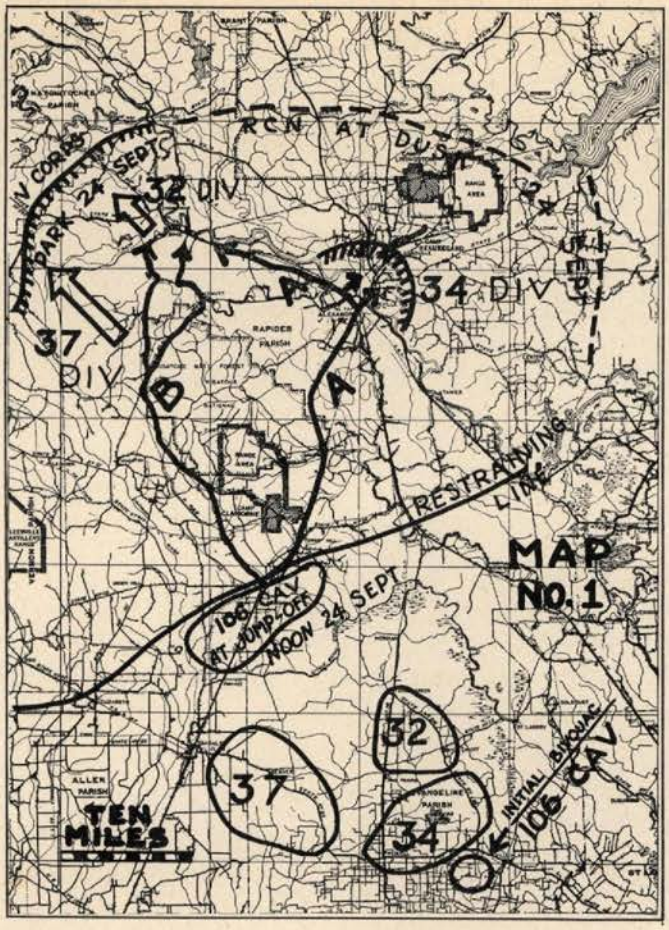
By four o'clock the weather was definitely bad. Standings in places were two inches deep in water, the ceiling was zero, and visibility was a scant quarter of a mile. Hostile aerial observation was impossible, and with the mud becoming stickier and deeper each moment, the regimental commander decided to move without waiting for darkness. The first vehicle rolled at 4:00 P. The motorcycle troop moved out at maximum speed to secure the limiting line within the regimental sector *(see Map 1)*. The Second Squadron (less motorcycle troop) moved out immediately, following the motorcycle troop at thirty-five miles an hour, to take over its assigned sector on the limiting line. The First Squadron, in portée, then moved in two columns to its assigned positions on the line. Regimental headquarters followed Second Squadron, and the service park was jumped to Glenmora at 9:00 P. All units, upon arrival on the restraining line, occupied concealed bivouacs and took over surveillance of the limiting line within their sectors. Troop F (motorcycle troop) was then assembled at Glenmora.

At Ville Platte. Note trooper on top of horse van, (upper right) taking a rain bath.

By daylight the wind had reached gale force. Rain came down in sheets. The regimental command post trailer stood in eight inches of water. Notwithstanding this fact, the majority of the men had spent a dry night. All officers and most of the men had purchased hammocks, which they slung between the trees, stretching the shelter-half above the hammock.

The regiment jumped off at noon on the 24th. The motorcycle troop, traveling on hard roads (Route A) at maximum speed, was able to seize both bridges at Alexandria. It was not able to get possession of the bridge at Boyce. It turned out that this bridge was on the Second Army's restraining line, and the Second Army had destroyed it promptly at noon. The Second Squadron (less the motorcycle troop), moving rapidly by Route B *(see Map 1)*, had the mission of seizing the bottleneck northwest of Boyce. It actually reached McNutt before it was seriously opposed. The First Squadron sent Troop C, in horse vans, close behind the Second Squadron. It might be added that these horsemen proved to be exceedingly valuable to the Second Squadron in clearing the area between McNutt and Zimmerman of Red delaying detachments. The 32d Division was very complimentary in its remarks about this troop. Troops A and B, following the motorcycle troop down Route A, were assigned the mission of forming bridgeheads at both Alexandria bridges. The horse vans of this detachment started out in the exhausts of the motorcycles and traveled at thirty-five miles an hour.

The first message to come in was from Troop F (motorcycle troop), signed at 1:01 P, stating that the Boyce bridge had been blown, but that Troop F had possession of the Alexandria bridges and that reconnais-



sance parties from the horse troops had already arrived at those bridges. The regimental commander, leaving his command post set up at Glenmora, followed Troop F to the Alexandria bridges. As the horse troops detrucked and took over the bridgeheads, elements of the 32d Division arrived at the Pineville bridge and infantry of the 34th Division was starting to arrive at the bridge northwest of Alexandria. The regimental commander accordingly pushed forward his motorcycle troop northeast of the river, directing it on Tioga, and moved his two horse troops, detrucked on Pollock and Bentley. Meanwhile, the Second Squadron (less Troop F), supported by Troop C, pushed back Red delaying detachments through the bottleneck northwest of Boyce. Concurrently, infantry elements of the 32d Division were working forward agressively from Alexandria, through Boyce, and upon their arrival in the Boyce bottleneck the regimental commander relieved the Second Squadron (less Troop F) and Troop C by radio, moving the Second Squadron north and west of Tioga, and directing Troop C, in vans, to rejoin its squadron near Pollock. At the same time he ordered forward the vans of Troops A and B, which had been left in Alexandria when those troops detrucked. Troop F was now given the mission of surveillance of the Red River from the northeast bank between Colfax and Alexandria, to prevent, by fire, a reported Red movement down the river in assault boats, directed on the Alexandria bridges. This naval operation never materialized. Well before dark the 34th Division had taken over the Alexandria bridgehead from the 32d Division, which then fought its way northwest along the south bank of the Red River to the vicinity of Lena. The final positions at dusk of all elements of the V Army Corps are shown on Map 1. The regimental command post and service park were moved forward to Alexandria prior to dark.

Throughout the 25th of September the regiment performed reconnaissance to the line: Clarence–Winnfield–Georgetown, sending a detachment of the Second Squadron, on Third Army orders, to observe the area between Catahoula Lake and the Red River. There was no enemy activity in the latter area. A considerable number of prisoners, however, was taken from the 11th Infantry in the vicinity of Winnfield and the area: Winnfield–Williana–Verda–Luella was found to be strongly covered by Red road blacks and demolitions. The horse squadron was held, prepared for immediate forward displacement, in the area: Dry Prong–Pollock–Bentley. The regimental command post and service park were displaced early on the morning of the 25th to north of Tioga.

On the 26th of September one platoon of Troop E, finding the bridge at Clarence demolished, located a ferry boat, which apparently had been overlooked by the Reds. The men counted their pennies and scraped together enough money to satisfy the ferry boat's captain, and the platoon crossed the Red River into Natchitoches, where it was able to assist the advance of the 32d Division. By dark on the 26th, elements of the V Corps were in the final positions shown on Map 2.

Early on the morning of the 27th the regimental command post moved to Montgomery, but the service park was held at Tioga. Mechanized reconnaissance was pushed forward as far as the line: Coushatta–Jonesboro–Monroe, and small detachments of motorcycles cut U.S. Highway between Monroe and Vicksburg in order to gain information of any wide sweep by the Red Armored Division. One of these detachments actually reached the Mississippi bridge at Vicksburg, some eighty miles east of Monroe. These detachments checked in over commercial telephone lines. The horse squadron was ordered forward in vans to the vicinity of Jonesboro, with a view to cutting the highway between Shreveport and Monroe. By this time we foresaw a Second Army withdrawal east or northeast through Shreveport. The Second Squadron was then turned loose and told that the sky was the limit. The final positions at dark on the 27th are shown on Map 3.

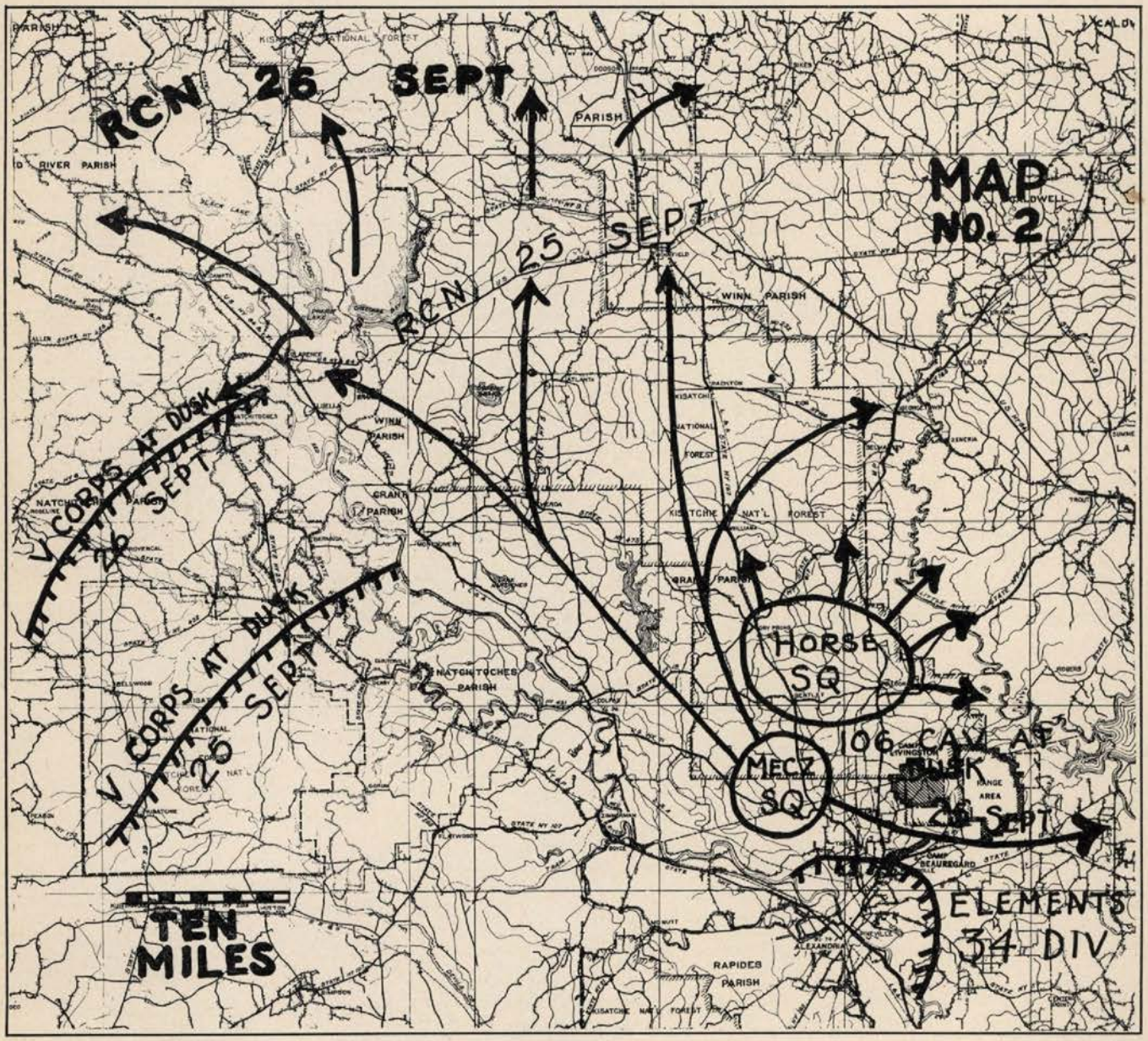
Early on the 28th, mechanized elements from the Second Squadron had cut Highway 80, running from Shreveport to Vicksburg. The Second Squadron had considerable fighting around Coushatta. Among other things it picked up several infantry dumps of blanket rolls, indicating a precipitate Red retirement. I believed that the Reds thought that the entire 34th Division

was advancing behind us. When the Second Squadron captured Coushatta it bagged a surgical hospital and found a very hastily abandoned signal corps installation from which switchboards had been yanked. Upwards of sixty lines, each one properly tagged, were still there. One officer counted fifty or more large reels of wire that had been abandoned. Troop E captured a Second Army gasoline and ration dump at Ruston at about noon, and continued to operate west toward Shreveport and northwest to cut the highway between Shreveport and Eldorado. At Arcadia it captured a Red landing field with fifty planes on the ground. Then the problem ended, at 4:45 P. At this time the regimental command post was in Coushatta, and horse elements were working their way north from Jonesville into a position astride Highway 80 between Monroe and Mindon. As the problem ended the order was going out to the horse squadron to swing west on Mindon. Two hours later the Third Army sent the following teletyped message to V Corps:

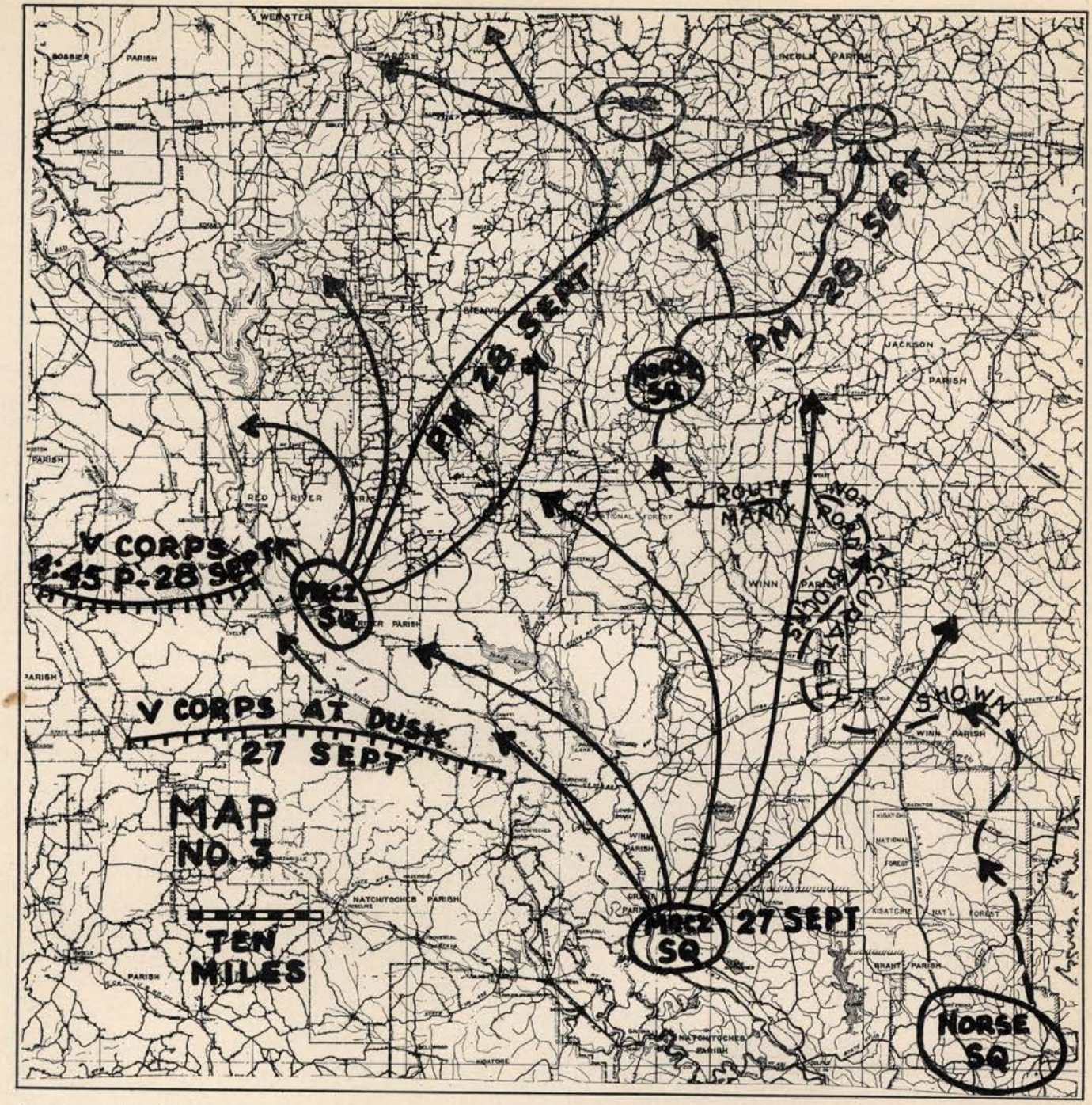
TO: COMMANDING GENERAL FIFTH ARMY CORPS
WELL DONE 106TH CAVALRY
(signed) KRUEGER

The Human Side

At best, a move by move description of any operation is boring. As a relief, let me dwell upon some of the many human touches. First, there is the motorcyclist who was on duty with our liaison officer at Corps. In one operation he covered fifteen hundred miles. His hands were bandaged. The grips had worn the skin from his palms. The weather had blistered the skin on the back of his hands. When he was turned loose to return to the regimental command post he ran his machine into a ditch in the darkness, and broke his shoulder. I don't know how he did it, but he got that machine up with one arm, put it on the road, and cranked it, and rode it in with one hand. Again, an of-



Map 2.



ficer's patrol of horse troopers very early one morning came upon a couple of shelter tents in hostile territory. Several men in their underclothes were asleep in them, and the butts of guns showed from under the blankets. Khaki slacks were lying about. The patrol told them to get up and get the hell out of there; that they were prisoners. The men got up, rubbing their eyes and muttering, and started to put on their clothes. Everything looked fine until the prisoners started pulling on loud lumber jack shirts. It turned out that they were civilians out hunting.

Probably the prize story of the maneuver deals with a rowboat of Red soldiers coming down the Red River. A party from A Troop opened up on this boat by surprise at close range with rifles and light machineguns. The Red sergeant cocked a snook. A Troop's umpire got mad and told the boat to come ashore. The sergeant in the boat told the umpire exactly what he could do with his arm band. Another of the Red soldiers said, "If you want us you can come get us!" The umpire was from Kentucky, and he didn't like that remark. He removed his wristwatch and dived into the river after the boat. This only amused the Reds all the more, and they were getting away from the umpire fast when he decided to fake a drowning. The Reds got scared and rescued him; and then he brought them into camp. Incidentally, he walked them eight miles.

Then, too, we have another touch. There is the story of the lone motorcyclist in an earlier maneuver who ferried his machine across the Red River in a rowboat.

Mechanized squadron action.

Two days after that particular phase of the maneuver ended he still kept telephoning direct to corps headquarters his reports of Red and Blue movements, and they were accurate reports. For two days he had been observing a separate maneuver between elements of the Fourth Corps, and didn't know it.

The regimental commander desires to pay a glowing tribute to his motorcyclists. The regiment entered the maneuver with very few of its radio sets. The most we ever had at one time was nine. There were times in the earlier maneuvers when our reconnaissance, measured from tip to tip, covered a front of two hundred miles. Without our motorcyclists we would have accomplished very little. They were cheerful, they were willing, and they were daring to the point of recklessness. Above all, they were resourceful. I cannot yet understand how it is that the average private, out by himself, could go through three or four commercial exchanges to get a call in, let us say, for Lufkin, Texas to the corps G-3, at De Ridder. The corps G-3 himself laughingly told me that when one of those calls came in he himself was experiencing difficulty getting a call through to a phone in the town in which the corps command post was then located.

Discussion

These maneuvers, to my mind, confirmed us in our tactical doctrine. This regiment avoids, as much as the situation will permit, the use of scoutcars in any area until the motorcycle troop has indicated that need for scoutcars exists. This prevents premature employment of scout cars. Furthermore, the regiment normally refrains from the use of horses in any area until, by employment of scoutcars, we have proven the necessity for horses in that area. This avoids the premature commitment of our horse elements and saves wear and tear on the animals. It allows them to get the maximum rest and it keeps them held well in hand until the need for their employment arises. We do not favor the formation of arbitrary horse and scoutcar teams. We think that such practice frequently puts horses in parts of the zone where they are not needed and so disperses our horse units that when we need them badly in an area where they count, it is difficult and slow to reassemble them and move them to that area. At first glance it would appear that we did not follow this practice upon our jump-off. As a matter of fact, however, I clearly foresaw that we had a reasonable chance of getting the Alexandria bridges. I wished to continue reconnaissance north of Alexandria as early as possible, and needed greater rifle strength to relieve my scoutcar elements at the bridges. I could also foresee that the cross country ability of the horse would make it of extreme value in forming the bridgehead north of Alexandria. It was for that reason that I committed two troops at the jump-off.

Similarly, we considered it very improbable that time and space factors would allow us to grab the Boyce bridge or the Boyce bottleneck. I felt sure that we would have to fight for those features. Knowing the nature of the close and swampy terrain near Boyce, I figured that horse assistance was absolutely necessary at Boyce. It was for that reason that I committed a horse troop to that area right from the jump-off. Please note, however, that as soon as infantry relieved us at Boyce, it was my first concern to reassemble the horse squadron near Bentley and place its vans at its disposal, throwing forward all mechanized reconnaissance on a wide front to search for a profitable place of employment for the horse elements. One look at Map 1 will give a clear idea of this employment (positions at dusk, 25 September). The point I wish to make is that by employing the horses at the jump-off, I was not, in this case, violating the regimental principle of holding horse elements well in hand. The later operations (September 27th and 28th) clearly justified the assembling of the horse squadron near Bentley.

We have always believed that in the general case, mechanization (unless you are willing to sacrifice it) should never be sent into an area unless there are at least two ways out.

A third element of the regimental doctrine is that all missions should normally be limited and be terminated by an assembly of the troop or squadron with a view to immediate employment on a new mission. The air corps does this very successfully and it has been highly successful with us. For instance, the action on the 24th at Boyce was followed by an immediate local assembly, which, in turn, was followed by a complete assembly of

Horse squadron moves in.

each squadron northeast of the river. Having the squadrons completely in hand, we were able to make a fresh start on the morning of the 25th.

As to communications, we realized that the chief reason of our existence was to furnish corps with prompt information. I believe that information passed from patrol to platoon to troop to squadron to regiment and thence to corps will never be of any value. Men of this regiment, down to privates, were impressed by the idea that the most important thing they could do was to get information to corps. Frequently our patrols communicated directly with the regimental liaison officer at corps, who in turn relayed their information back to the regiment. Each platoon carried a telephone with which to tap commercial lines. Each patrol member was instructed how to contact VICTOR 2 by long distance. *Victor* is the code name for V Army Corps command post. Platoon leaders did not hesitate to send motorcycle messengers direct to corps when that means would save time. We invariably maintained constant communication by phone with our liaison officer at corps. When corps trunks were overloaded, he secured for himself the service of the nearest commercial telephone, and ran a constant relay of motorcycle messengers between this private phone and his sergeant assistant at corps. We were very particular to place especially selected individuals on our liaison detachment at corps. Customarily we had one officer (sometimes two), two sergeants, and three motorcyclists.

We bolstered our horse squadron with four radio equipped scoutcars. Two of these we stole from Service Troop and two were taken from the scoutcar troops. We were generous in alloting motorcycles to the horse squadron. This practice paid major dividends. The radio transmission was continuous, a thing obviously impossible with pack sets. Messenger service was good. Frequently, when we were willing to gamble with our horse vans, the presence of four scoutcars added materially to the safety of the vans and the peace of mind of the squadron commander.

I do not believe that one can say that in a horse-mechanized regiment the impetus of supply is rear to front. We covered such extensive fronts that it was found that the only practical supply solution was for the supply officer to set up predetermined ration, fuel, and forage dumps, and to have all organizations send back to those dumps for their supplies. To have attempted to run things in such manner as to allow the supply officer to push forward supplies to us would have subordinated the tactical to the administrative.

I now thoroughly believe that on a parallel pursuit the horse vans must go wider to the flank. On the 28th our scoutcars were able to work their way forward through road blocks some twenty miles outside the hostile flanks, but the horse vans had a great deal of trouble. I now believe that I should have sent the horse squadron at least fifty miles, possibly more, outside the hostile flank. Had we done this we could have cut Highway 80 before daylight on the 28th, and from that point could have continued to close in on Shreveport in vans for many miles. As it turned out it was necessary to detruck in the vicinity of Jonesboro.

In the phase of the maneuver just discussed there was no close coöperation between the regiment and the air. In the initial stages flying was impossible. In the latter stages the limited number of light planes did not permit them to be assigned to us. On previous maneuvers, however, we have been very successful in the use of the cub type or the 0-49. Each command car in the regiment has the top of its hood distinctively painted in black and yellow. We frequently used our own officers as observers, and as they were familiar with the meanings of these black and yellow markings, coöperation between the air and the ground was almost perfect. It might be thought foolish to give one's self away to the enemy air by distinctive markings, but I have always thought that the enemy will expect you to be active on reconnaissance, and I do not think it matters much whether or not he knows that you are reconnoitering a certain area. On the 28th the fact that he did know we were reconnoitering northeast of the river apparently lead him to believe, erroniously, that the 34th Division was in back of us. I can see no other reason for his precipitate abandoning of his installations in that area.

There is one unique situation that confronts a reconnaissance element. It precedes the advancing columns. When the two forces meet, it either withdraws to a flank, or flanks, or it sideslips and continues through into the hostile backfield. If it withdraws to the flank, or flanks, it ceases to be a reconnaissance element and becomes merely a security force. If, on the other hand, it sifts through into the hostile rear area, it finds itself completely isolated. The lines of contact close in behind it. It cannot get out to either flank, because nowadays the enemy, if he has sense, will block off both flanks of his rear area with a tight line of road blocks, demolitions, etc. If the enemy is still more logical, he will close off his rear with road blocks. If our reconnaissance elements get in to this type of *cul-de-sac*, they continue to function as long as they have supplies, and secure extremely valuable information, but they cannot be supplied. For that reason we have fitted the bulk of our scoutcars with racks, each carrying ten five gallon gasoline cans. Similar racks are being placed on vans, trucks, and reconnaissance cars. The regiment can jump off with five hundred miles of gasoline. Furthermore, we made it a practice to carry two C-Type rations, and supplemented that by four more rations in all vehicles. These rations we made up from our ration surplus. They were purely for emergency use, and consisted of canned corn beef, beans, salmon, and other canned goods that could be eaten uncooked. With five hundred miles of fuel and six day's rations, which is our criterion, any isolated, trapped unit can continue to sneak, peek, and report for almost eight days. The Third Army was most generous to us in this matter.

Employment of 4th Cavalry (H-M)*

DURING the recent maneuvers the regiment was assigned the missions of reconnaissance, counter-reconnaisance, security, forcing a crossing over Ouachita River and establishment of a bridgehead in the face of hostile resistance, harassing action of hostile lines of communication, attack, delaying action, and, in the final hours of the maneuvers, as a reserve for the 2d Cavalry Division. In the execution of the above missions, the "Employment of the 4th Cavalry" was adhered to and proved sound.

In view of its ability to provide elements or combinations thereof in accomplishing assigned missions, the maneuvers clearly indicated that the present organization of the horse and mechanized regiment is, in general, sound, and the regiment is capable of efficiently performing the missions for which it was designed: Namely, reconnaissance, security and limited combat for the infantry corps. This belief is held by the present regimental commander,[1] who has served with the 4th Cavalry through its reorganization on February 1, 1940, and throughout the Louisiana maneuvers of 1940 and 1941; and it is substantiated by the expressed opinion of every experienced officer of this regiment who has taken part in the training of the regiment and witnessed the employment of its component parts during the recent maneuvers.

The Commanding General, 2d Cavalry Division (to which this regiment on occasion was attached), having an expert knowledge of the capabilities and limitations of the horse-mechanized regiment, assigned missions for which the regiment was designed, and when such additional means as motorized artillery or antitank weapons were required, automatically attached them to the regiment. Tanks, aircraft and engineers supported our operations and, in the river crossing, antiaircraft artillery was attached to the regiment. *Not once* was the regiment frittered away by detaching elements to other units for special missions.

In the execution of missions, mechanized and horse elements operated independently or in combinations, with other supporting weapons attached, as dictated by the particular situation. In other words, the regiment, in reality, was employed as a task force, and performed the missions of reconnaissance, security and limited combat assigned it from time to time. By its mechanized strength, animal strength, fire power, communications, antitank, pioneer and demolitions, service elements, and by its mobility, the regiment was able to meet promptly all missions assigned, and with the necessary proportion of required elements.

For the efficient employment of the horse-mechanized regiment, it is necessary for all officers, from the regimental commander down to include platoon leaders, to have a thorough understanding of the employment of each element of the regiment individually and in combination with other elements thereof. This training was not only conducted but repeatedly practiced in field exercises prior to departure of the regiment for the maneuver area, with the result that task forces were quickly formed and dispatched during the maneuvers and were commanded by officers who knew how to employ their commands. The soundness and value of this training were clearly demonstrated in the maneuvers. For example, in the first phase of the GHQ maneuvers, the regiment was given the mission of protecting the right flank of the I Armored Corps and of the Second Army along the general line: Keithville-De Berry-Sabine River to Converse, a distance of eighty miles. The mechanized squadron (less Troop "G") formed the screen, with Troop "G" and the 1st Squadron in regimental reserve.

On two occasions when Blue gained a foothold east of the Sabine River, the Commanding Officer, 2d Squadron, was sent with Troop "G" to reënforce the mechanized detachment under attack and in both cases drove back the enemy and regained control of the river. On another occasion, when two hostile dismounted troops forced a crossing fourteen miles northwest of Logansport and established a bridgehead two miles east of the river, the 1st Squadron (less one troop) in portée, with one motorcycle platoon attached, was sent rapidly to the locality. There it detrucked under cover of darkness and, supported by a motorized battery and one airplane for spotting and observation, attacked at dawn the following morning and by a double envelopment captured the hostile bridgehead force, thus regaining control of the river line. On another occasion, a combination of mechanized and horse elements were sent forty miles to cut hostile communications along U. S. Highway 80 between Ruston and Monroe. In spite of destroyed intervening bridges defended by hostile infantry, the motorcycle and the horse elements crossed the Bayou D'Arbonne by rafts and swimming and not only cut Highway 80 but captured considerable hostile personnel and matériel. Again, on 26 September, the 1st Squadron, with Troop "G" (less one platoon), one battery, 3d Field Artillery and antitank elements from the 2d Cavalry Division attached, successfully delayed the advance of an armored force along Highway 96 between San Augustine and Shelbyville and covered the withdrawal of the 2d Cavalry Division. In addition to the ability of the regiment to form task forces for particular operations, another of its inherent assets is its mobility.

The average rate of march of the regiment was twenty-five miles per hour, with a cruising speed of thirty miles per hour, and no difficulty was experienced in portée elements keeping up with the mechanized elements.

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*Excerpts from official report.

[1]Colonel John B. Coulter, recently appointed a Brigadier General and assigned to the 2d Cavalry Division, Camp Funston, Kansas.

The Fight at Mt. Carmel

By Major Leonard H. Nason*

THE light tank regiments of the armored divisions are supposed to represent the hussar and lancer regiments of the old Napoleonic cavalry divisions, being employed both for close-in reconnaissance and for shock against broken infantry. They are, in addition, intended to perform that other standard cavalry mission, "seizing and holding," until more powerful, but slower, troops can come up and take over the cavalry lines. The following account by an eyewitness and unhappy participant may serve as an example of the latter mission for light tanks in the 1941 Louisiana maneuvers.

The Approach

Executive Officer Light Tank Battalion was leading his three tank companies down Highway 171 in search of the Battalion Commander who had gone ahead to meet Brigade S-3. This was the general prelude to an attack. Executive Officer had no idea of the General Situation, Location of Our Own or Supporting Troops, nor of the Special Situation either Blue or Red. At an unnumbered cross roads below Fisher, the battalion was halted by the Battalion Commander, who was still waiting for Brigade S-3. A tank organization when halted at once takes cover, an operation similar to placing the led horses in a place of security. This Executive Officer proceded to do, hoping he would have time to get the battalion spotted under the trees before it was ordered out again. In this he was disappointed, because Brigade S-3 appeared and issued the following attack order:

"The Brigade Commander desires that you attack along this road." (Pointing).

The Battalion Commander then took off "at the gallop."

Executive Officer ordered the battalion to follow him, ordered three motorcyclist scouts and the battalion adjutant in a bantam out as advance guard and followed the Battalion Commander, down the indicated road.

Executive Officer had found by experience that an officer can do two things in maneuvers, he can play war, or he can play maneuvers, or a judicious mixture of the two. Playing maneuvers, Executive Officer at once decided that he was on his way to a good fight, since many observers' sedans, press cars, and commercial radio and newsreel cars kept passing the column, headed in the same direction. Executive Officer knew of course that any element of surprise so necessary to the operations of either light tanks or cavalry would be lost forever by the arrival of the caravan of observers at the enemy position. He decided to accompany the observers and the newsreel boys in their own dust cloud, and arrive simultaneously with them at the enemy lines. A dirty trick on the enemy, but then—.

At the intersection of the Florien and Mt. Carmel[1] roads, the Battalion Commander was observed in conference with an artillery officer. The Battalion Commander signaled "Continue the advance."

It had been found by experience that after initial contact had been gained, the motorcycle scouts, the bantam, and the half track, as well as any tanks visible, would be ruled out *de facto*. Executive Officer planned to save the half track by hiding behind a sound-truck before the dust settled, a subterfuge that had worked well in the past. But upon arriving at a ridge some three hundred yards from a small town, he found the ridge occupied by confused infantry, retreating machine guns, and perspiring officers. Artillery fire was marked by the conventional red flags with white centers. The observers and sound trucks with their accompanying dust cloud continued on, while the tank battalion halted and took cover in the woods.

From a brigade staff officer to Executive Officer Tank Battalion, verbal: "For Crysake what are you stopping for? That's our own barrage, I asked for it myself! Get going!"

At this point an umpire appeared and all question as to whether a friendly barrage was just as deadly as an enemy barrage or not was removed by the umpire ordering Executive Officer, Staff Officer, and half track a hundred yards to the rear or else be immediately ruled out for the duration of the exercise.

During the period that the barrage lasted, Executive Officer dismounted and found out that the town ahead was called Mt. Carmel, that it was held by at least a battalion of infantry, with many antitank guns in position, and considerably more in reserve. Many artillery officers, recognizable by their clean khaki uniforms, had been observed reconnoitering.

When the barrage stopped, Executive Officer moved forward and took up a position in observation. He then ordered the half track forward. The motorcyclists and bantam with adjutant had disappeared, possible destroyed by the barrage. In any event, gone. The unhappy half track attacked alone, supported by one tank. These were of course ruled out the instant they struck the town.

As soon as the umpires white flags went up, suspending all further action, Executive Officer rejoined Battalion Commander, who had been waiting for him, and Executive Officer was able to say that four yellow flags had gone up when the half track hit the town, indicat-

*66th Armored Regiment.

[1]For orientation, see map, page 51.

1—Maneuvers deadliest weapon in action surrounded by his victims. 2—"Come outta that, you're dead!" Capture of a medium tank by an umpire and a 75-mm. 3—Exhausted half-track preparing to lie down.

ing four seventy-fives in position. The road through Mt. Carmel swung south past a school house with a large open playground about it, defense was massed at the western edge of the town, and the crossroads by which any support must come was blocked by a concentration of umpires' cars, sound trucks, and soft-drink wagons. Infantry in semi-hysteria were standing about the square, the playground and the roads in disorderly groups.

Contact

When the white flag went down, the Battalion Commander led two tank companies through the woods to the south of Mt. Carmel, bringing them out on the Florien Road south of the schoolhouse, taking all the defenses and defenders in the rear, to the horror and surprise of all, including the umpires.

The truce that followed was prolonged, since it took a long time to assess casualties, decide who should retire and to what positions (why should any retire, they were all dead or prisoner). During this truce Mt. Carmel was raided by air, in quite as realistic a visit as one would care to see. Dive bombers zoomed in swarms above the treetops, their flour-bag bombs falling upon the just and the unjust, Red and Blue. One flour sack made a direct hit in the middle of the concentration of neutral cars in front of the schoolhouse, and many were the cries from both Red and Blue that all the road lice be ruled out for the day, but the suggestions were

received with tolerant smiles. Rare is the umpire who will rule out his own transportation!

Umpire truces were generally used by the antitank forces to bring their guns into position, while the tank officers reconnoitered for them and so had them located when the war started again. Pursuant to this mission Executive Office sneaked up the ditch north of Mt. Carmel and lay in the grass observing.

The appearance of two tanks sent to outpost the northern approach to the town indicated the end of the umpire truce. Executive Officer then rejoined the Battalion Commander. It was then about 11:30 AM. Battalion Commander explained the battalion mission. "To hold Mt. Carmel until 3:00 PM." At present, the only supporting troops were one battalion of infantry (armored) already badly chewed by previous encounters and by the friendly barrage west of Mt. Carmel that had landed on the back of their necks. As for the local situation, two tank companies, "G" and "I" held the eastern and southern approaches, directions of the major threat, with "H" Company in reserve to the west. Executive Officer then reported that he had located a force on the northern edge of the town, in the woods, that he had seen an artillery colonel, a lieutenant colonel, and an infantry major observing the ground to their south and west, and that there was undoubtedly a battalion of infantry in support of a considerable force of artillery on the north edge of the town. Two tanks was not sufficient to hold this force should it attack. Executive Officer was allowed to add his own staff tank to his force, which made three, and given authority to pick up any stray tanks he found wandering. This, Executive Officer construed to give him authority to take a platoon from the reserve company, which he did, leading them through the woods to a concealed jump-off position. Meanwhile the two outpost tanks had gathered in a hostile infantry patrol, from which information was received that the force in the woods was a battalion, that it had marched all night and was now asleep, and that it was supporting an antitank regiment in position covering the northern approaches to Mt. Carmel.

At this point a patrol of four friendly half-tracks arrived from the north, and reported the road open. Here then, was a plum of infantry and artillery ready for the plucking. Executive Officer at once asked Battalion Commander for permission to attack, using his seven tanks plus the four half tracks. To insure secrecy, a motorcycle messenger was sent instead of using radio which might be intercepted. No reply was received, instead the balance of the reserve company, "H," appeared through the woods and placed itself at Executive Officer's disposition. This made fifteen tanks, and four half tracks, sufficient force to surprise and destroy both infantry and artillery.

The Attack

Attack order: "Attack straight through these woods due east until you reach a road running north and south. Assemble south on the road and return to Mt. Carmel. Be especially careful of infantry lying down. Take it easy now, we don't want to run over anyone. Let's go!"

The platoon leader of the leading tank platoon had just signalled "Wedge" and crossed the road, when an infantry umpire popped up a white flag and halted the attack. Under the rules of the GHQ Umpire Manual, he explained, tanks must halt when within a hundred yards of ground troops. He would be glad to consult with the tank umpire as to the decision.

During the truce, the Battalion Commander appeared in his tank, announced that he had coördinated an attack in this force in front of both "G" and "I" companies, and expressed astonishment and surprise that Executive Officer should be sitting in the ditch in complete inertia.

Executive Officer explained that he had been ambushed by an umpire, and that the umpires had all retired into the woods to wake everybody up and tell them to get ready for a mechanized attack.

The Battalion Commander reported that he had been promised a medium tank battalion, an additional battalion of infantry, an aerial attack and the intervention of the 27th (friendly) Division, the whole to hit Mt. Carmel at 3:00 PM. It was then 2:20 PM, and it was decided that since the hostile force had now been alerted, that the only solution was to attack it, rather than wait for the arrival of promised friendly support. When the white flags went down, the battalion attacked, directing its effort between the infantry and the supposed antitank guns, to mask the latter's fire. The antitank seventy-fives fired, nevertheless, although they burned not a few infantry tails with wads, to the rage and disgust of the infantry.

Executive Officer, during the umpire truce, continued his reconnaissance mission, this time employing his tank. He had been alarmed by the fact that his four

Charging tank. It would have been vulnerable if the AT gun crew had awaited the tank's final gallop.

borrowed half tracks, bidden by their own radio, had departed without waiting for the umpire's decision. A motorcycle messenger from "G" Company reported that the roads south were swarming with hostile infantry and artillery, the infantry detrucking, and the artillery going into position. "H" Company's bantam, sent north as combat patrol half an hour ago, had not returned, indicating probably capture. A motorcycle, sent to the Command Post of the armored infantry, reported it empty, and no sign of friendly troops anywhere.

Instead of the promised support, a blizzard of enemy infantry arrived from the south and east, accompanied by .37's and seventy-fives, in the face of which the Battalion Commander ordered a withdrawal, a withdrawal so hasty that it left Executive Officer on the far side of the enemy. In the confusion, however, of infantry charging *a la* Pickett, throngs of vociferating umpires, and an air raid by navy bombers employing a new tactic, viz., cutting tops off trees and hurling them on all below, Executive Officer was able to make his escape, and rejoin the retreating battalion.

The tank battalion fell back several miles, where it met the promised support, and bivouacked in woods. But the promised support took off after dark, the light battalion was unmercifully bombed in bivouac, and did not receive permission to withdraw until almost midnight, during which time it lost a company commander to prowling infantry.

The battalion withdrew at midnight to the position from which it had moved in the morning, having lost nineteen tanks, the half track, all the motorcyclists save one, and the battalion bantam and adjutant. On going into its final bivouac it was located by aerial flares and bombed again.

Honors of the day divided equally between the umpires and the air-corps.

Lessons learned:

Armored Infantry is as afraid of losing its vehicles as cavalry is its led horses, and is prone to take off in consequence.

One of an armored force's greatest trumps, the dust and smoke of its own attack, cannot be played in maneuvers against ground troops unless the coöperation of infantry umpires is secured beforehand, a condition that rarely will exist.

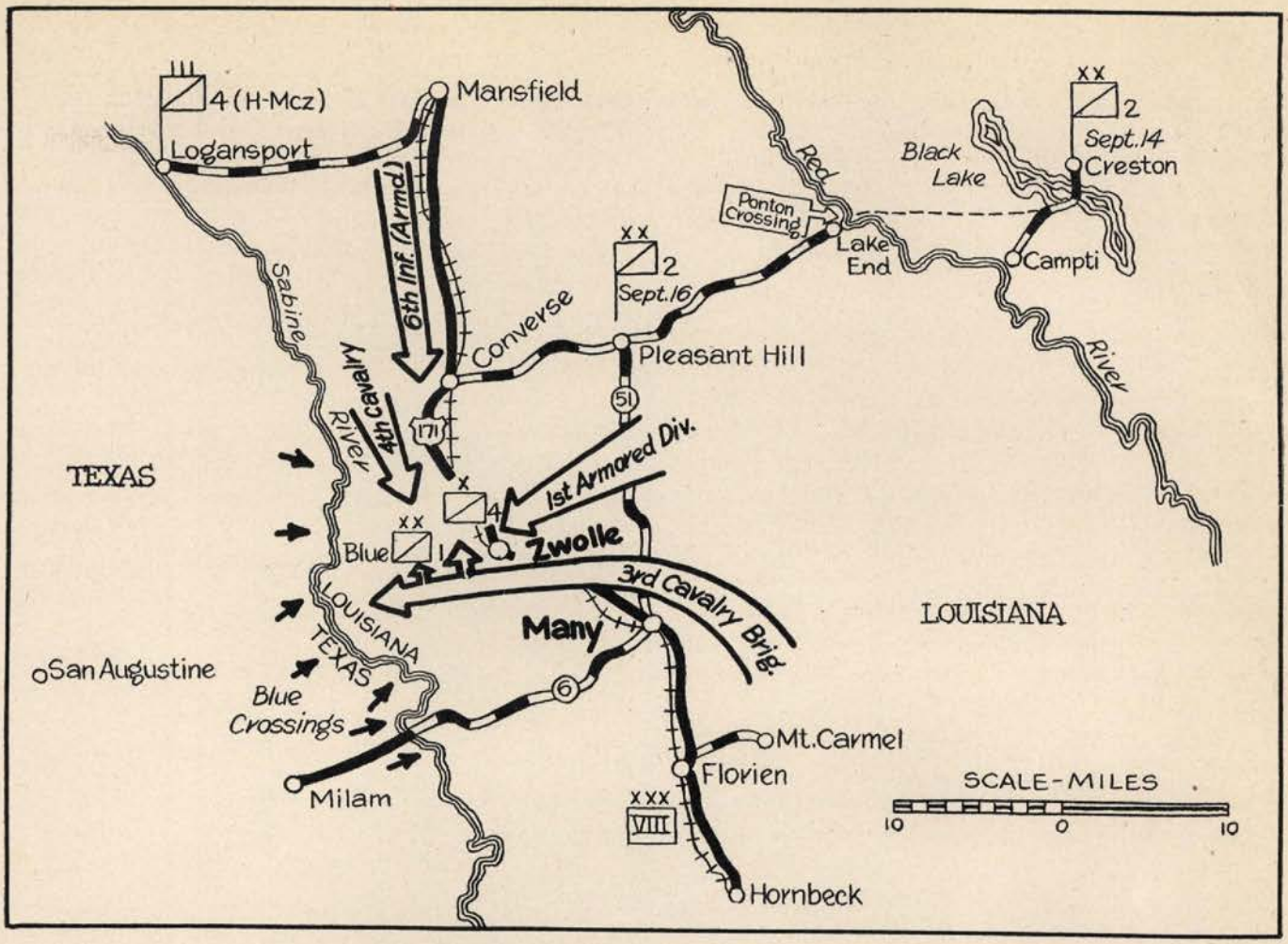
The employment of an armored force without total air superiority will probably mean the destruction of the armored force.

Know the Worst

To know what is best in an organization is, no doubt, most satisfying; yet satisfaction is not the road to efficiency. To know the worst is, I think, more helpful, and to criticise what is bad, so long as criticism is constructive, is surely the road to all progress.—Major General J. F. C. Fuller, *in The Army In My Time.*

No Reason to be Irritated

It is also sometimes true that a commander will find that one of his staff is so able and expert that his advice almost always offers a suitable basis for decision. To some commanders this may be an irritating state of affairs—to have as an assistant a staff officer or noncom who is always right. Other commanders, the true leaders, thank God that they are lucky enough to have such assistance. There need be nothing at all embarrassing in such a situation. An able leader will in fact learn, and learn gladly, from an expert subordinate. Actually, of course, the decision itself is always his, and even if there are few major differences of opinion on his part there will always be occasional minor ones on which the commander's decision will be his own.—Major Edward L. Munson, Jr., *in Leadership For American Army Leaders.*



The Battle of Zwolle

By Major M. H. Lucas, GSC*

ON Sunday, Sept. 14, the 2d Cavalry Division had completed a two days' rest period and were camped in and about Creston, La., awaiting disposition in the GHQ maneuvers. The battle, matching the great Blue Third Army under Lieutenant General Walter Krueger against the Red Second Army of Lieutenant General Ben Lear, was to start at 12:01 o'clock that Monday morning. Scout car radios buzzed continually and men huddled in the cold dew without tentage as the motor and horse elements were ready to move on a moment's notice. A ponton bridge had been thrown across the Red river at Lake End, La., by the 43rd Engineers, and the Division awaited breaks in the endless column of Infantry to cross. Troop "A" of the 92nd Reconnaissance Squadron under Capt. Caesar Fiori had reported no enemy movements near the Red river. At 9:30 AM, of the 15th the 3d Brigade under Brigadier General Terry Allen crossed on the ponton bridge and advanced to a camp on State Highway 180 leading into Pleasant Hill. The 4th Brigade followed them later on the 15th. Motorized reconnaissance elements had been working west of the river throughout the day, and early in the afternoon of the 15th the balance of the Division's mechanization crossed at Coushatta, setting up Division Headquarters north of Pleasant Hill and consolidating the position of the Division.

On the 16th, one of the greatest experiments of the maneuver was initiated. The 2d Cavalry Division, a horse outfit under Major General John Millikin, was attached to and joined the I Armored Corps for a concerted drive to the south. The 1st Armored Division was to move far to the east without regard to the Corps boundary. The 2d Armored Division was to attack to the south. The mission of the 2d Cavalry Division was to move down the boundary between the VII Army Corps and the 2d Armored Division, assisting the 2d

*A C of S, G-2., 2d Cavalry Division.

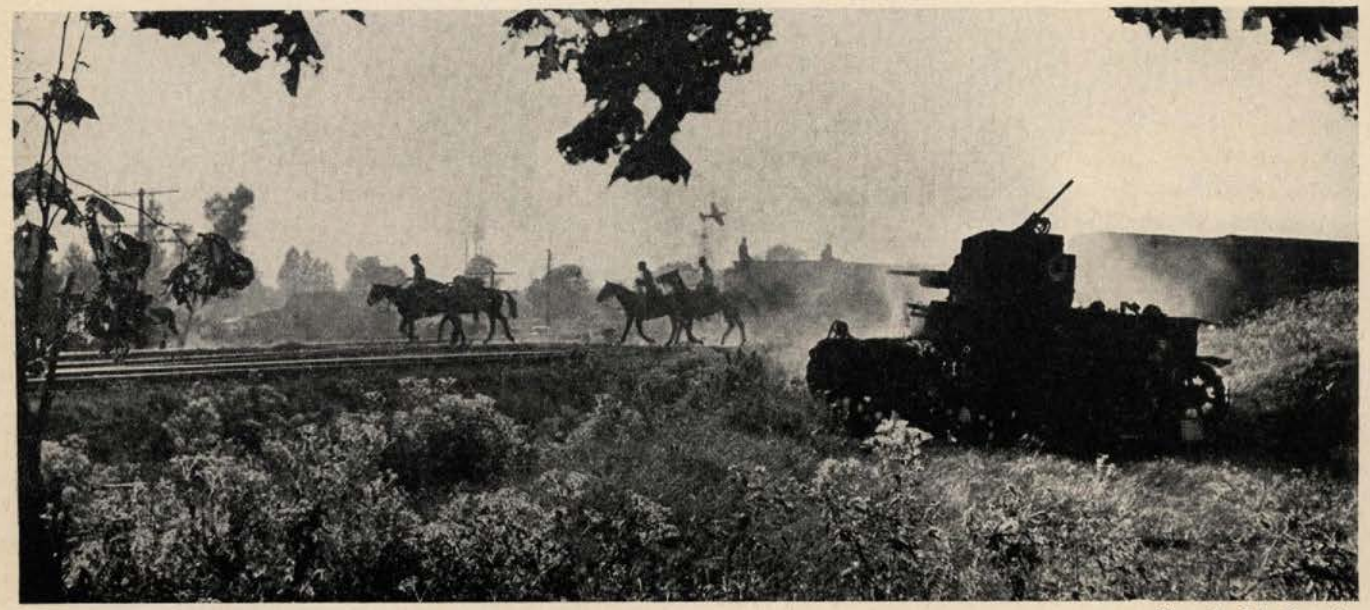
Armored Division in gaining and holding ground against the intense anti-mechanization front presented by the opposing VIII Army Corps (Blue). It was also to protect the flank and rear of the Second Army. The 4th Cavalry, attached to the 2d Cavalry Division, had its CP located at Logansport, and to the horse-mechanized outfit came the job of guarding the Sabine river crossings. Their zone of action extended north and south from Logansport along a front of nearly 100 miles.

Throughout the day of the 16th, aerial observation of the 1st Observation Squadron, based at Shreveport, and ground reconnaissance of the 4th Cavalry revealed increasing concentrations of hostile cavalry (1st Cavalry Division with the 56th Cavalry Brigade attached), around San Augustine, Tex., west of the Sabine river. Further reconnanssance to the south reported the 6th Cavalry (H-Mecz), and the 113th Cavalry (H-Mecz), screening the front of the VIII Army Corps (Blue) in the vicinity of Florien, La. The Division advanced without contact to Many, La. The armored units were drawn up for battle on the 17th, and the busy radios went silent as the units girded themselves for the battle on the morrow.

Anticipating river crossings by the enemy to the west, G-2 of the 2d Cavalry Division asked for aerial photos of every possible Sabine river crossing. These were furnished by the 1st Observation Squadron and air units were dispatched by them for hourly reconnaissance of these points.

On the morning of the 18th, while the rest of the Division remained in mobile reserve, the 3d Brigade, under Brigadier General Terry Allen, was committed to action at Mt. Carmel with the 2d Armored Division attacking also on the 3d Brigade's flanks. Only one brigade was put into action due to the narrow front assigned the Division. A "dog fight" ensued on a line between Mt. Carmel and Florien with the tide of battle surging back and forth between the Blues and Reds. The Red ground reconnaissance elements had been sent out to "work" the area between the Sabine river and U. S. Highway 171 almost to an east-west line extending through Hornbeck, and had found no Blues. This information was sent to the Corps, but for some reason the attack plans were not changed and the Red armored forces ran into nests of anti-tank guns, destroyed bridges and land mines, and the opposing forces were deadlocked. An armistice, therefore, was called by the umpires in that area until 5:30 AM of the 19th.

About 4 PM of the 18th the 2d Cavalry Division received word from several sources that the hostile 1st Cavalry Division with the 56th Cavalry Brigade were crossing the Sabine river on the widest possible front—using every crossing between Converse, La., and a point just south of Highway 6. The area from Converse to the north was held by the 4th Cavalry which resisted all attempted crossings, but the Blues were coming over between Converse and a point about 10 miles below the bridge over Highway 6. Upon receipt of this information the Division, less the 3d Brigade, was moved to the northeast of Many and Troop "A" of the 92nd Reconnaissance Squadron and the Division Engineers, under Major Harry O. Paxson, were rushed to the spot to impede the enemy along Highway 6. Action along the highway stopped the Blues in that area—one squadron of which had the mission of taking the Many, La., airport—and the remainder went into bivouac. However, it could be seen plainly that their main objective was Zwolle, Red railhead, for all the enemy columns were converging towards it. General Millikin thereupon called upon his 4th Brigade—the Colored 9th and 10th Cavalry regiments—to move to Zwolle. The mission he detailed for them was to hold and delay until the 3d Brigade could be brought up, to move out to the north-



—Photo by *Life Magazine*

Combined employment of Cavalry, Armored Force and Aviation, in the Battle of Zwolle.

east only when forced to by superior numbers and to draw out the enemy so as to expose the flank of the 1st Cavalry Division. By forced night march through steaming bayous and dense woods the 4th Brigade arrived at Zwolle at daybreak of the 19th. They held the town against superior numbers until approximately noon of that day. So well did they contest their ground that Major General C. L. Scott of the I Armored Corps praised their "enthusiasm, interest and actions" in a letter to General Millikin. However, superior forces finally prevailed and the 4th Brigade was pushed back to the northeast of Zwolle, but succeeded in drawing out the Blue forces with them as the Division Commander had planned. In the meantime, at 5:30 AM when the umpires' armistice ended in the Mt. Carmel area and the 3rd Brigade was released for further action, it was ordered to hasten to Zwolle and strike the exposed Blue east flank. Meanwhile, units of the Armored Corps had been thrown into action by the Corps Commander and joined the 2d Division units in a coördinated attack by road and across country both from the southwest and northeast in conjunction with the 3d and 4th Brigades, respectively. The new Red forces began to sideslip each other until they had almost completely surrounded the Blues in the Zwolle area, cutting off the numerous enemy columns. Meanwhile, the Reconnaissance troops and the Engineers sent to the Sabine river area earlier had slipped behind the Blue lines—as had elements of the 4th Cavalry from the north—and succeeded in creating a lot of trouble in the enemy's rear lines, including capture of G-1, Headquarters of the enemy Division, seizing maps, codes, signal plans, etc. The termination of that phase of the maneuver was the salvation of the Blue forces at Zwolle.

Cavalry March Training*

FOLLOWING the World War of 1914-1918 almost all military experts had agreed that the age of horse cavalry had passed forever, that there was nothing more left for it to do on the battlefield. It is true, of course, that the speedy development of technical equipment has transformed not only the army but the very nature of combat as well. It must be remembered, however, that horse cavalry has also undergone a change and and that it now differs radically from its predecessor of 1914-1918. Is it possible to find today horse cavalry armed only with the rifle and saber?

While retaining the horse as its basic weapon, cavalry, like other arms, has absorbed the new and different weapons. Experience shows also that this new armament does not hinder the horseman, but, on the contrary, helps him greatly and renders cavalry units more mobile and speedy. Mobility, coupled with excellent armament and training of personnel, is the factor which permits the cavalry of today to perform even the most complicated combat missions.

Strategically, horse cavalry will be employed in mass for decisive attacks upon the enemy flanks, for exploitation of the breakthrough, and for action against the enemy rear. Great operative mobility will be demanded of it. This brings up the questions of the training of horse cavalry personnel, quality of horses, and the intelligent utilization of marching possibilities.

If one studies the actions of German cavalry corps of Marwitz and Richthofen, of Karnakov's cavalry unit in the breakthrough at Swieciany, the French cavalry corps of Sordet, and of the march of Soviet First Cavalry Army from the Northern Caucasus to the Polish Front (1920), it will be found that the distance covered in 24 hours during these operations amounted to 40 to 63 miles. During the operations in Western Ukraine and Western Byelo-Russia (1939), and in Bessarabia and Northern Buckovina (1940), the Red Army's cavalry divisions accomplished 43 to 63 mile marches in 24 hours. Finally, most instructive are the operations of a German cavalry division on the French front in June, 1940. During the period of 16 to 23 June this division covered 225 miles, including time spent in engagements.

These examples concern large units—division and higher—and do not take into consideration the burden of maintaining security. It is known that security units (reconnaissance and march security), consisting usually of up to one-fourth of the main cavalry forces, will as a rule, proceed off the roads. Therefore, if the 24-hour march of a unit is 37 to 40 miles, then the security units will cover a distance 20 to 30% greater, i.e., 45 to 53 miles.

Red Army cavalry manuals agree with this. The normal march of a cavalry unit is determined to be 28 to 34 miles in 24 hours, and the forced march at 47 miles (in individual instances up to 62 miles). For security units these norms are correspondingly raised: the normal march, 37-43 miles; forced march, 60-62 miles (at times 75-81 miles).

The conclusion is clear. The personnel and animals of cavalry units must be trained to execute forced marches of 47 miles.

*"Marshevaya podgotovka konnitsy," by Colonel M. Moiseyev-Cherkasskiy. Translated from the Russian by Lieutenant Joseph Dasher, ORC, from *Krasnaya Zvyezda,* 2 October, 1940.

1st Cavalry Division Tank Pursuit Squadron

By Major Don Carleton, Cavalry

Organization

THE 1st Cavalry Division Tank Pursuit Squadron (provisional) was organized just prior to the Louisiana maneuvers. Because of the reports of the war in Europe, which illustrated the failure of static defense against mechanized attack, this squadron was conceived with the idea of finding armored forces in their motor parks, and in route column, and by making full use of surprise and maneuver, to the flanks and rear, to break up and confuse armored force attacks. Experiments were being conducted by the War Department at this time on an Organization known as the "Tank Destroyer Battalion." The proposed Tables of Organization for this unit indicated that it was to be a strong, heavily armed force capable of meeting and destroying a major mechanized attack. It was to have 75-mm. and 37-mm. guns mounted on heavy vehicles. Included in the organization was a certain percentage of Infantry and Engineers. As we visualized the problem, from the standpoint of the employment of the Cavalry Division, such an Organization appeared too heavy and unwieldy. Experiments were being conducted at Aberdeen with the standard ¼ ton truck mounting the 37-mm. gun and as firing tests seemed satisfactory, this appeared to be a practical solution to our problem. Accordingly, the "Tank Pursuit Squadron" was organized with 37-mm. guns mounted to fire forward on the center of the ¼ ton 4 x 4 truck. Each 37-mm. gun car was accompanied by two ammunition carrier cars; these cars each mounting a .30 caliber machine gun. Because of

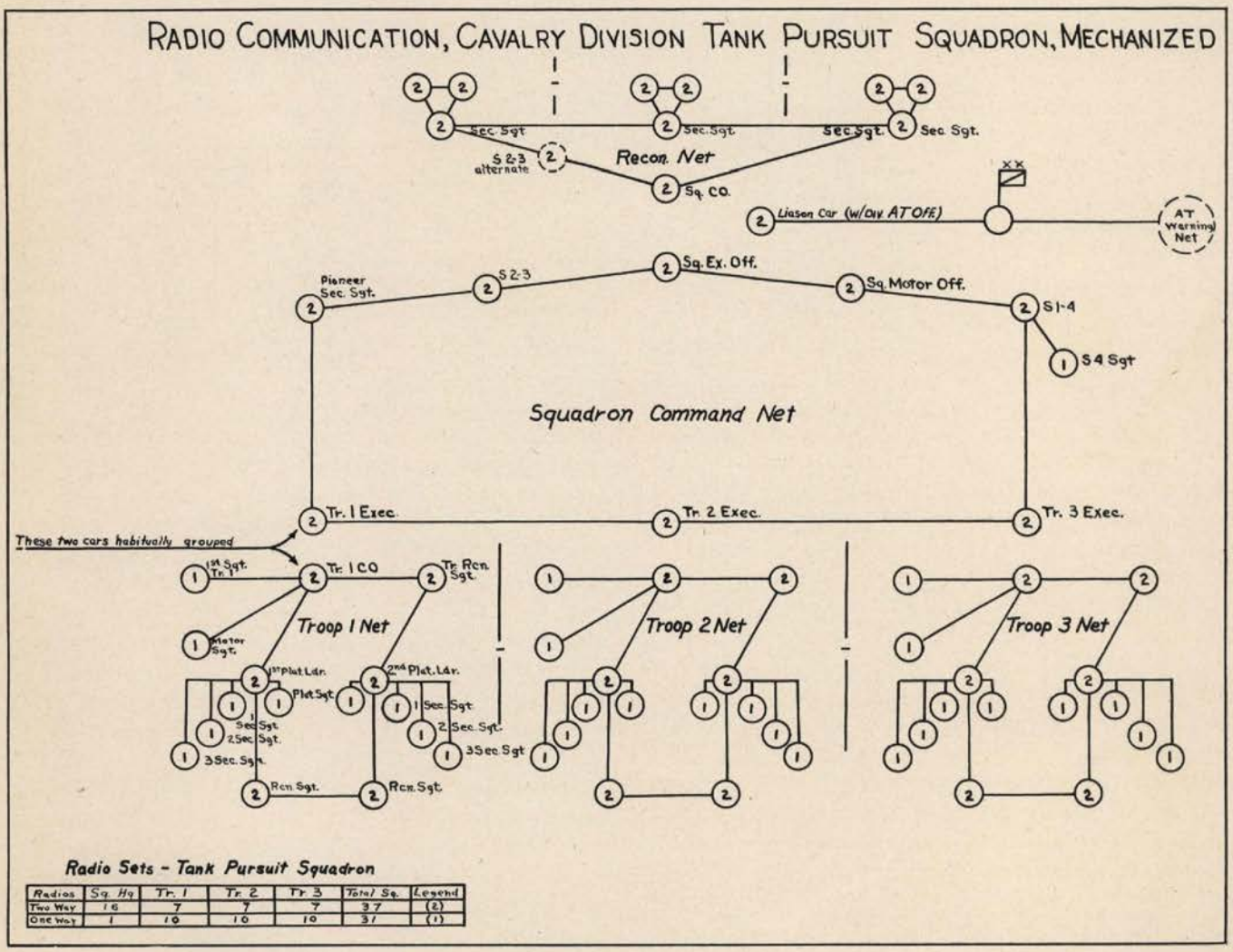
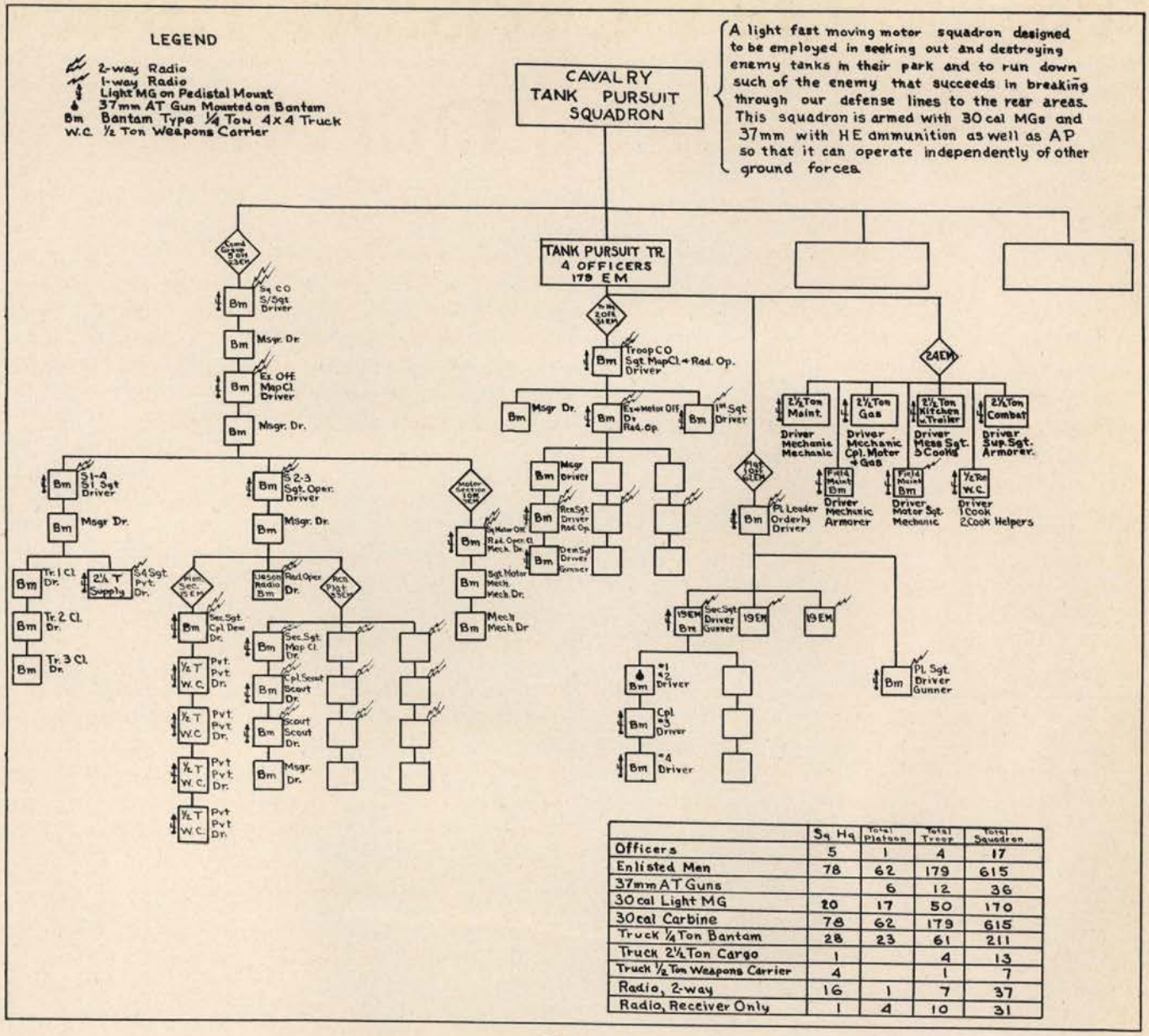


Chart 1



	Sq Hq	Total Platoon	Total Troop	Total Squadron
Officers	5	1	4	17
Enlisted Men	78	62	179	615
37mm AT Guns		6	12	36
30 cal Light MG	20	17	50	170
30 cal Carbine	78	62	179	615
Truck ¼ Ton Bantam	28	23	61	211
Truck 2½ Ton Cargo	1		4	13
Truck ½ Ton Weapons Carrier	4		1	7
Radio, 2-way	16	1	7	37
Radio, Receiver Only	1	4	10	31

Chart 2

the limited time available prior to the start of maneuvers, we had to be content with mounting dummy 37-mm. guns, instead of the real thing. However, these were built as realistic as possible and the tactical training received during maneuvers was equal in every way to what it would have been had we been able to mount the real 37-mm. gun.

To provide local reconnaissance, three detachments were organized as part of the Squadron Headquarters. Each detachment consisted of a Sergeant with a radio control car and three ¼ ton 4 x 4 trucks (bantams) carrying scouts. Normally, these sections operated directly under the squadron commander. However, when Troops were sent on special missions, a reconnaissance detachment was sent with them. These reconnaissance detachments proved invaluable; they were at work night and day throughout each exercise. They reconnoitered roads ahead of the squadron; located blown-out bridges, defiles, routes of march, and were able to give ample warning of the presence of the enemy in each situation.

The pioneer and demolition equipment carried by the squadron consisted of land mines, TNT, necessary tools, and most valuable of all, two bantams, in each 37-mm. gun section, carried a 10 foot section of two by ten inch plank. This equipment enabled each platoon of the squadron to destroy small bridges and establish effective road blocks; the ten inch planks were strong enough to carry the car and its load and enabled the platoons to cross drainage ditches, small streams, and swamps that would have been serious obstacles to other vehicles.

Communication was provided by SCR-245 radio sets, these during maneuvers, were mounted in scout cars. Voice radio for command was used throughout maneuvers, and the normal procedure, of writing and recording messages, was eliminated. Officers issuing or receiving orders did so personally by radio. Operators kept a briefed log of all messages sent and received. A

simple code system, known as the clock code, was used to designate places. Keypoints were designated prior to each maneuver phase and by giving a clock direction, with north as 12:00 o'clock, and the distance in miles, points on the ground were accurately located. With very little practice, this system was found to be very effective, even where there was a shortage of maps. Reconnaissance sections carried a simple list of the keypoints and could be directed from place to place without reference to the map. Enemy information was sent in the clear so as to avoid disclosing the keypoints. One serious handicap experienced during maneuvers was the fact that all our radios were mounted in scout cars and when it was necessary to leave roads in difficult country, radio scout cars had to be left behind. At such times, messenger communication proved efficient, however, it did slow down operations.

Methods of Combat

In order to release the Tank Pursuit Squadron for its aggressive mission, regiments in the division were provided with 37-mm. anti-tank guns, six to each weapons troop, as their organic defense against tanks. This organic defense in regiments enabled the troops of the Tank Pursuit Squadron to seek the flank and rear of an enemy mechanized force, rather than attempt to interpose itself in front of the attack. The platoon is considered the smallest combat element in the squadron. Platoons were directed to their combat positions by voice radio and once committed, would continue the action on their own until recalled, or given a new mission. At times, when radio scout cars had been left behind, platoon commanders were called to the command post and given their mission, or the squadron or troop commander might ride from one scene of action to the other. When contact with the enemy was made platoons were to move into action in a V formation. Gun squads echeloned to both flanks and rear of the base squad as they advanced to fire position. 37-mm. gun crews were taught to open fire at ranges not exceeding 500 yards. Whenever enemy targets came within that range, they were to fire one or two rounds and advance quickly to a new fire position. Platoons were to move by bounds at all times when under enemy fire or observation. The length of each bound was determinated by the next fire position and the degree with which the ground, over which the car had to move, could be seen by the driver. The V formation, with extended distance and intervals, enable gun squads to cover each other with both 37-mm. and machine gun fire, and also prevent their being out flanked during combat. Every effort was to be made to seek combat in woods, or the edge of woods, where these small cars with their camouflage would have every advantage over tanks. As each 37-mm. gun car moved forward to combat, it would be flanked on either side at 40 to 50 yards interval and distance by its ammunition cars, each mounting a machine gun to prevent surprise attack by dismounted troops.

This technique, of advancing by bounds, took considerable practice, however, once learned it rendered gun squads almost invisible during combat. Cars were camouflaged each day with branches. Moving at highest possible speed, these camouflaged cars were only an indistinct blur, and whenever they halted, they would blend into the background. It was planned to carry 20% high explosive ammunition with the 37-mm. gun, this to be used against enemy ground machine gun crews. With this combat formation, and armament, it was believed that the platoon had little fear of scattered Infantry attacks, and by bringing the fire of guns at short range on enemy tanks discovered, they hoped to make a good account of themselves against mechanization.

If there is any value in maneuvers, experiences in the Louisiana maneuvers definitely indicated that our tactical employment was logical and sound. We did not hope to be able to successfully resist a major tank attack where tanks were used in great numbers and in great depth. However, we did hope to be able to harass and delay such an attack, and where the enemy made "piece meal" efforts, or where tanks were used thinly on a wide front, to destroy them. We also hoped, and this proved true in the first phase of the Army maneuvers, to do great damage to enemy trains.

Maneuver Experiences

"Baker from Option, Baker from Option;: enemy tanks forming for attack at affirm dash ten point five dash five. Answer." "Option from Baker, Roger."

"Jig from Baker, Jig from Baker, move at once to Affirm dash ten dash three, gain contact, attack enemy right flank. Report on contact. Answer."

"Baker from Jig, Roger." (That calm quiet voice, our first contact, I wonder if they were all asleep?)

"Mike from Baker, Mike from Baker, move your section by road, edge of trees at Affirm dash nine point eight dash two and reconnoiter route to enemy rear. Answer." (That recon. section should not be far from there now.)

"OK, OK, Baker from Mike OK, on the way."

"George from Baker, 8 Jig George from Baker, you will follow Mike,; seek covered route to enemy right flank and rear. Attack. Do you understand? Answer."

"Baker from George, Roger on your message Sir, but what is Mikes location." (Why don't they listen to all messages.)

"George from Baker, Mike is moving North East from Affirm dash nine point eight dash two. He will reconnoiter in front of you. Answer."

"Baker from George, Roger." (There I have got them started.) Driver go across the field to those woods on that hill, maybe we can see something from there." (Think I'll put Troop One in those woods there to the

southeast where they will be handy if any of those people attempt to go around us.)

"8 Jig Dog, 8 Jig Dog from 8 Jig Baker, move to concealed position, woods at Affirm dash ten point five dash one point five. Reserve. Negat is attached to you, have him reconnoiter to the east. Answer."

"Keep to the high ground, driver. For the love of Mike don't get us stuck now."

"Baker from Dog, Baker from Dog, Roger."

(This is slow going. We ought to be able to see Troop Three from that hill if we could ever get there. Say look at that Artillery? They look half asleep. Maybe they don't know what's up.) "Driver, drive over near that Officer."

"Say Captain, enemy tanks are about two miles to the northeast heading this way."

"OK, OK, Get going driver, I want to see this thing."

"Baker from Jig, Baker* Baker* Baker from Jig, Enemy tanks within range Sir, we have knocked out four of them, no six of them, six of them have stopped and the umpire has taken their colors. I can see more behind. Yes, there are several more behind moving to our right. Answer." (Boy, there is nothing calm about Jig now.)

"Jig from Baker, Jig from Baker, (maybe I don't have to repeat that, he's only a mile away but it does calm you down so that you can think what you want to say) OK, OK, you're doing good, put in the balance of your troop and give 'em Hell."

"Roger, Baker from Jig, Roger."

"Baker from George, Baker, Baker from George, Have located enemy tanks moving to the southwest toward the town. We seem to be on their flank and rear. My gun sections are going forward as fast as they can and will be in range to attack in just a minute. Come in, Answer."

"George from Baker, Roger, Roger, get on their tail and give them the works." (There doesn't seem to be very many of them. If they go into the town Troop One can catch them in the side streets.)

"Baker from George, we have knocked out four of these tanks Sir, and about eight or ten have gone southwest toward the town, we are after them. Answer."

"Roger,–George,–Roger, Dog from Baker, Dog from Baker, Move out at once and catch enemy moving into town. Get in side streets on enemy rear, Answer."

"Baker from Dog, Roger."

"Driver get down to the road and head for Pitkin as fast as you can." (It should be good there as they will not be able to turn around in the narrow streets)

"Baker from Dog, Baker from Dog, Caught tanks in town. They are halted and we came up on their rear. The umpires are making the decision now." (Sure enough there they are, what a break! Twenty-nine tanks in almost that many minutes. There are eight getting away though, I'll send Donnell down that east road and try and cut them off.

Maneuver Experiences No. 2

Crossing of the Sabine 18 September 1941.

"Gentlemen, here is a message from the Army Commander, "The 1st Cavalry Division will cross to the east bank of the river tonight and at daylight tomorrow will attack the enemy in flank and rear." The point of crossing for each of your units is shown on the marked map I have just given you, now get going! That is all."

That classic order was received by all Brigade and separate unit commanders late in the afternoon of the 18 September. As the squadron commander, Tank Pursuit Squadron was speeding northwest, he sent the following radio, "Baker from Negat, Baker from Negat, Prepare to move in twenty minutes, trains remain present location, Jig attached Bradford, tell Berg report to him at once at 84 dash 3 dash 4. The balance of the outfit will report to me at 86 dash 3 dash 6. Bring all truck covers. Do you understand? Come in."

"Negat from Baker, Is this correct? Jig to Bradford at 84 dash 3 dash 4, we move at once to 86 dash 3 dash 6 and bring truck covers. Answer."

"Baker from Negat, That is correct, that is all."

At Mike's Ferry Lieutenant Arnold of the 7th was holding the west bank with a few scout cars and one or two Jeeps. He said that the river was fordable both north and south of the ferry with difficulty because it was shoulder deep and had about a five mile current, but the worst of it was that the enemy held the east bank in considerable force, also that they, the enemy, had the ferry boat on their side. But when he heard that most of the Tank Pursuit Squadron was coming up he was all for forcing a crossing at once. However, any crossing made at this point would obviously be no secret and would no doubt meet with strong delaying forces that would hamper the squadron movements tomorrow. So Arnold was asked to make a great show of crossing till well after dark and then to fade into the night and join the Squadron at the point of crossing of the 2nd Brigade farther south. Moving back to the rendezvous 6 miles east of Shelbyville the Squadron Commander found that his Squadron had arrived and here all heavy vehicles were left in charge of the motor officer, their personnel moved into the messenger Jeeps.

Six miles to the south, through forest as black as death and over a road so bumpy that at times it seemed certain that the cars must be moving across country and not on a road.

"Can you see the road, driver?"

"No Sir."

"Well how do you know you are on one then?"

"I am following that faint streak of sky there."

It was a fact. The driver was looking up, the sky was just a shade lighter than the trees on each side of the road and he was driving at that narrow slit, twenty miles an hour, and behind as far as one could see the little blue pin points of the black-out lights of the Squadron were following.

The 7th and 8th had crossed and the Artillery was just moving up to the river. There was just room for the bantams to ease by the Artillery to the river bank. The truck covers were brought forward, and now as a fine illustration of the value of careful preparation it was found that there were only four of the covers without holes which made them less than useless as boats. No one had ever seen bantams floated in canvas wraps before, but one Sergeant said that he had seen a movie of it, so he was put in charge of the wrapping crew and and the work commenced. One man, who had been brought up on the river and who knew all its tricks, was put to guiding each one across as it was wrapped. Some close calls served to keep the men alert to the job in hand.

Very soon it became evident that the troops were in for an all night job, only nine or ten cars could be crossed in an hour, so it was doubtful whether or not they could be finished by daylight. About this time a voice came from the blackness of the river bank, "Need any help?" It was the Division engineer and behind him came a triple width foot bridge.

From here on the job was a cinch. The foot bridge crawled steadily across the stream, it was a bit too short, but with the help of a couple of assault boats and some planks it was stretched to the far bank just at daylight.

Farther down the river Troop 3 was crossing in two places. They had no engineer foot bridge and had to depend on ingenuity and imagination to devise ways and means. At one point, due to the inventiveness of an Artillery Officer with a flair for doing the impossible, the cable from the winch of a truck was strung over on a tripod of trees cut near at hand and anchored to the far bank. The cars were hung on pullies to this cable and scooted across at the rate of one every three minutes. At another point a staff officer, who had played Huck Finn in his youth, made a raft by lashing gasoline drums to poles and the cars were floated across on these without difficulty.

The only really remarkable thing about the crossing of the Sabine that night, was that at no point along that dark river could be heard the remark, "This is going to be a hell of a job." or "This can't be done." The Division was to attack the towns Noble and Zwolle, ten miles east of the river, early the next morning and it didn't seem to occur to anyone to dwell seriously on the intermediate problem.

Daylight 19 September 41 the Tank Pursuit Squadron (less Troop 3) moving east from the river. Colonel Brown, Commanding 2nd Brigade, had said the Brigade would attack the town of Noble and the Pursuit Squadron would protect the left and north flank. Accordingly the Squadron moved northeast planning to cut the Highway 171 north of Noble and assist the 2nd Brigade. About two miles east of the river what appeared to be a strong enemy outpost was encountered.

One platoon through the woods to the right, one to the left, the advance guard platoon attacks to the front, and under the fire of eighteen 37's firing HE and AP ammunition and 36 machine guns, a detachment of two enemy half tracks, one scout car, several motorcycles, and thirty-five men were declared "hors de combat" in short order. They shouldn't have been bunched that way; they were encountered all in a heap.

The plan was to cut 171 in three places as indicated by the road junctions between Noble and Converse. Troop I encountered an enemy detachment about three miles west of Noble. Lost one gun car there, poked their nose over the hill without looking. It was a good lesson for the survivors however, as they took an enemy scout car and twelve motorcycles a few minutes later.

Highway 171; and it was heavy with traffic. Vehicles of all descriptions moving south, heavy trucks, gasoline tankers, heavy maintenance trucks with their big cranes sticking out the back, scout cars, motorcycles, and what not.

The platoons attack! Smoke screens—heavy firing—lots of confusion—two enemy scout cars dash across a field through a fence and into a ditch. It was a good thing those heavy wreckers were there. Some delay for a decision, and Highway 171 is clear.

Assembled, the Squadron moved north toward Converse, however, the reconnaissance detachment reported that the bridge east of Converse was blown out, otherwise the town was empty.

"Move south, attack town of Noble down 171."

Reversing the column was only a matter of seconds. Individual cars turn about as platoon and Troop Commanders race to their new posts.

Point bantam came racing back. He shouts and gestures to the point commander in passing.

"Enemy truck-train coming this way just around the bend. Twelve trucks no protection."

"OK, lets go." Twelve trucks, five officers, and forty-five men. A Quartermaster Railhead train. Someone overhears something about a railhead at Marshall.

"Skip it. This train is destroyed." More important work to do at Noble.

The Squadron moved on, but is halted at the bridge two miles north of Noble. The bridge is blown out. But wait, the Umpire examines the bridge and finds that only a five foot section has been blown out at one end. Out comes those ten foot planks and on they go.

As the point approached the edge of town it observed an enemy half track and a small force dismounted. They, the enemy, seemed to be so astonished at their presence that they failed to open fire and the point was able to take a very satisfactory fire position. The Squadron (less point) then moved down a dirt trail to the right and attacked the town from the northwest. The 81-mm. Mortar Platoon of the 2nd Brigade, that had attached itself to the Squadron that morning at the river crossing, was put in action to support the attack.

Heavy firing again! Bantams scooting through the woods! Close contact with the enemy! They appeared to be tank crews and others, hastily assembled, with

tommy guns. The machine guns would have made short work of this situation.

The Umpires forced the enemy to withdraw, but the delay had killed all the advantages of surprise.

About four miles to the south a great fleet of friendly attack air planes were seen swooping and diving at something there. Napoleon once said, "March on the sound of guns." Today the Squadron marched toward the swooping attack planes.

It entered Zwolle from the west, the Squadron Commander having gone forward to the 2nd Brigade CP met the Division Anti-Tank Officer.

"What's the score here?"

"Well, the Division has occupied the town. The CP is down there by the railroad station. Troop 3 has gun sections in position covering the approaches from the east and one section on 171 north of town. The town was held by enemy cavalry this morning, but they were driven to the east."

"That sounds great, but my guess is that all hell is going to break out here in about five minutes. We'll leave one platoon to cover this road and be in reserve, the balance of the outfit to the north edge of town prepared to attack any enemy that shows up."

As the bantams were scooting up side streets to position, two enemy tanks had already slipped through the northern defences. One tank rounded a corner and stared stupidly at a 75-mm. Howitzer, in action, in the middle of a busy street intersection. The artillery gunner came to life and pulled the string and the tank was definitely out of action and needed no umpire to tell it so. North of town artillery was in position sighted for point-blank fire, with beautiful open fields before it, anti-tank guns of the regiments were with the artillery increasing the depth of the position. When the platoons of the Tank Pursuit Squadron arrived they took position in the woods on the left from which they could launch a counter attack.

Then, as in answer to the prophesy, all hell did break out.

Cannons booming, men running to position, the cackel of machine gun fire, the roar of tanks everywhere, the smart crack of rifle, smoke clouds over everything, and the unholy scream of diving air planes. Umpires running to and fro waving their little white flags and screaming into the thunder.

Silence: A bugle call. The war was over.

Who won? Who knows? Things like that are not discussed in high places, this was a maneuver and the troops were here to learn—not to win.

But every man in a certain cavalry division knew who won. It was that big fellow who banged the table with his crop and roared, "Get the lead out of your tails and get going."

Conclusions

It may be wrong to draw conclusions from maneuvers where umpires and flags take the place of bullets. However it is only fair to assume, that if a unit is capable of overcoming the terrain in very difficult country, it will be able to repeat the performance in war.

When the squadron was organized, the Commanding General of 1st Cavalry Division had no idea of trying to prove that the ¼ ton truck or Jeep was the ideal mount for the 37-mm. A-T gun, nor did he contend that the 37-mm. is the best anti-tank gun. However the Louisiana maneuvers offered the first opportunity to test the theories of the tactical employment of an anti-tank unit equipped with light self propelled A-T guns.

On this basis the following conclusions were reached:

1. In modern war, where mechanized units are likely to be encountered, such an anti-tank squadron is almost indespensable to a cavalry division.

2. The unit should be light enough and flexible enough, to cover the front and flanks of the horse units even when they move across country.

3. That the most successful anti-tank operations, within the zone of action of the division, were those where we attacked and destroyed enemy tanks at some distance, before they could close with other elements of the division.

4. That it is not practical to equip a cavalry division to withstand a major tank attack. The cavalry division should always be assigned missions that permit enough freedom of action to allow it to make full use of existing natural obstacles and with its antitank weapons to delay the enemy advances long enough to permit heavy tank destroyer battalions to be brought into action.

5. Because it is not practical to have enough A-T squadrons in a division to meet all possible contingencies each regiment and brigade should be equipped with antitank guns for organic defense.

6. That organic tank defense guns with regiments and brigades be normally left with their units, for the defense of that unit, and not sent off on attack missions.

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DEADLINE DATE NEXT ISSUE, JANUARY 5th

According to Plan

By Lieutenant John N. Hutchison, Infantry★

"EVERYTHING is proceeding according to plan." So does Hitler describe the advances of his panzer divisions that, until Russia resisted, moved with clock-like precision in the marches of conquest.

Now officers of the Second Armored Division, commanded by Major General George S. Patton, Jr., are congratulating themselves that their lightning-war unit showed in the most difficult problem of recent Third Army maneuvers that it can operate on schedule against obstacles and circumstances that would have made an impossible situation for any but an armored division.

The division fought its way bodily through the enemy without losing an important unit. It sent three columns over widely spaced and difficult routes. The three columns, actually almost surrounded by enemy, met on the dot at a pre-arranged point 40 miles from their starting place, and crossed the Red River on a ponton bridge exactly on the minute set a full day before.

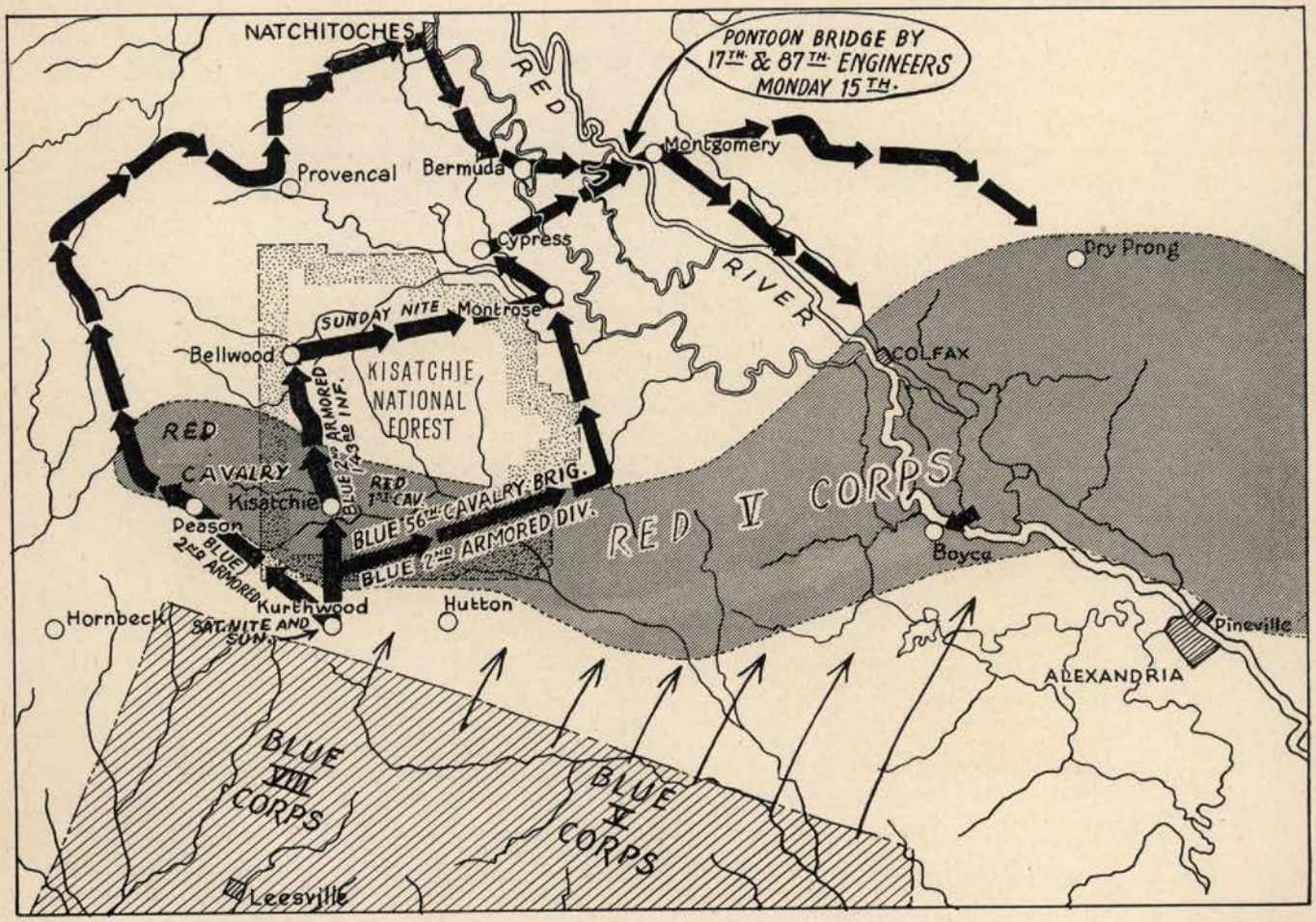
★Assistant Public Relations Officer, 2d Armored Division.

The Second Armored—most-maneuvered armored division in the nation—had never conducted an exercise that "clicked" so perfectly.

The problem began with the Red Fourth Corps crossing the Red River westward in the vicinity of Boyce, La. (see map) and establishing itself strongly. The Blue Fifth and Eighth Corps moved northeastward to press them back in a frontal attack, while the 56th Cavalry Brigade and the Second Armored Division faced the Red First Cavalry Division.

On the first day in which the Second Armored was in the fight, it attacked the cavalry with one column while it drove a second steel spear between the cavalry and the Fourth Corps. On the following morning, Lieutenant General Walter Krueger declared a week-end armistice, with the Second Armored Division then in the neighborhood of Kurthwood and Kisatchie. (See map.)

At sundown Sunday night the battle was resumed. For a time, there was great confusion on both sides, since the sudden suspension of hostilities the day before



had left Reds facing Blues at virtual arm's reach, and neither could draw back far enough to take a swing at the other when the fighting opened again.

But the snarls were finally untangled and the battle took on a saner aspect. The 67th Armored Regiment engaged the First Cavalry Division. While the tanks occupied the horsemen the rest of the Second Armored, in two columns, drove through. Hundreds of tanks, armored cars, trucks, "peeps" and motorcycles growled northward through Kisatchie National Forest, a desolate waste of fire-blackened stumps and twisting sloughs—some of the toughest country in the world for operations of armored vehicles.

All through the night the two columns toiled northward. Each column was a complete army in miniature, with tanks, artillery, armored infantry, and a motorized combat team from the 143d Infantry—a team for which the Second Armored had great respect during the difficult problem.

It was dawn on Monday when the first elements of the division stood on the banks of the Red and looked across the brown current to the east. They had come 40 miles under blackout in a hell of terrible bogs, mud-weltered vehicles, and roads that didn't show on the map.

A lieutenant from the 82nd Reconnaissance Battalion swam the river to investigate the other bank and to awaken the man who operates the ferry to Montgomery. (See map.)

That ferry, and one improvised by the 17th Engineers from two assault boats and some duckboards, took the first vehicles over. Up came more assault boats, then, and the 17th's experimental rubber boats, to carry the 41st Infantry of the Second Armored, and the attached 143rd across. Guns of the 14th Field Artillery Regiment went into position along the bank to protect the crossing.

On the western shore the infantry waited for the assault boats as the British must have waited on the beach of Dunkirk.

The huge 25-ton heavy pontons of the 87th Engineer Battalion, attached to the division, were rumbling in behind their tractors. At noon, the 87th, aided by the 17th, began to throw the great web across the water. The division order said the bridge would be ready at 9 o'clock that night.

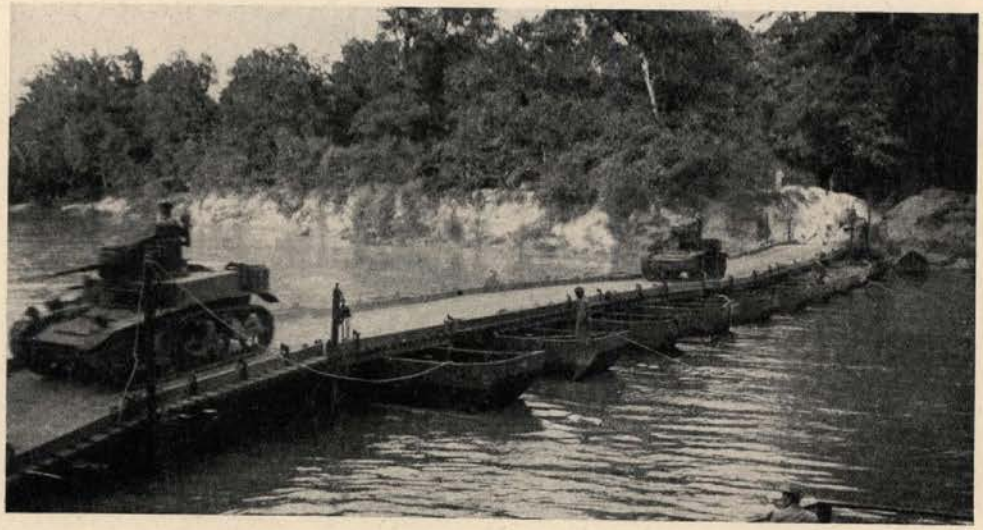
At 8:58 the bridge was done.

At 9:01 the division started rolling across the Red. All night long the great parade went on, with the combat teams swiftly organizing on the east bank to strike southward against the rear installations of the enemy, now trapped astride the Red to the south.

Until noon the next day the long steel column rolled in almost uninterrupted flood across the bridge. By that time the umpires could see that the Reds were in hopeless encirclement, with tanks plunging through rear areas and the Fifth and Eighth Corps pressing relentlessly from the south.

Last combat unit to cross the bridge was the 67th Armored Regiment. It had fought off the Red cavalry for almost two days, keeping it away from the Second Armored flank. And finally the 67th pulled away from the cavalry, rushed north and escaped across the bridge to join the parent force.

Time-table operations, they are called in Europe. In Louisiana, the armored division proved that it can plan as audaciously and split seconds as neatly as the High Command of a foreign army.



Use of the Armored Force

By Lieutenant Martin Philipsborn, Jr.★

WM. L. SHIRER often quotes the remark made to him by an Austrian general after the Battle of France, in 1940. The general remarked that "the German success, taking the historic view, was due to the fact that we were then living in one of those brief periods of history in which offensive weapons had obtained complete mastery over defensive weapons." The remark was only partially true; but had the general added the words "in the hands of the defenders" no exception could have been taken. In any case the brief period to which he referred is now drawing to a close, as the Russian war so surely indicates. From this fact we must learn not to lean too heavily on the German tactics of 1940, the reasons for the success of which have already passed.

In order that the truth of this statement be apparent, it may not be amiss to review the causes of the overwhelming success of the German armored divisions in the campaigns of Flanders and of France. Of the important factors surprise was certainly not the least. The surprise was not surprise of place (General Gamelin had a very good idea of where the main German effort would be made as early as January, 1940), but surprise of method. The German method, for our purposes can be divided into two parts—the "fundamentals of method," which includes the organization of the forces used, their equipment, training and tactics: and "method of employment" which includes a study of the manner in which the forces were used. It is the purpose of this article to show that while German "Fundamentals of Method" will repay study, the lessons learned from the German method of employing these forces in France are now probably outmoded. We can learn much from the German organization of forces, the "Einheit" idea, the splendid coördination of all branches by a superior system of communications. But the tactical successes of the German campaign in France were based on conditions which already no longer exist.

II

That German methods will still succeed against a poorly equipped foe is apparent from the Jugo-Slavian and Greek campaigns. That they are doomed to failure against a well equipped and resolute opponent seems equally apparent from the lack of immediate German success in Russia. It would appear, indeed, that upon one single factor depends the ability of an Armored Force, using German tactics, to go on to a swift and immediately smashing victory. That one factor is *uncontested* superiority in the air. Where such superiority is unattainable, as in Russia and Libya, German blitz tactics have failed immediately to achieve their objective. When, as at present, such near-parity in the air is coupled with the lessons drawn from the German blitz campaigns, it is apparent even to the Germans themselves that the methods of employment of 1940 are no longer possible. Let, then, the Armored Forces of the United States think for themselves.

III

How, then, may the Armored Force be used? In answering this question there are certain definite negative propositions which aid in reaching a conclusion. First of all, it should *not* be used piecemeal, as was done in the Louisiana maneuvers. Its infantry should not be sent here, or a battery of its artillery there and a battalion of its tanks elsewhere. This work can be done better and more quickly by regular line regiments of the arm sought. And more cheaply too. An armored division is essentially a term to play a certain type of game: it should be used for no other. If a few tanks are needed for ancillary purposes, the G.H.Q. tank battalions are always at the disposal of the commanding officer.

Nor should the Armored Force be used defensively for that is not its game either. An example of what should not be done is again found in the Louisiana maneuvers when the First Armored Division was ordered to a tactical attack in order to make an immediate strategic defense. Armored forces, to be employed in a manner most suitable, must be used offensively from the strategic as well as the tactical point of view. Other troops will do the defensive work quite as well.

Last, it is improbable that the Armored Forces can be employed as the Germans employed their Armored Divisions in France for the reasons above stated. Such forces could have been used that way at but one particular moment in history, now (happily) passed.

From the above it would seem that the use to which an armored division can be put is strictly limited. In a sense this is true. Days and months, perhaps even a year, may go by without an army being able to call upon its armored forces for action. And yet, in addition to its usual tasks of exploiting a breakthrough, or, as in France, effecting one, there is still another rôle the tanks should play.

It is perhaps too bad that today so little attention is paid to the military history of the American Civil War, and that so few officers are made to study Henderson's *Life of Stonewall Jackson*. For here is found an ideal use to which a powerful mobile armored division may be put. Let it be remembered that maneuver, as well as attack, can divert from the main theater of operations a great number of men. Maneuver can weaken an opponent, by forcing him to make detachments from his

★13th Armored Regiment (L).

1—Light tank platoon from the 1st Armored Division advancing with observers out and using the woods in the background to dim the tank silhouettes. 2—Tanks in action in Louisiana maneuvers. 3—Plane from the 12th Observation Squadron attached to the 1st Armored Division sweeping over two light tanks of the Division. 4—Medium tank of the 1st Armored Division overcoming a log wall obstacle. 5—1st Armored Division engineers ferrying a scout car over a deep stream. 6—New M-3, 30-ton medium tanks of the 69th Armored Regiment are loaded on the latest type interlocking tread ponton ferry laid down by the 16th Engineer Battalion. The 69th and 16th are units of the First Armored Division from Fort Knox, Ky.

main force, to such an extent that this force itself can be overwhelmed. Jackson saved Richmond by threatening Washington and forcing detachments from McClellan's main body and forcing him to use his reserves for a purpose for which they were never intended. Jackson didn't have to fight: it was all done by maneuver. Here, then, is an ideal rôle for the Armored Force. It can, and should, by sweeping flank movements, comparable only to the cavalry raids of other days, force detachments from the enemy's main body. Strategically the raids must be made where, should the enemy refuse to uncover, the action can be pressed home to the disruption of enemy communications and supply. In the event that the enemy does uncover, the armored raiders should either destroy the detachment if not made in adequate force, or by its superior mobility and its initiating action, rejoin its main body to overwhelm the enemy, minus the strong force necessarily detached. Such immobilization by maneuver is the very essence of sound military science, and a task for which the Armored Forces (now that a frontal attack to effect a breakthrough is no longer practicable), are admirably suited.

IV

It is obvious from the above that any force used in the manner described must be highly mobile. Our Armored Forces are not mobile enough. The impediments carried by an armored division throughout the Louisiana maneuvers would have horrified Napoleon. Post exchanges, and barbers: adding machines, Ditto machines, multigraph machines: wall tents, pyramidal tents, large fly tents: bedding rolls, sleeping bags, cots, generating machines, motion picture projectors. All of this has no place in warfare and should have no place in maneuvers. To achieve the mobility necessary to fulfill the rôle this writer believes the Armored Force henceforth will play, it is essential that its fighting elements operate from base camps where everything but the necessities for actual combat may be left. There the Personnel Section should remain, there should be found the kitchen trucks, the Post Office and all maintenance vehicles unable to share in combat. There the trains must be left, guarded, if necessary, *not* by fighting vehicles of the Force, as is the custom at present, but by troops unable to undertake the work for which the Armored Force is designed. These base camps themselves should be as mobile, and as comfortable, as possible: a home to which the fighting components may look to returning after combat. To maintain the fighting elements in complete self sufficiency at every step of the way is neither possible nor desirable.

Lastly, and of primary importance, is the question of communications. Today our Armored Forces are restricted tactically and strategically by the limitations of our communication system. For this, in a country which has exploited commercial radio to the extent we have, there is no excuse. Immediate improvement in communications is imperative. In order to carry out the tasks above described a voice radio is necessary which will permit communication between *all* elements of the division. Action will be so rapid that there should be no time, nor necessity, for coded communications. The only transmission of code should be between the operating forces and Army General Headquarters. In the smaller units, a battalion commander should be able to converse with all vehicles in his command, and each company and platoon commander should be able to do likewise. Only in this way can a raiding operation achieve the cohesion and promptness of maneuver necessary for success. To insure such promptness as well as for *MORALE* purposes, it is essential that every maneuver problem be permitted to come to a conclusion rather than be terminated by a theoretical solution.

V

This article is but one opinion regarding the future use of the Armored Force. It seems obvious that it cannot be used as the Germans used it in France. It must be used in some other way. This is one suggestion. There should be others: lots of them—to the end that the Armored Forces of the United States be as surprising and as successful as the Panzer divisions of Adolph Hitler's Third Reich.

Maxims

"Always mystify, mislead, and surprise the enemy, if possible; and when you strike and overcome him, never give up the pursuit as long as your men have strength to follow; for an army routed, if hotly pursued becomes panic-stricken, and can then be destroyed by half their number.

The other rule is, never fight against heavy odds, if by any possible maneuvering you can hurl your own force on only a part, and that the weakest part, of your enemy and crush it. Such tactics will win every time, and a small army may thus destroy a large one in detail, and repeated victory will make it invincible."—*General Thomas J. (Stonewall) Jackson.*

The 6th Cavalry, Maneuvers in Louisiana

*By Captain John F. Franklin, Jr., Cavalry**

AT dusk on the 4th of September, the 6th Cavalry completed a movement from the "Little Bohemia" area to a rather close and confined bivouac on Highway 71, some five miles below Alexandria, La. This area into which the Regiment was squeezed measured only 500 yards on a side. However, since an advance reconnaissance detachment, consisting of personnel from each organization, had preceded the Regiment here, and were waiting to guide the units into their specified places, the entire column moved into the plot through a very small gate without halting a single individual vehicle until it had reached its parking space. Such a movement is seldom witnessed. Having completed this, the Regiment expected to settle down, establish an outpost, feed, and reconnoiter the area. Only the preliminaries of this were completed when an order was received from IV Army Corps at 7:00 PM. Our RED Third Army would complete its mobilization in northeast Louisiana by 20 September. IV Army Corps, reinforced, was to advance and secure crossings of the Calcasieu River between Slagle and Hineston inclusive. The 6th Cavalry was given the very broad mission of covering the left flank of the Corps by aggressive reconnaissance to the south and southeast, and by harassing action on the flanks of any hostile threat. One motorized battalion of infantry from the 31st Division was attached to the 6th Cavalry, an item that the Regimental Commander had requested numerous times before with no success until now.

To accomplish this mission, the Regimental Commander, Colonel John A. Considine, without the slightest delay ordered the Motorcycle Troop to send three platoons south on the following routes: State Highway 5, U. S. Highway 71, and U. S. Highway 165 to establish contact and delay as much as possible until relieved by elements of the scout-car troops. The motorcycle troop was used initially in this case because it was after dark, and the sacrifice of the motorcycles, if necessary, in making contact in darkness was preferable to sacrificing the scout cars.

Troop E (one section P & D, attached) was ordered to move in its zone extending from Highway 71 exclusive of State Highway 278 inclusive.

Troop F (less one platoon—one section P & D, attached) was ordered to move in its zone extending from the Red River to U. S. Highway 71 inclusive.

Two phase lines were designated; first, one running from Bijou to Cheneyville to Hineston, and, second, one running generally parallel to the first and ten miles father south. The troops were to report their arrival at each phase line, and proceed therefrom upon Regimental order only. Upon reaching the first phase line, where the troop sectors became more narrow, thus "pinching out" some elements, each troop was instructed to release one platoon to regimental control.

In general, both troops were to contact elements of motorcycle troop, relieve this troop, gain contact with and delay any enemy forces by harassing action and demolitions judiciously placed.

The Regiment, less above elements, remained in reserve at Inglewood, and the attached Infantry remained in readiness in the vicinity of Anandale.

However, a radio bantam patrol was ordered out at this time to go south on U. S. Highway 71 and down State Highway 26 to point of contact.

Upon reaching the contact area, the radio bantam patrol was to leave main roads and filter in behind the hostile troops to a specified area designated by orders received over his radio from the Regimental Commander.

It is interesting at this point to go into the details of equipment, crew, and mission of this bantam. First and most important, by an ingenious arrangement, a 12-volt battery substituted for the standard battery, thus allowing the installation of a SCR 245 radio set on the bantam. Other items include a small set of air-ground panels, five days of rations, three sub-machine guns, two land mines, one five-gallon can of gasoline, and a 2½-gallon can on each fender, one containing oil, and the

Bantam, radio equipped

*Faculty, The Cavalry School, Fort Riley, Kansas.

other gasoline. The crew consists of one officer, a driver, and a radio operator. Their general mission is to get in rear of enemy positions, near the rear installations, hide, observe, and report their findings to Regiment by radio. If distances become sufficiently great, relay radio stations are established to maintain communications. Friendly air observation may direct the bantams into areas needing close observation. The bantam thus equipped and employed proved its worth on numerous occasions throughout the maneuver. The Regiment keeps four such bantams equipped and ready for detail on five minutes notice. Because they hide deep behind enemy lines ready to report any large movement, armored for example, the 6th has dubbed them "Squealers."

About ten the first night of this phase a report was received that hostile BLUE mechanized cavalry was active in the rear of our position at Inglewood or in and around Alexandria. The report seemed so preposterous that the Regimental Commander in person, with a force consisting of a section of scout cars, a few solo motorcycles, and two tractor-trailers loaded with 30 men each, proceeded to Alexandria to clear up the situation. In short order the hostile cavalry, including a platoon of scout cars and a tractor-trailer loaded with men only, were overtaken. In this particular encounter, the action was so close that ejected shells from the rifles of the hostile cavalrymen hit the Regimental Commander in the back—putting a very realistic touch to the entire situation. The probability of this BLUE cavalry force equipped with a large 11 ton tractor-trailer accomplishing any mission at all behind enemy lines was demonstrated to be reckless indeed and served no military purpose.

As the first night wore on, information from the mechanized elements out on the line was very meager. The static was so bad that no messages at all were received from the right scout car troop, for some four hours, not even motorcycle messengers—an inexcusable error on the part of that troop and a matter which was brought to their very vivid attention by the Regimental Commander at a later date. About midnight, though, information began to come in and revealed that there was a considerable enemy threat pushing north on U. S. Highway 165, just below Woodworth. In fact, the threat became so strong that the Regimental Commander at 1:10 AM committed his attached Infantry Battalion. Although this battalion had their own transportation, it was some two and a half hours before they were in position at Woodworth, the delay resulting from the fact that breakfast was served prior to complying with the order.

At daylight, the Sixth Cavalry with the Third Battalion of the 156th Infantry and a battery of 75's were disposed over a front of 23 miles covering the crossing of elements of the IV Army Corps over the Red River and defensive preparations to meet the northward plunge of the BLUE (hostile), Third Army. The Sixth as reinforced was to bear the brunt of the advance of a whole army corps.

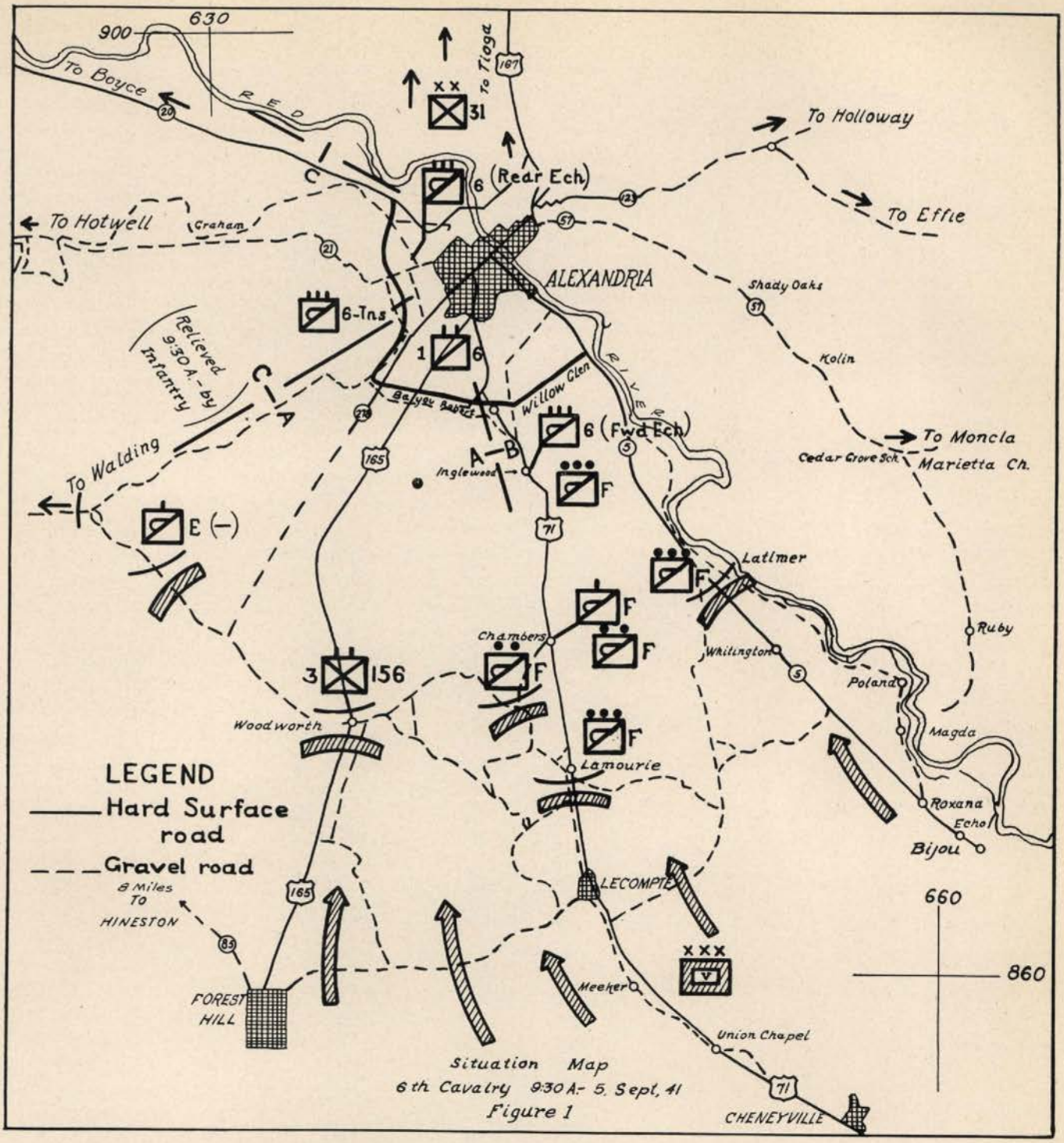
The fight opened at daylight. By a judicious use of demolitions, stubborn infantry fighting, cavalry harassing attacks, and long range machine gun fire, this Army Corps was practically stopped in its tracks, as it only gained about three miles in one sector. This was not vital.

About 6:00 AM on this same morning of September 5, Colonel Considine received instructions from IV Army Corps to establish a line along the Bayou Robert from Willow Glen to State Highway 278, and along Bayou Robert to State Highway 21 and Bayou Rapides to State Highway 20. The horse squadron was still intact with the Regiment less the 2d Squadron. By this time the mechanized troops had been forced back to the line Latimer, Lamourie, Woodworth. The motorcycle troop had completed its mission and had withdrawn into reserve.

Therefore, to comply with this latest mission, the Regiment, less the two reconnaissance troops and Regimental command group, moved out from the bivouac at Inglewood towards Alexandria at 7:00 AM. Troop C in portée led the order of march with the trains, and Troops A and B in portée following in that order. Small resistance was met, and quickly removed in vicinity Willow Glen. The column continued; the trains halted along a gravel road with CP of the rear echelon on State Highway 21 one-half mile west of Alexandria. The 1st Squadron, with Troop C on the right, Troop C in the middle, and Troop B on the left, went into position on the prescribed line south and west of Alexandria. Satisfactory parking space under some cover was found for the large tractor-trailers behind the line and northwest of Alexandria.

Therefore, at 9:30 AM on 5 September, the 6th Cavalry was disposed with the two scout car troops and one battalion infantry holding under pressure on State Highway 5, U. S. Highway 71 and 165, at Latimer, Lamourie, and Woodworth respectively, facing generally south, the trains under cover west of Alexandria and the 1st Squadron on a horseshoe line covering the west, southwest and south of Alexandria. The Regimental CP, forward echelon, was in operation at Inglewood, and CP, rear echelon, one-half mile west of Alexandria on Highway 21. (*See Figure 1.*)

During the remainder of this day with the forward echelon at Inglewood, the action was mainly delaying and harassing attacks. As our RED Infantry retired, the cavalry covered their flanks and delayed or harassed the hostile infantry columns along U. S. Highway 165. To the east astride Highways 71 and 5, the cavalry delayed by fire and demolitions. The enemy was dominated, and only got forward little by little. Demolitions and mine fields (actual) stopped all truck movements, and the "doughs" had to hoof it. An aerial reconnaissance of the front, intrusted to the 6th Cavalry, was performed by the Regimental Commander in person, and revealed on



Situation Map
6th Cavalry 9:30 A.- 5 Sept, 41
Figure 1

all main highways leading north toward Alexandria long columns of trucks, bumper to bumper, from 5 to 15 miles in depth. Thus this hostile Army Corps was held out of artillery range of Alexandria until dark, and the 6th accomplished its first mission.

Back with the horse squadron around Alexandria about noon of this day, it became very evident that it was useless to leave Troop C in position, since the Infantry was moving into that sector. Therefore, Troop C was placed in reserve, and held near the rear echelon CP. Likewise one scout car troop, having been in action on U. S. Highway 165 and State Highway 278, was relieved by the Infantry and placed in reserve with the rear echelon.

Instructions were received about 1:00 PM to send one platoon of scout cars to the RED 31st Infantry Division CP to become a part of the RED tank defense force. Many attempts were made to determine the location of this CP with no success until a Regimental staff officer managed to find his way into the home of two fair young ladies, whose husbands were in the maneuver area somewhere, and secured use of their telephone. Immediate contact was made with IV Army Corps by this commercial phone, and exceptionally important in-

structions were received direct. Ice water was served by the ladies. G-3, IV Army Corps ordered the Regiment to exert maximum effort to stop the progress of a hostile force, about the size of a brigade, on State Highway 278, moving toward Alexandria and only four miles out of the city limits. The 6th was to hold, at least, until the RED 31st Division had cleared Alexandria. The Regimental Executive, in command at the rear echelon CP, immediately committed all combat troops available to him, consisting of Troop C and two platoons of Troop E (Mech). IV Army Corps sent two heavy weapons companies into the position to reinforce the cavalry. Immediately a report was received from the horse squadron that a hostile brigade of infantry was pushing vigorously northeast toward Alexandria at the point previously reported. He indicated that he could hold them until relieved by the Infantry.

The problem now arose of moving the trains and the tractor-trailers from this danger area to the specified bivouac area near Hotwell. This appeared quite difficult since the roads were jammed with either troops, trains, or both, and there was strong possibility of being cut off. However, the movement was initiated at 5:00 PM and completed at 6:30 PM, covering a distance of 17 miles, and going into a strange bivouac that the advance reconnaissance detachment could not recommend as suitable.

Obviously this move dispersed the Regiment to a maximum extent. Troop F was still executing delaying action south of Alexandria on U. S. Highway 71 and State Highway 5. The horse squadron was still in position just south and west of Alexandria. The Regiment, less these elements, was in bivouac vicinity, Hotwell, south of Boyce by 6:30 PM. Therefore, the very difficult problem of breaking contact with the enemy, and assembling these elements at one very obscure, totally unknown place in darkness, presented itself to the Regimental Commander. Orders were issued for all units to assemble at Hotwell prior to daylight. The mechanized elements were to withdraw via State Highway 20 through Alexandria, and the horse squadron was to come across country from south of Alexandria. The execution of the job, of course, was up to the units themselves. Starting at 9:30 PM, the 2d Squadron less Troop E, which had come in with the trains, broke contact, withdrew through Alexandria, contacted their kitchen, fed supper, and reached the bivouac at 11:00 PM. The 1st Squadron likewise withdrew from contact, leaving the Infantry in position, contacted their trains, fed, and marched to bivouac, reaching there at 2:30 AM. At 3:00 AM, therefore, the 6th Cavalry was assembled as a unit in one place, prepared for another mission which came in short order.

At 4:15 AM, Colonel Considine received information from Corps that a hostile tank force was in bivouac in an area 4 miles southeast of Zimmerman Camp. The IV Army Corps was in a desperate position. All troops of the Corps, except the 6th Cavalry which had overnight extricated itself from contact at various scattered areas and assembled at one place, had been committed. Therefore, the IV Army Corps ordered the 6th Cavalry, operating from vicinity of Wilda post office, to block this threat from the west and southwest.

The Regimental Commander, just before daylight, issued an oral order in substance as follows:

P & D platoon was to establish mine fields and prepare all crossings of Bayou Jean for destruction. (*See Figure* 2.)

G Troop (less one platoon) was to furnish rifle and machine gun (on ground mounts from scout cars) protection for the mine fields.

F Troop (plus one platoon Troop G) was to establish two mine fields and conduct reconnaissance to a specified line.

Antitank platoon in the vicinity of RJ, east of Collins School, was to be prepared for movement and fire to the southwest and north.

The 1st Squadron and Troop E were to remain in present bivouac, prepared to move on five minutes notice.

Drivers of administrative vehicles were to be prepared to place their vehicles in roads in front of approaching tanks and thus impede traffic. If necessary, they were to ram tanks and cause them to stop.

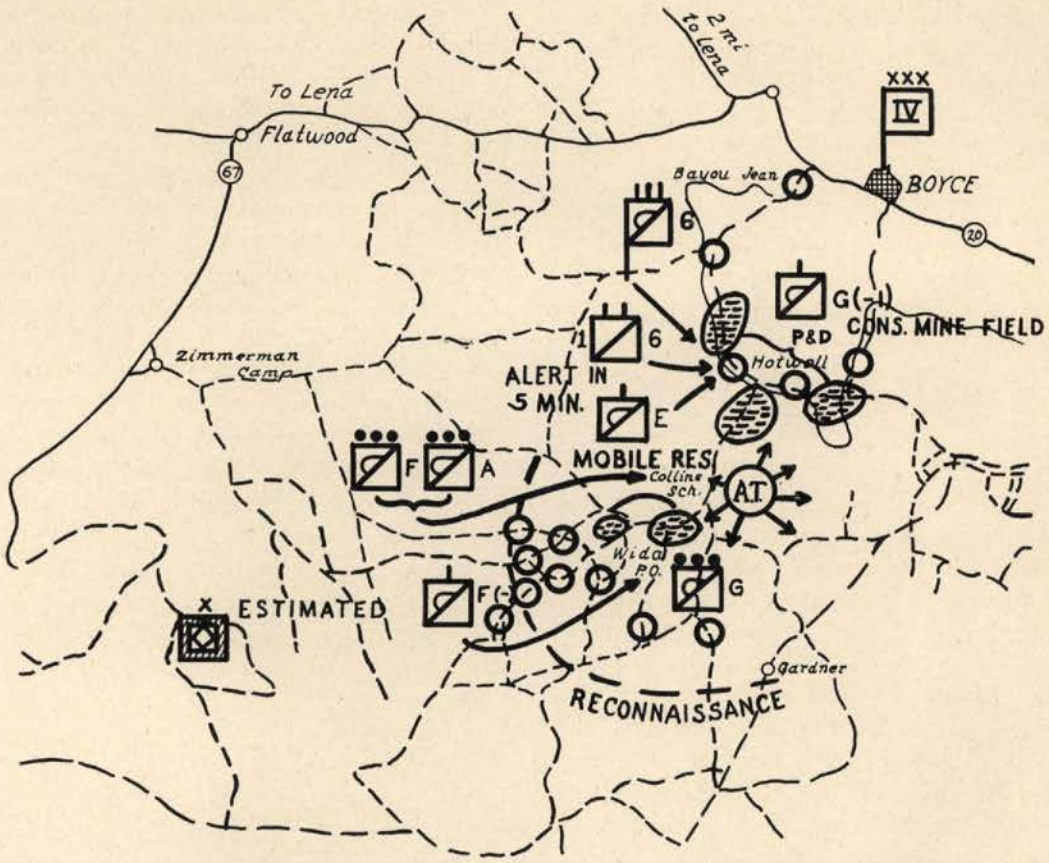
These orders were complied with immediately—in fact, the P & D platoon was leaving bivouac area before the entire order had been issued.

The Commanding Officer, with his command group only, went forward to the road forks at Collins School. Soon after arrival there, reports from the scout cars out to the south revealed the presence of a hostile brigade of Infantry. The 1st Squadron was ordered to move from bivouac to vicinity Collins School at a gallop, immediately. Shortly after the squadron arrived, the Regimental Commander ordered it to contact the hostile columns and stop their movement by delaying and harassing action. The area was divided into two troop sectors; the occupation commenced at a gallop.

While this was taking place, sufficient information was received by voice from the scout car platoons for the Regimental Commander to determine the fact that this hostile force was a brigade, and that the enemy's main effort in this entire area was due north toward IV Army Corps CP at Boyce. This information was transmitted orally by voice over radio direct to G-2, IV Army Corps.

At 7:30 AM when the action appeared to be most interesting and intense, the first phase of the Corps vs Corps maneuver was terminated.

Information was received to the effect that in general all units would remain in their final locations, with no lateral movement, and that the second phase would proceed from that disposition of troops. The 6th Cavalry, however, moved administratively to a bivouac area near Lena on U. S. Highway 20 about nine miles out from Boyce.



LEGEND

O Road Block And Demolition

Mine Field Covered By Rifle & M.G. Fire

All administrative vehicles alerted to block roads, prepared to crash if necessary (assumed) in event of armored attack.

Situation Map
6th Cavalry 4A.M. 6 Sept '41

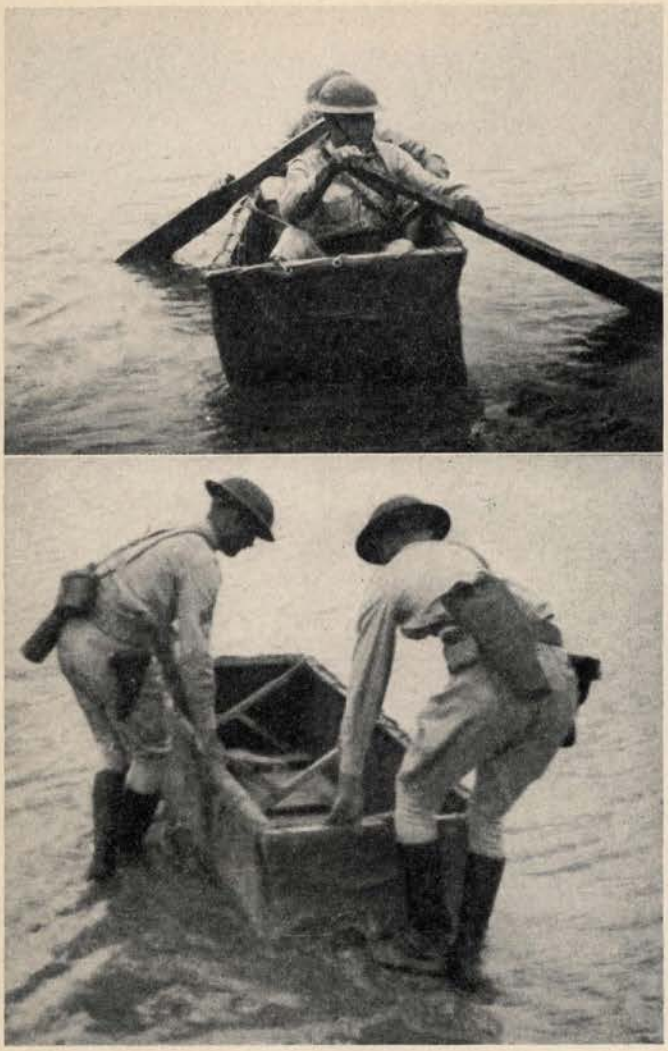
Figure 2

2d Maneuver Phase

At the opening of the 2d phase at 7:00 PM on 7 September, the IV Army Corps field order put the 6th Cavalry in corps reserve vicinity Hotwell. The Regiment prepared to comply with this order when new orders were received by telephone from the Regimental Commander who was at Corps CP. On his recommendation, the entire Regiment was not put in reserve, but was disposed as follows:

The 6th Cavalry, Lena Detachment, (bivouac area between 1st and 2d phase of Corps vs Corps maneuver) was to consist of 1st Squadron plus Troop E under command of Regimental Executive and to be in corps reserve.

The 6th Cavalry, Cedar Grove Detachment, was to consist of 2d Squadron, less Troop E, plus Regimental Headquarters, and was to proceed to Cedar Grove at 7:00 PM under command of Colonel Considine. This detachment had the mission of determining and delaying any attempt of the enemy to cross the Red River from a point just below Alexandria at BM Rush, east, to include point opposite Red River school beyond Moncla. At precisely 7:00 PM the Cedar Grove Detachment, with absolute priority on its route of march,



Men in boats

moved out from the bivouac at Lena. It was necessary to break into a tank column, stop a Quartermaster Regiment coming onto the highway, and stop oncoming traffic in order to move this detachment of the 6th Cavalry on its route where priority had been given by Corps. The Detachment moved to Boyce, turned north, and halted four miles out of town in order for security elements to take their positions. A platoon of scout cars under command of Lieutenant Bowden passed head of column and proceeded rapidly to Moncla to cover a section of the river there, a most likely place for the enemy to cross the Red River within the Regimental zone. A platoon of motorcycles proceeded forward from here also with the mission of protecting the Regiment's right flank in passing Alexandria. Then the advance guard, consisting of one platoon motorcycles and one section scout cars, went into position, the main body under S-3 closed up, and the column moved out and was soon moving at 35 miles per hour.

Upon reaching Shady Oaks on State Highway 57, Colonel Considine halted his column, opened his CP in the "Little Bohemia" once more and proceeded to issue detailed orders for the complete patrol of the Red River. The means utilized to determine the intentions of the enemy on this river illustrate complete resourcefulness and initiative. Therefore, it seems that the method is worthy of some discussion in detail.

In general, demolitions were to be prepared by the P & D platoon to delay any successful crossing of the Red River from Alexandria to Moncla, as indicated in *Figure* 3. The advance guard was instructed to outpost Cedar Grove School, ten miles east of Alexandria, where the detachment would bivouac, and to send a squad of motorcycle to observe at Harris Ferry. See *Figure* 3.

The motorcycle platoon, originally the flank guard, was ordered to observe the Red River near Alexandria.

A bantam patrol or a "squealer" with Lieutenant Goodwin in command was sent to Marietta Church at the easternmost point to observe enemy activities.

Finally four canvas boat patrols were spotted along the river at the remaining vital points.

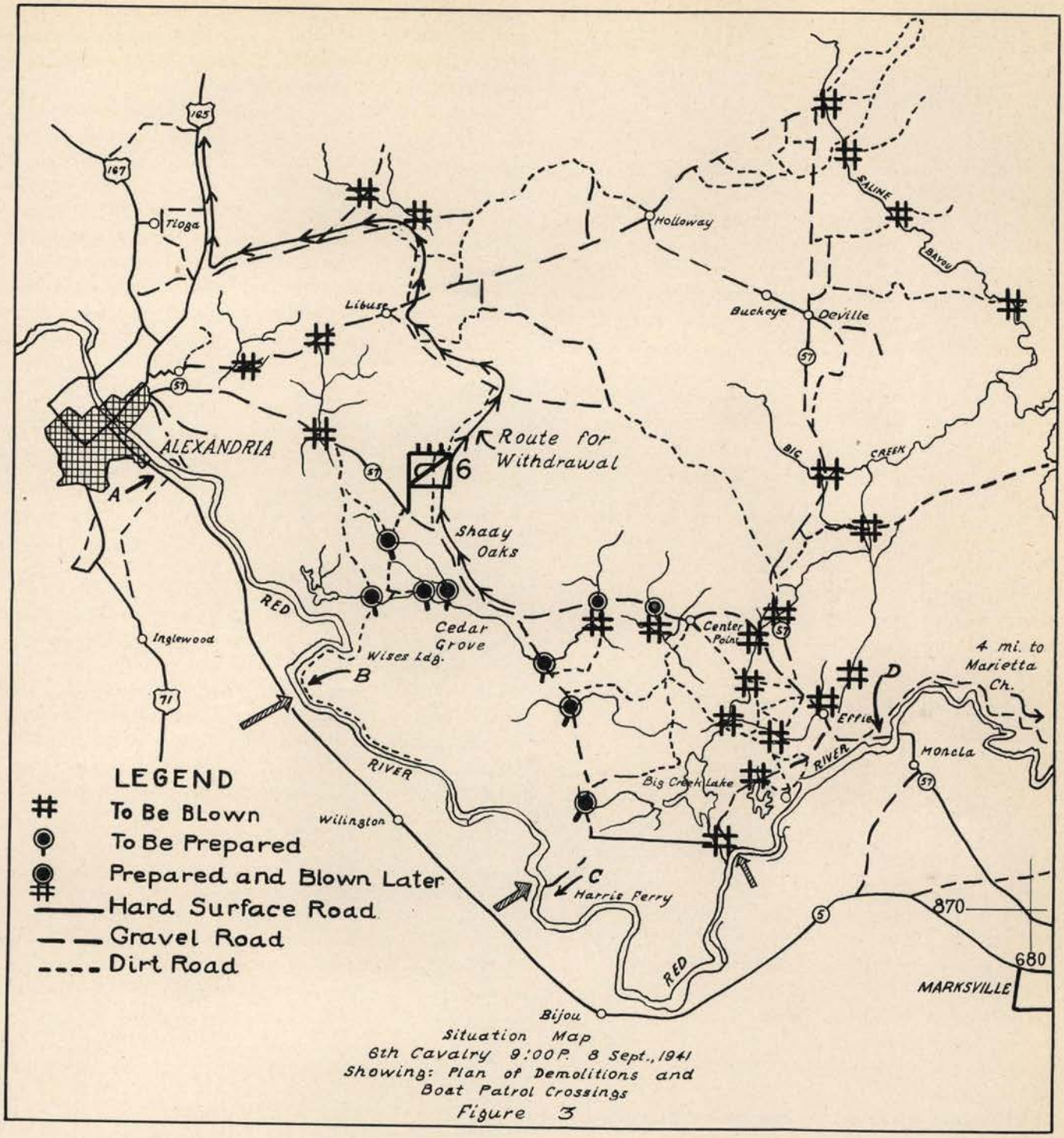
Before considering the location of these boat patrols, a description of their equipment and crew is worthy of note. The so-called boat is composed of a Government issue cot wrapped in a specially constructed canvas cover. This construction is discussed in detail in The Cavalry Journal for July-August, 1941. The crew of one boat consists of two men, generally either a non-commissioned officer and a private or an officer and a private. Paddles are easily procured, but the remainder of the equipment must be carried. Needless to say, the cots, when not actually in use as boats, are put to good use on the staff line, but must be available on call at any time such as this. They are carried with the baggage of Regimental Headquarters in the forward echelon.

In this instance the value of the boats was exploited to a maximum. The following crews were organized and dispatched as indicated: (See *Figure* 3 for location of crossings).

Designation	*Location*	*Crew*	*Equipment*
A	Alexandria	Lt. Wells 1 NCO 2 Pvts.	2 boats 1 AT scout car (w/radio)
B	Wise Landing	Lt. Swofford 1 NCO 2 Pvts.	2 boats 1 radio bantam 1 scout car w/o radio for transportation
C	Harris Landing	Lt. Satterfield 1 NCO 2 Pvts.	2 boats 1 AT scout car w/radio
D	Moncla	Lt. Scollin 1 NCO 2 Pvts.	2 boats 1 AT scout car (w/o radio but contact to be through scout car platoon at Moncla)

It is well worthy of note that each of the above details had a definite means of radio communication. The S-2 was made directly responsible for the distribution of this equipment, a difficult matter under the circumstances.

The general missions of these patrols was to procure identifications, and particularly to report any sign of



Situation Map
6th Cavalry 9:00 P. 8 Sept., 1941
Showing: Plan of Demolitions and Boat Patrol Crossings
Figure 3

bridging material, any presence of assault boats, and any large movement of troops.

The officers were carefully instructed to cross in one boat with a man, and if no trouble was encountered, he was to signal his NCO by flashlight to follow in the second boat. Then the detail was to proceed under cover to the highway running parallel to the river, hide, and report any item of information. This task presented some difficulty due to the swiftness of the current, width of the river, and particularly the swampy country and very steep banks on both sides.

Having completed the disposition of these elements of the Regiment, Colonel Considine's detachment, less the advance guard and the boat crews, proceeded without lights six miles farther along State Highway 57 to Cedar Grove, where the usual guides were waiting to put the Regiment into bivouac.

Beginning at 12:00 midnight, the first boat patrol reported that he had crossed the Red River, and by 3:00 AM all four had reported in, each giving a negative report. At 1:00 AM the boat patrol at Wise's Landing reported an Infantry column in trucks with motorized artillery and trains moving southeast on State Highway 5. This was estimated to be not less than a reinforced

brigade, as it took 4 hours to pass a point. At 2:00 AM the Alexandria patrol reported that a platoon of hostile infantry was crossing to the north bank. Finally, during the early morning hours on the 7th, an enemy force, the size of a company, managed to make a crossing at Latimer Landing. Our force at Wise's Landing was immediately increased to a total of one platoon motorcycles and one section scout cars. This little detachment eventually managed to get in rear as well as in front of this small enemy force, capturing a goodly portion of them. No other action of any importance took place during the day except that a bridge on the Regiment's only route of withdrawal through its own demolition was physically repaired sufficiently to carry the trains. The Regimental Commander made a flight over the Red River in this area, and definitely determined and later reported to the Corps Commander that the enemy effort on this flank was only a feint. This was wholly verified that night when the enemy forces on our side of the river partially withdrew their outpost lines instead of showing aggressiveness to carry out the feint.

After darkness the Regiment moved to the vicinity of Shady Oaks, closer to the exit through the prepared demolitions, and remained there in comparative rest until 8:00 AM the morning of September 8, when the problem was terminated.

To Young Officers*

YOUR words will always be heard with respect by your subalterns if you support them with action and example; if you do not, these very words will bring your own faults into relief.

Do your duty for duty's sake, and not for the benefit it may bring to you, for that would be a debasement of your work. If you are given charges (or positions) that signify distinction or honor, let it be the results of the recognition of your merit, but never the result of a plan pursued with selfish efforts.

Guard jealously your prestige as a soldier; try to increase it constantly, for it is indispensable in the exercising of command.

The ambition to advance to the highest rung of the military hierachy is just and noble; the most important thing is not this, but your own worth and value at whatever rank you attain. Neither titles nor diplomas are proofs of professional capacity.

Study to increase your professional knowledge, but remember one commands more respect because of prestige rather than knowledge.

Take care to merit the high opinion of your subaltern, not through a cheap spirit of vanity, but because he is the one to whom you have to give orders, and if you are to succeed in this, he must have full confidence in your ability.

A soldier needs a lifetime to acquire prestige, but a second is sufficient in which to lose it.

Remember under all circumstances that you are wearing a uniform and not a suit of livery.

Never confuse subordination, which is the self-denying virtue of a soldier, with submission, the low state of the serf.

Be an airplane and gain altitude by your own forces and not a glider which rises only because it is towed.

Be even a Quixote in your acts; never a Sancho.

Do not stifle, in your subordinates, feelings of pride; on the contrary, encourage and direct them; if you do not, you will have lambs and not lions on the field of battle.

When you have a subordinate who seems to be ambitious, do not hinder him; study him and try to guide him; it is a force like that of a torrent, which builds or destroys; it all depends on how it is guided.

Without question the factor of chance has its effect in the outcome of an undertaking, but this factor intervenes the least, the greater the talent and foresight of the one charged with it.

Do not destroy the work that you find done, unless you replace it with something unquestionably superior.

Thinking over, solving and executing, must be the unbroken succession of phases of every military problem presented to you.

Fellowship in an army is the index of the moral solidarity of its officer group. This feeling is not based merely on the external manifestations of social character, but on something much more solid: mutual respect, esteem and consideration.

Confidence in oneself must be a characteristic of an officer, and must never be confused with a petulant self-worship.

The Argentinean officer has the fortune to possess in his own history the archtype of soldier, General San Martin. Even though to God alone is it given to concede the gift of equaling him in his military genius, it is within the range of our possibilities to resemble him, in the matter of his soldierly virtues.

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*"Algunas palabras a los jóvenes Oficales," by General Abel Miranda. Translated from the Spanish by Mr. LaVergne Dale, Library, Command and General Staff School, from *Revista Militar*, February, 1941. Condensed by Colonel F. M. Barrows, *Field Artillery*.

AN IDEAL CAVALRY-Infantry Team

By Captain Bruce Palmer, Jr., 6th Cavalry

AS stated in maneuver directions, one of the primary objectives of the recent large scale maneuvers in Louisiana, was the moulding of the different arms and services into one well-knit team. A gratifying result of these field exercises was the emergence of a definite Cavalry-Infantry team, as demonstrated by various infantry units of the IV Army Corps and its Reconnaissance Regiment, the 6th Cavalry. This Cavalry-Infantry team is not new; it is centuries old. In a relative sense, the technique is new, having been developed since the advent of the armored reconnaissance vehicle.

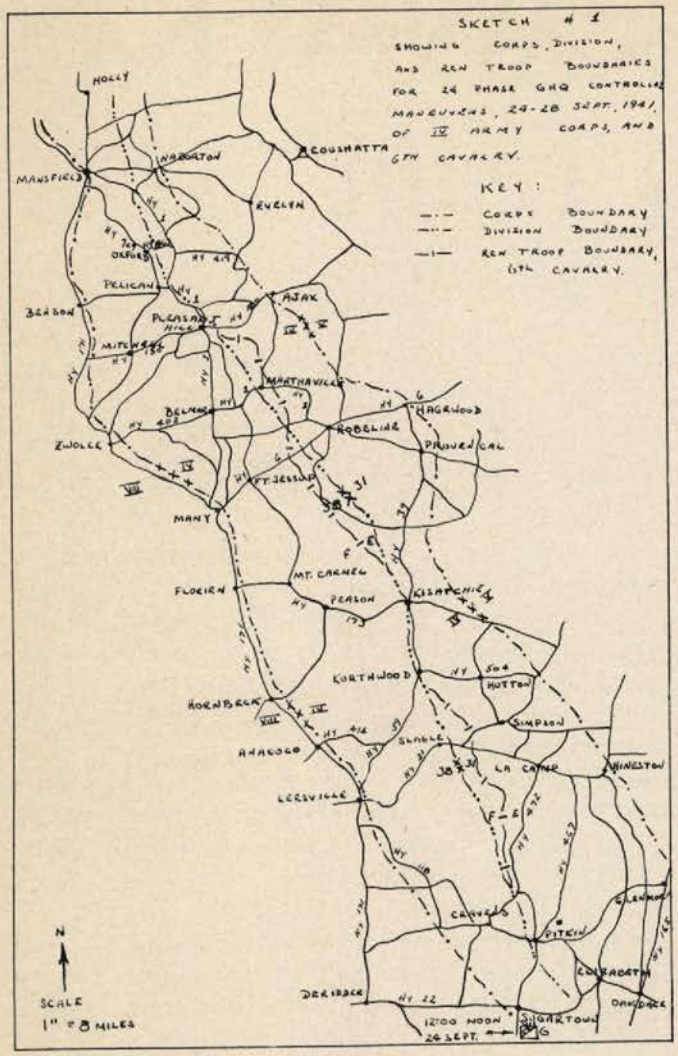
There is one particular phase of this Cavalry-Infantry coöperation with which this article will primarily deal—that is, the coöperation between Cavalry Scout Cars, and other reconnaissance vehicles, and motorized, or partially motorized, infantry in an aggressive advance against retiring infantry attempting to get away rapidly. Cavalry can assist Infantry under such circumstances by carrying out a variety of important missions, including:

1. Furnishing route reconnaissance and assisting the infantry forward on previously reconnoitered routes.
2. Driving back or defeating hostile reconnaissance patrols and small security detachments which may unnecessarily slow up the advance of friendly infantry.
3. Reconnaissance and prompt report to forward infantry and artillery commanders of enemy resistance met which friendly cavalry cannot overcome. (Periodic negative reports when applicable.)
4. After friendly infantry makes contact with the enemy, continuous battle reconnaissance of hostile flanks and rear. Prompt exploitation by aggressive action of any "holes" found.
5. Supporting the infantry attack by fire from machine guns of scout cars in defiladed positions, or by dismounted guns.
6. In emergencies, transporting dismounted infantrymen to critical points where sorely needed.
7. Holding bridges, road centers, key terrain, or other critical points until relieved by friendly infantry and preventing the demolition of such critical points by vigorous surprise action against the enemy.
8. Maintaining liaison with flank Infantry and Cavalry units.
9. Aggressive reconnaissance, night and day, to maintain contact with the enemy in order to determine when he is making, or has made, a general withdrawal.

During the second phase of the Army vs. Army maneuvers in Louisiana in September, all of the above missions were successfully carried out with a resulting smooth Infantry-Cavalry combination. At the start of hostilities, the IV Army Corps was concentrated in the OBERLIN-DRY CREEK area with the 6th Cavalry in the vicinity of SUGARTOWN. During this field exercise, the IV Army Corps operated as an interior Corps, with the VIII Army Corps on its left and the V Army Corps on its right. The mission of the IV Army Corps at the start, 12:00 noon, 24 September, was to advance rapidly in its zone, seize the crossings of the Calcasieu River, and push on to the north. Colonel John A. Considine, Regimental Commander, 6th Cavalry, with the priority mission of reconnoitering the Corps zone and the secondary mission of covering the advance of the Corps, initially used his two scout car Troops, "E" and "F," to cover the Corps Front, with Troop "E" on the right and Troop "F" on the left.

The IV Army Corps advanced with two divisions abreast, the 31st Division on the right and the 38th Division on the left, the 43d Division remaining in Corps reserve. Initially, each forward infantry division employed a reinforced motorized infantry battalion to push forward aggressively in their respective division zones behind the cavalry screen. Generally, the division zones coincided with the reconnaissance zones of the two scout car troops. (See sketch No. 1.) In this discussion, I will deal with Troop "F," a reconnaissance (scout car) troop, and its coöperation with the forward elements of the 38th Division in the left zone of action.

On September 24th and 25th, the advance north in this left zone was hampered by well executed, but undefended, enemy demolitions. By hard work, a reinforced motorized battalion of the 152d Infantry (38th Division) was able to keep pressing forward in spite of demolitions. For the most part, the enemy faded away without fighting, although in several instances a company of infantry with machine guns and antitank guns made a temporary stand. Leading scout car patrols of Troop "F" got around blown bridges successfully and their prompt report of the enemy demolitions and situation to the front enabled the infantry to have engineers with the necessary materials repair the bridges without delay. During an attack on the 24th of September of the 152d Infantry against a delaying position south of the junction of Hy. No. 39 and Hy. No. 414, one platoon of scout cars found an obscure trail around the west flank of the enemy position which enabled them



to block the hostile rear and cause heavy casualties when the enemy withdrew. One noteworthy incident which occurred about this time was the coöperation and liaison established between a scout car platoon and a motorized battalion of the 180th Infantry, a regiment of the 45th Division from the adjacent VIII Army Corps. This unit of the 180th Infantry followed the 152d Infantry in its advance north from LEESVILLE on Hy. No. 39 on the afternoon of September 24th. Upon reaching the junction of Hy. No. 39 and Hy. No. 414, this battalion of the 180th Infantry was to advance to the west on ANACOCO via Hy. No. 414. A platoon of scout cars was sent to reconnoiter this route into the town. It surprised and captured small engineer detachments left to blow prepared demolitions on two successive bridges before the demolitions could be executed, thus assisting the advance of a friendly flank infantry unit.

The battalion of the 152d Infantry bivouacked on the night of the 24th of September about two miles south of KURTHWOOD, while Troop "F" pushed on into KISATCHIE and PEASON during the night. By dark, 25th September, friendly infantry had reached the vicinity of MT. CARMEL, while the scout car patrols pushed on to the line MANY-FT. JESSUP. During the advance, liaison was maintained with units of the VIII Army Corps on the left—namely, its Reconnaissance Regiment, the 113th Cavalry, and elements of the 90th Infantry Brigade. On the right, liaison was maintained with Troop "E," 6th Cavalry. Liason was also established with all three horse troops of the 6th Cavalry—Troop "B" in the area KURTHWOOD-KISATCHIE-PEASON, Troop "C" near HORNBECK, and Troop "A" neary MANY. It was difficult during this period to maintain contact with an enemy who blew the bridges in his zone but rarely defended them. However, on Hy. No. 171, contact was maintained with elements of the enemy 27th Division east of the highway from HORNBECK to MANY. During the advance, the Commanding Officer, 152d Infantry, well forward with his leading battalion, was kept informed of the situation to his front.

From the line MANY-FT. JESSUP to the north the only existing "hole" in the zone of the 38th Division was via FT. JESSUP. Early on the 26th September Troop "F" began its reconnaissance to the north through this "hole." From this point till the termination of hostilities on the afternoon of the 28th September, the action of these 6th Cavalry scout cars was to be closely associated with the advance north of the 149th Infantry, commanded by Colonel Wm. S. Taylor. The operations of the 149th Infantry were quite remarkable. For three days it was the spearhead of the attack of the IV Army Corps operating in the center of the III Army. At the conclusion of the field exercise, Colonel Taylor speaking of the coöperation between the Cavalry and Infantry made the following statement:

"It is my studied judgment that the use of armored scout cars in assisting the advance of motorized infantry is absolutely essential when time is the ruling factor. This Cavalry Screen is, in my opinion, necessary and such a combination will make a close approximation of the ideal Cavalry-Infantry Team. . . . From September 25th to September 28, 1941, the 149th Infantry advancing in its zone on FORT JESSUP, MARTHAVILLE, PLEASANT HILL, and MANSFIELD, respectively, had the assistance in this advance of the unit mentioned (Troop 'F,' 6th Cavalry—a scout car troop). . . . Their units (Scout Cars) were always to the front and flank and the action of this Regiment was materially assisted by them . . . *and furnished this Regiment information covering our flanks and to the front in a consistent flowing, uninterrupted stream.*"

General Roy W. Easley, Commanding General of the 75th Infantry Brigade (149th and 150th Infantry) of the 38th Division, made the following statement concerning the same operation:

"The rapid advance of the 75th Infantry Brigade from KISATCHIE to a point several miles north of MANSFIELD, LOUISIANA, in the second phase of the Army maneuvers on September 24th-28th was largely due to the efficient ground reconnaissance performed by the Scout Car Troop. (Troop 'F,' 6th Cav-

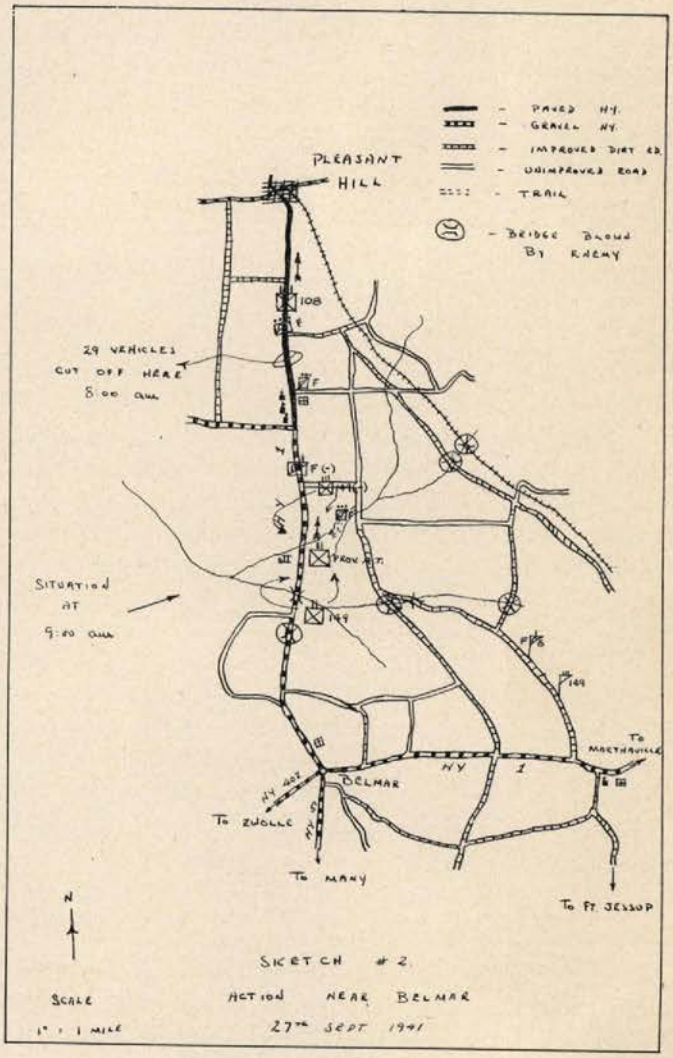
alry). Through this rapid and extensive reconnaissance, I was kept informed at all times of the presence or absence of hostile forces both to the front and flanks, and the location of units either on our right or on our left, thus enabling me to more expeditiously plan and execute movements of my brigade. . . . My plan of flank protection was facilitated and more efficiently planned by myself and staff due to the information furnished by this troop. At no time were the flanks of the 75th Brigade seriously threatened, even though at times the brigade was far in advance of other elements of the Corps. . . . *It is my earnest desire to again be afforded the opportunity of working with the Cavalry on similar missions, as I believe this type of training and coöperation between the two arms is of the utmost importance.* The Cavalry-Infantry Team as it functioned in these recent maneuvers is certainly a satisfactory and expeditious aid to rapid movement."

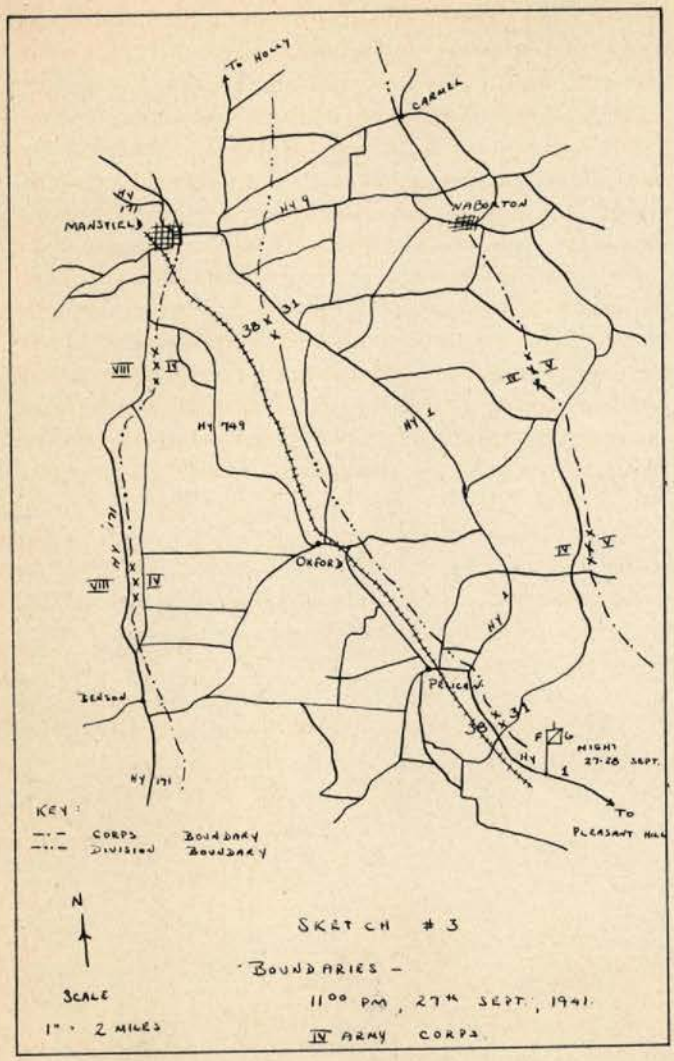
On the 26th of September, the advance north from FT. JESSUP towards Hy. No. 1 was delayed by poor roads made worse by rain and by hostile demolitions. No serious enemy resistance was met till Hy. No. 1 was reached. Here the road junction on Hy. No. 1 about four miles east of BELMAR was held by a strong detachment of the 35th Division Antitank Battalion and Company "E," 140th Infantry. The Scout Cars were stopped and friendly infantry was notified with the result that the leading battalion, the 3d Bn., 149th Infantry, attacked without delay. The attack, supported by scout cars and a horse patrol from Troop "A," 6th Cavalry which was reconnoitering in the same area, was successful. The 149th Infantry organized the position captured and after the rest of the Regiment had been brought forward went into bivouac for the night. Reconnaissance during the late evening and early hours of darkness revealed that the enemy had withdrawn to the north of MARTHAVILLE leaving all roads blocked by demolitions. BELMAR, however, was securely held all night. In the center of the zone of reconnaissance, an aggressive patrol captured a demolition crew on a bridge about eight miles northeast of BELMAR before the bridge could be blown. With the aid of this break, a "hole" to the north was found and by 11:00 PM contact was gained with a battalion of the 108th Infantry about four miles south of PLEASANT HILL. This was as close to the town as the patrols could get during the night. Information of the situation was periodically sent to the C.O., 149th Infantry by solo motorcycle messenger.

On the morning of the 27th of September, an incident occurred which thoroughly demonstrated the efficacy of "soft spots tactics," that is, the rapid and aggressive exploitation of soft spots in the enemy dispositions wherever found. At 6:00 AM, scout cars tried to get into BELMAR without success. At 6:50 AM, the enemy battalion of the 108th Infantry withdrew towards PLEASANT HILL, enabling the scout car platoon maintaining contact to secure control of a part of Hy. No. 1 south of town. Meanwhile, the bulk of Troop "F" moved north through the "soft spot" previously reconnoitered and, entering Hy. No. 1 at a point south of the patrol in contact with the enemy, blocked the rear of the enemy at BELMAR. About this time, part of this force withdrew and was trapped in a sector of Hy. No. 1, a total of 29 vehicles, including antitank guns and simulated scout cars, being captured.

At 7:30 AM one Bn., 149th Infantry, attacked BELMAR, the rest of the Regiment advancing along the route taken by Troop "F." About 8:00 AM the remaining enemy in BELMAR, which later proved to be a major part of the II Army Provisional Antitank group, began its withdrawal. Scout cars effectively blocked the head of the hostile column on Hy. No. 1 about five miles north of BELMAR, while other scout cars on unused trails harassed the east flank of the column. The enemy tried to fight its way out, but the 149th Infantry, moving swiftly, soon closed in on the enemy from all directions and captured them to a man. (See Sketch No. 2.)

By 12:30 PM the 149th Infantry had control of PLEASANT HILL, scout cars helping the infantry mop up the town and harassing small enemy motorized detachments of the 165th Infantry trying to get away.





About this time, liaison was made with the 152d Infantry of the left near MITCHELL, and with the 150th Infantry on the right about six miles east of PLEASANT HILL. Again the enemy in withdrawing made a thorough job of demolitions, but before long scout car patrols had located two "holes" and had gone through to the northwest. Information of these routes was furnished to the 149th and to the 150th Infantry. Northwest of PLEASANT HILL, small enemy detachments delayed the scout car advance but were driven back, till at 4:30 PM, 27th September, contact was gained with the enemy on the high ground about three miles southeast of PELICAN. Reconnaissance showed a natural defensive position held by a battalion of infantry supported by artillery. Attempts to out flank the position by vehicles were initially successful but bogged down in marshy ground. By 5:30 PM the attack of the leading battalion of the 149th Infantry had been stalemated. By dark a second Bn., 149th Infantry, with two batteries of 75-mm's in support, had been committed with no immediate results.

The 6th Cavalry scout cars maintained close contact with the enemy and at 9:30 PM discovered that the enemy was making a general withdrawal. All night long patrols, operating in the assigned zone, tried to get into PELICAN and to reconnoiter to the north and northwest of the town, but were stopped by demolitions and security detachments in the vicinity of PELICAN.

About midnight, orders from the III Army and the IV Army Corps for delivery to the leading elements of the 38th Division were received. *This liaison mission was completed by* 3:30 AM, *28th September*. During the night, orders changing the zone of the scout car Troop were received. Troop "F" was to cover the front of the IV Army Corps which had now become quite narrow. (See Sketch No. 3.)

At 5:30 AM, 28th September the 149th Infantry resumed its advance and by 7:00 AM had captured the junction of Hy. No. 1 and Hy. No. 749 just east of PELICAN. From here on, the 38th Division was to attack in the left half of the Corps zone, while the 31st Division was to attack in the right half. Two platoons, Troop "F," were assigned to reconnoiter the right half of the Corps zone covering the advance of leading elements of the 31st Division on Hy. No. 1, while the rest of the Troop, reconnoitering in the left half, covered the advance of leading elements of the 38th Division.

The advance to the northwest was rapid. By 7:45 AM, PELICAN was captured by the 149th Infantry. At 8:00 AM the 152nd Infantry had reached BENSON. By 8:45 AM, OXFORD was in the hands of the 149th Infantry. On Hy. No. 1, the aggressive action of a scout car platoon enabled the 124th Infantry (31st Division) advancing on that route to pinch off and capture a company of the 138th Infantry on Hy. No. 863 between OXFORD and Hy. No. 1. Bitter resistance was met on Hy. No. 749 about four miles southeast of MANSFIELD about 10:00 AM. It was not till 2:30 PM that the 149th Infantry was able to overcome the last ditch stubborn defense of the southern exits of MANSFIELD made by a hostile battalion of infantry with a battalion of field artillery. At 3:30 PM scout cars entered the town to the great confusion of fleeing enemy motor columns. Meanwhile, indications in the east half of the zone pointed to a withdrawal to the east towards the crossing of the RED RIVER at COUSHATTA. A message was received from Headquarters, 6th Cavalry, confirming this, by ordering the concentration of reconnaissance towards NABORTON.

When notification of the cessation of hostilities was received about 4:30 PM, 28th September, the 149th Infantry had consolidated its position in MANSFIELD and was advancing north on Hy. No. 145 towards HOLLY. The 152nd Infantry, leading the advance of the 76th Infantry Brigade of the 38th Division had entered MANSFIELD from the south. Leading elements of the 31st Division were pushing their attack on NABORTON. In the vicinity of MANSFIELD, the action had taken on the aspect of a pursuit, since the capture of the town in effect cut off hostile units still south of town on Hy. No. 171 and Hy. No. 1.

Concerning the action of the 28th of September in

this zone, General Easley, Commanding the 75th Infantry Brigade, said the following:

"The work of this troop (Scout Cars) in maintaining contact with hostile elements of the Second Army on our front when they began their withdrawal just south of PELICAN on the night of September 27th-28th was a big factor in our success the day of the 28th, at which time we advanced to a point two miles north of MANSFIELD, or a distance of approximately 18 miles, where the exercise ended."

In this maneuver, the IV Army Corps operated as an interior Corps with its flanks relatively secure. The 38th Division possessed no separate divisional reconnaissance unit of its own; the 31st Division did have a reconnaissance unit which it used to good advantage. It may seem, however, from this discussion, that under such circumstances, Corps Reconnaissance Regiment elements and Divisional Reconnaissance Units may mutually assist one another's efforts and actions.

There has never been any question as to the value of mechanized cavalry on distant reconnaissance missions. However, maneuver experiences and results also demonstrated the value of mechanized and motorized cavalry vehicles in the close contact phase. This was true even though these vehicles were operating in adverse terrain (bayou and swamp areas) in the performance of close and battle reconnaissance missions. These maneuvers in addition demonstrated the great value of mechanized cavalry to the Infantry Combat Team by assisting motorized and foot infantry forward in a rapidly moving situation.

107th Cavalry (H-M) in Louisiana: Horse elements reduced road-blocks so that motor elements could advance.

MECHANICAL COMPUTER For Demolition Charges*

By Captain David McCoach, III, Corps of Engineers

FOR many years, the theory of breaching by demolitions has been computed by a very learned formula involving a radius of rupture (R), a material factor (K), a placing factor (C), and a factor of ignorance (%). Placing these items together for any breaching problem, gives N (N the number of blocks of TNT) $= R^3KC + \%$.

To obtain the amount of TNT to destroy an object, it is necessary to cube some number, multiply it by another number taken from a material table, and multiply by C taken from an illustration, and depending upon whether the answer is more or less than a hundred blocks, add 10 or 25 per cent. Take for instance a 3-foot wall of dense concrete: K is found easily in the table of either 0.65 or 0.81; the chart in the manual gives 4.5 for a certain placing of the charge. Following to N, the answer is either 99 or 123 half-pound blocks of TNT. The solution is a simple and rapid calculation for a mathematician but not so rapid for men who have not had the background for such mental gymnastics.

A nomograph, which simplifies the computation of charges to some extent, is given in the demolition set and in the demolition manual. All that is needed for its use is a straight edge, a pin, a chart for K, an illustration for the method of placing, and two movements in the correct order. Of course, if the movements are performed out of order, the answer is definitely wrong. It is, however, very easy to do the two movements in the wrong order; also, a slight error in placing the pin on the index line gives a large error in the answer.

After patiently trying to teach demolition computation with the two methods offered in the field manual, it became apparent that a simpler method was essential to meet the requirements of modern combat engineers, since every squad now carries special demolition equipment and a small amount of explosive in the squad truck and every noncommissioned officer must be able to compute charges rapidly and accurately. A simple computer based on the principles of the slide rule was, therefore, conceived to do the computation of demolition problems in one operation; no slide rule computations were contemplated for craters since the Engineer Board has developed multiple charge craters using fixed depth and quantities of explosive to replace the old single-charge method.

Various charges were computed and plotted on a circular slide rule but discrepancies were noted throughout between the slide rule and the computed values of the various conditions. The computed values were, therefore, plotted on log-log graph paper; the result is shown in *Figure 1*, the dashed and zigzag line; the breaks are caused by the changes of K at 3 feet, 5 feet, and 7 feet, and of the change of the percentage factor at 99.99 to 100 blocks from 25 per cent to 10 per cent. There are, therefore, two answers at each of the above charges. Not knowing the correct answer, a line was drawn through the average trend of the computed value as shown by the solid line on *Figure 1*. The error induced is debatable; for dense concrete at 3 feet, the answer is 99 or 123 blocks of TNT; both answers may be obtained from the field manual method of computation. The slide rule gives an answer of 110 blocks of TNT. The average error introduced except when the wall is 20 feet thick, is about 7 per cent plus or minus. Very few people can guess the material or placing factors as close as 10 per cent; and most computations are used merely as a guide. The computator in the

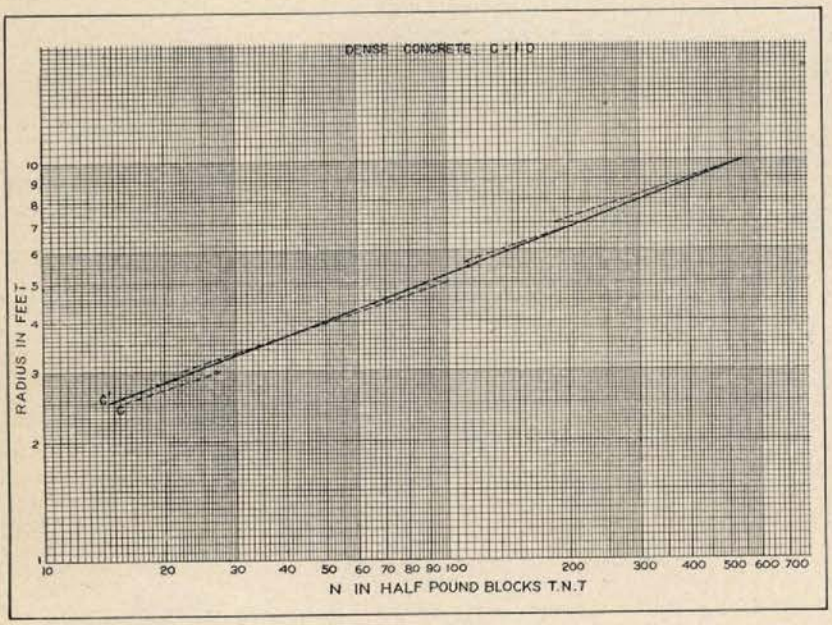


Figure 1

*Courtesy, *The Military Engineer*.

field usually adds a percentage for safety depending on the particular problem.

The circular slide rule *Figure* 2 is divided into quarters, one quarter showing the answer in terms of N (one-half pound blocks). The other three-quarters are for radii of rupture in concrete, good masonry and reinforced concrete. The window shows the radius of rupture for poor masonry. To solve a problem it is necessary only to pick up the correct quadrant for material, select a picture representing the placement of the charge, and set the index against the R in feet; the answer is given directly in the N quadrant, in half-pound blocks. Thus for a 3-foot wall for dense concrete placed as in the example computed above, the left hand quadrant is used, the placement picture (top left for $C = 4.5$) is selected and the index line followed around and set against the *Figure* 3 on the outside diameter. The answer is then found to be 110 blocks of TNT under the index line at the bottom of the chart. The answer may also be 330 half-pounds of gunpowder. (Conversion by the given ratio of 1:3 gives 333 half-pounds.)

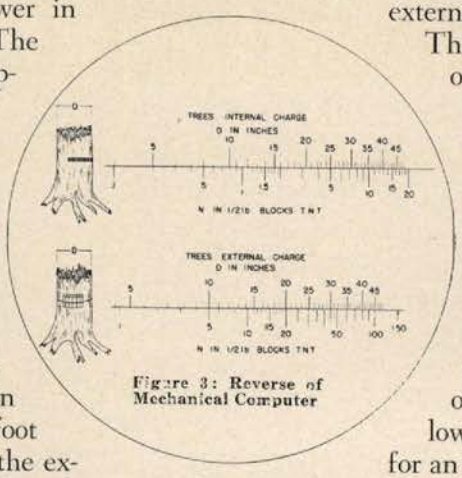


Figure 3: Reverse of Mechanical Computer

Eight different explosives may be used. To obtain the answer, select the index line for the explosive desired. This eliminates the necessity of multiplying N for TNT, by the reciprocal of the relative strength of the explosive used. For cutting timber and trees, the formulae given in the manual are $D^2/20$ and $D^2/125$ for external and internal charges, respectively. The solution of timber problems is given on the back of the slide rule. (*Figure* 3.) Pick the diameter on the top of the line chart and read the answer directly below the line in blocks of TNT. It is not necessary to use the formula unless timbers over 4 feet in diameter are to be cut. For instance, take a timber whose least diameter is 10 inches. For the internal charge find 10 inches on top of the line and the answer is found below the line to be 0.8 blocks of TNT, or for an external charge the answer is 5 blocks. This answer can be converted to other explosives on the breaching side of the rule by setting the TNT index on 5 blocks (the external charge problem) and reading the answer in other explosives under their respective index.

While some officers state that they do not use a formula since they have had enough experience in explosives to just look at the problem and solve it, not all of us are that fortunate. For the former, the slide rule can only serve as a check, but for the second group, it is hoped that this rule will increase the speed and accuracy of computations.

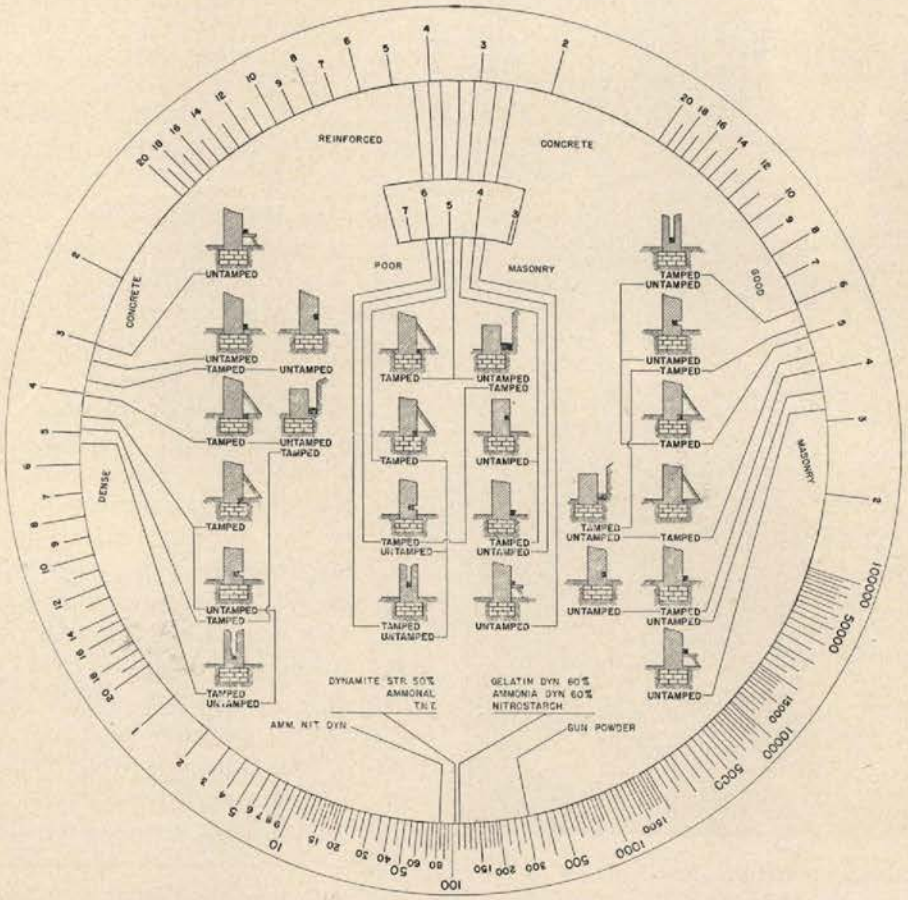


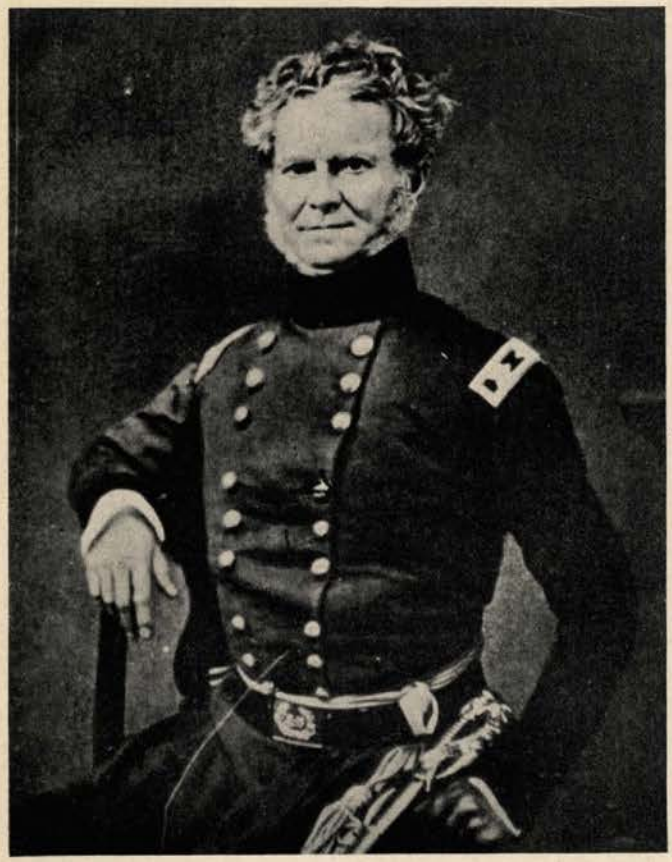
Figure 2: Mechanical Computer for Demolition Charges

The 2d Retraces Its Steps

By Lieutenant Harrison C. Frost, Jr., 2d Cavalry

THE SECOND CAVALRY returned from the 1941 Maneuvers to Camp Funston and its well-earned fifteen-day furlough in a gala mood. They had increased their military education, hardened their military frame, and acquitted themselves well. Second Army was pleased with the showing of the Second Cavalry Division. Division passed its laurels on to the Third Cavalry Brigade, and Brigade in turn complimented the Regiment and its squadrons and troops. And in addition another hash-mark had been added to the 105-year traditions of the Regiment, for it had marched, for a part of the way at least, in the hoof-prints made by the Second Dragoons on its famous march to the Mexican border 96 years before.

Following its successful operations against the Seminole Indians in Florida, the Second Dragoons was divided and moved to Fort Jessup, Louisiana, and Fort Ouachita, Arkansas, in 1842. Headquarters with Companies (as they were then known) B, C, D, E, F, H, and K were all eventually located at the former post, with Companies A, G, and I at the latter which is believed to have been at the confluence of the Ouachita River and Bartholemew Bayou. In 1842 this was frontier country. The following three years were spent in a strenuous schedule of training under the able leadership of Colonel David E. Twiggs, commanding, assisted by Captain William J. Hardee, executive officer, who had just returned from a tour of observation of European cavalry, and who supervised the tactical exercises and mounted drill of the Regiment. This was the same Hardee who was to become the famous lieutenant general in the Confederate forces.



Colonel David Emmanuel Twiggs, first Colonel of the Regiment, 1836-1843.

Rumors of all sorts, even as now, were plentiful in those years. Serious troubles with Mexico had been developing for some time, however, and by the year 1844 it became obvious that war with Mexico was a rumor which would become a fact. Furthermore, it seemed certain that the Dragoons being stationed closest to the scene of the troubles would be among the first to move in event of hostilities. Suddenly in May of that year, Brevet Brigadier General Zachary Taylor was dispatched to Fort Jessup by President Tyler to command an "Army of Observation" on the border. The seven companies of Dragoons were augmented by the Third Infantry and eight companies of the Fourth Infantry to form this force.

By February, 1845, resolutions were passed in the United States Senate offering annexation to the new Republic of Texas, and in June the Texas Congress accepted these resolutions. Mexico considered this an act of war. The United States countered by pressing the claims of Texas to the lands west and south to the Rio Grande as against Mexico's claim of the Nueces River.

On June 15, 1845, General Taylor was ordered to proceed with the infantry to New Orleans for embarkation to Texas. At the same time the Second Dragoons was ordered to march overland some five hundred miles to Corpus Christi, Texas, at the mouth of the Nueces River on the Gulf of Mexico. The continued high state of training and conditioning of the Regiment now stood it in good stead. Preparations, already well advanced, were rapidly brought to completion; supplies and equipment were replenished, and replacements of men and animals were made where necessary. This march, no short one for a unit three years at a permanent post, was to be made in the hottest time of the year. The route was a difficult one and there were many outside the Dragoons who thought that their arrival at Corpus Christ within six weeks as ordered was out of the question.

At 3:00 AM on July 25, 1845, Colonel David E. Twiggs led his regiment off the Fort Jessup parade ground and headed southwest on the dusty El Camino del Rey—the old Spanish "Highway of the King." The column of seven companies numbering about 500 men

and officers was closely followed by a train of sixty wagons of supplies and equipment, marching without distance. The regimental band, newly trained to play mounted, and drawn up to one side of the parade ground at the entrance to the enclosure, continued martial and popular airs until the last wagon had swung slowly onto the highway. The small band of troops, though large for 1845 and the frontier of Louisiana, made a striking appearance as they advanced across the parade and into the flare of torches and lanterns at the entrance. The flickering lights caught and reflected polished sabres and spurs and the bright metal parts on the carbines and horse pistols. Service uniforms, freshly cleaned and neat as though for a review, were colorful even in the half light with the dark blue jackets trimmed with yellow braid, sky-blue trousers wide-striped with yellow up the outside seam, and yellow-banded flat blue forage caps. Heads were high that night and the *esprit* of the regiment was visible in each erect well-seated trooper as his horse pranced by the band. They were off to Mexico!

At the small trading post where Many, Louisiana, now stands, the few residents turned out to wave a heartfelt farewell. A few miles more and they had crossed the Sabine River into Texas. Cordial Texas welcomes lay ahead at towns along the route and in bivouac, before they were to reach Corpus Christi on August 27th. They were twenty-six days en route and arrived in such good condition as to merit the special commendation of General Taylor. Late in the year they were joined by Companies A, G, and I which had also marched across country from Fort Ouachita in September.

The Dragoons were to march many another weary mile, however, before the peace of 1848, and to lose many of their number in battle and from disease. They were, too, to add the battle streamer honors of Palo Alto, Resaca de la Palma, Monterey, Buena Vista, Vera Cruz, Cerro Gordo, Contreras, Cherubusco, Molino del Rey, Tamaulipas, Nuevo Leon, New Mexico, and Chapultepec to the regimental standard; and finally as guard of honor to escort General Winfield Scott into the captured City of Mexico to the strains of "Hail Columbia" and "Yankee Doodle" played by their mounted band.

Frontier duty in the Indian country followed until 1861 and the Civil War when the Second Dragoons became the Second Regiment of Cavalry. After action through the war from Bull Run and Fort Donelson to Cedar Creek and Yellow Tavern the Regiment returned to frontier duty again in the west and northwest until the Spanish-American War. Here they saw service with the Santiago Expedition, at Porto Rico, the Cuban Occupation, and later put in two tours of duty in the Phillipines. Garrison duty and patrol work on the Mexican border followed. Then 1918, with the St. Mihiel and Meuse-Argonne, a squadron of the Second was the only American cavalry with the good fortune to remain mounted and reach the firing line. After service in the Army of Occupation, the Regiment at long last returned to Fort Riley for twenty-two years of a quiet and peaceful post.

At 3:00 AM on September 18, 1941, Lt. Col. John T. Cole, commanding, led the Second Cavalry out of its wooded bivouac two miles west of the site of old Fort Jessup, and headed southwest on the macadam surface of El Camino del Rey—otherwise known as U. S. Highway 6. This was no march to the aid of a friendly neighbor 500 miles away, but rather the approach to an attack directed between two Blue divisions only 10 miles south. There was no band; there were no lights, and there were no uniforms "freshly cleaned and neat as though for a review." On the 17th the Regiment had marched 25 miles over dusty, back country roads from the vicinity of Pleasant Hill and the red, rustlike dirt of Louisiana marked clothing and equipment. Only horses and weapons were clean. But spirits were high and the command marched forth with great anticipation of another crack at the Blues.

Following the course of the Second Dragoons into the outskirts of what is now the thriving town of Many, the Regiment headed due south over logging roads and covered trails, through the pitch darkness of woods,

Top—Dragoons Standard, 1845. *Bottom*—Captain May at Resaca de la Palma, 1846. Companies D and E, 2d Dragoons, charging Mexican batteries.

1—Colonel Cole. 2—2d Cavalry heavies go into action at Zwolle. 3—Watering near Fort Jessup, La. (El Camino del Rey). 4—Crossing the Red River near Coushatta, La. 5—Leaving bivouac at Creston, La.

completely blacked out. The objective was reached at dawn and the attack was launched on the left flank of the Second Cavalry Division, across swamps and wooded bayous into unknown country. By late afternoon, in conjunction with a squadron of the 14th Cavalry, the Second had captured a battalion of infantry and forced a Blue retirement to the west and south, losing only one troop in the fray. On the 19th the tide of battle took the Regiment northward through Many to the battle of Zwolle where the first phase of the G.H.Q. maneuvers ended.

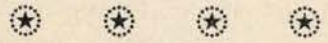
On the morning of the 22d of September the Regiment was again heading southwest on the route of the Dragoons—15 miles on El Camino del Rey—crossing the Sabine River into Texas, and continuing on to bivouac south of Milam. On the 23d an advance farther southward was made to a position below the town of Hemphill, Texas. From here the paths parted, for the next day saw the Second Cavalry start its phase of the Second Army withdrawal which was to end at Greenwood, Louisiana.

From the 2d of September the Regiment had been

In Louisiana: Ready for night operations —Photo by *Life Magazine*

on the march from Crossett in the southeast corner of Arkansas, southwest across Louisiana and into East Texas, effecting the crossing of the Ouachita, Red and Sabine Rivers, maneuvering constantly, and engaging in three major "battles." They had marched by day with temperatures above 100 and rolled out at night in cold, dewy bivouacs when the mercury touched below 50. They had trotted through dust, which rose in clouds to choke men and horses, and plodded knee deep through swampland where the going was too heavy to do else than lead. With little sleep when in contact with the enemy, and little food when supplies could not get through the mud of back-country roads, the Second found this to be a very real warfare, less only the bullets.

It should be remembered that the Second Cavalry in September, 1941, unlike the Dragoons of 1845, was composed of seventy-five per cent selectees—citizen soldiers for whose showing on these maneuvers there is nothing but the most profound respect from officers and men of the "old army." And so, today on the verge of a crisis which no one can foretell, perhaps the command and members of the oldest mounted regiment can, with pardonable pride, say that they too, like their predecessors of ninety-six years ago are "Always Ready."



Regimental Standards

It is interesting that between the dates of 1835 and 1886 the *field of the artillery standard was yellow;* since 1886 it has been scarlet. Prior to 1889 the *field* of the cavalry standard was *blue.*

Supply of a Horse Regiment

By S-4

Editor's Note: This is the sixth and last of a series of articles on this subject.

IN our previous issue we left S-4 at the command post of the First Squadron, where he had gone to make the arrangements necessary to care for the supply of that squadron and fit them into his plan for the supply of the regiment. Upon arrival at the command post he informs the squadron commander of all that he knows of the situation and regimental and brigade plans, being very careful to stick to facts and state only so much of either plan as he actually knows; he does not offer any surmises or gratuitous opinions; often commanders' plans go awry because some thoughtless staff officer assumes a lot more knowledge than he really possesses. He is careful to make sure that the squadron commander understands the instructions about rations and grain for the next day, thus insuring that this squadron will not be short a meal or feed in the event they do not see their kitchen trucks before the next evening.

Having finished his business with the squadron commander he then confers with the Squadron S-4. He changes the route for the squadron convoy; instead of having it proceed by its own previously designated route to the truckhead, S-4 decides that he wants to get his entire convoy under his own control at the earliest time possible. By doing this he will avoid the risk of lost routes, poor timing, and missed connections. He instructs S-4 to bring his convoy to the regimental train park, and designates on the map the route over which the forage trucks are now coming to the squadron. It would not be a bad idea to leave a man from one of the forage trucks to act as guide for the squadron convoy, or if time runs close to combine the squadron convoy with the empty forage trucks, the whole to return under charge of the transportation officer. He leaves the selection of the method to the Squadron S-4, to be made on the basis of time. He instructs Squadron S-4 that none of the loads on the trucks, cantle rolls, equipment, etc., will be dumped in the squadron area, but that instead, all trucks of the convoy will move with these loads. Why? Simply because he does not expect to get these trucks back into the forward areas before daylight. The ammunition trucks will be up before morning, but the kitchen trucks are to be grouped under brigade control; no telling when they may be released. And a dumped load under any but the most certain conditions is usually a "lost load." His last instructions cover the time the kitchen trucks which remain with the front line troops will be withdrawn, their route and point of assembly with the other front line troop kitchen trucks, to move to the brigade train park.

Regimental Plans

He then leaves the squadron to return to the regimental train park, going via the regimental command post again, where he learns there have been no further changes affecting him or his plans for the night. Before leaving the regimental command post he confers with S-3. He checks over the situation map to make sure of troop dispositions; discusses tomorrow's plans with S-3; informs him when he expects to get back with the ammunition trucks; in fact he goes over just about everything with S-3. The result is that each knows the others plans, and both knowing what the other is about, each will do a better job for the regimental commander than they otherwise could do. No watertight staff compartments in this regiment, but each staff officer playing his assignment on the team.

Arriving at the train park, it is a simple case of reloading the dumped loads when the trucks arrive, making sure all crews are on hand, informing the Supply Sergeant, Transportation Officer, and Maintenance Officer fully of all plans, getting supper, and departing for the truckhead when the trucks from the First Squadron arrive. S-4 leaves for the truckhead with twelve trucks instead of the fourteen on which he had originally planned. Of these, five are kitchen trucks and seven are combat. He also has the disabled headquarters troop truck in tow.

At the truckhead S-4 will receive his supplies in bulk. He trades empty gasoline and oil containers for full containers, services all his convoy trucks from gasoline at the truckhead so that when he leaves, all service tanks will be filled and he will have his complete allowance of full containers as well. He turns the disabled truck over to the officer in charge of the truckhead who will see that it is evacuated to the rear.

Loading

In loading his supplies he can take his choice; either break down into troop lots, or load in bulk. His trucks are all partially loaded with equipment and baggage; he has a little better than sixteen tons of rations, grain, gas and oil; eleven tons of hay; and about three truck loads of ammunition. Obviously he cannot haul all of it at one time. He does not have enough trucks to haul in one load even the most essential supplies if they are broken down into troop lots. He knows that all troops have sufficient rations and grain to include supper tomorrow, and that hay is not needed tonight. The truckhead officer advises him that extra ammunition trucks will not be attached to the regiment, therefore the problem of hauling this in his trucks confronts him. The practical solution is to so load his trucks that he can

move the most essential items up to the regimental area tonight, and the rest into an area where his men can break it down after they have had some rest.

S-4 decides to load the ammunition and some gasoline and oil on the ammunition trucks dividing the load among the seven, except for loading the machine-gun and special weapons troop trucks with their type of ammunition only. He then loads the rations and grain by bulk on the kitchen trucks, and as much of the balance of the gasoline and oil as these trucks can carry. The remainder of the gasoline and oil he loads on the ammunition trucks, to be dumped at the point where he will later divert the kitchen train from the ammunition train. Or if you prefer he can leave this additional supply of gasoline and oil on the ammunition train. He does not accept delivery of the hay which is in semi-trailers, and can be easily moved to the rear, or remain where it is until needed tomorrow. That is the problem of the officer in charge of the truckhead and Division G-4. S-4 did his part when he asked for permission to purchase hay for tonight, and G-4 should have sized up the situation and stopped shipment of hay to him. If S-4 accepts delivery he will have a heavy burden on his neck until the next night when he will want hay, but who can tell where the regiment will be then, and S-4 will be busy dumping loads, hauling hay, and reloading, at a time when his hands will most probably be very full, and he will want to save his men all the extra work possible. It is just as essential not to become overloaded with supplies which you are not equipped to handle as it is to obtain adequate supplies when you need them. The truckhead officer suggested that he dump the hay tonight at the truckhead and S-4 could get it tomorrow, but S-4 was not hooked by that one. The hay would have been his, and it would have been his responsibility to move. No different than accepting delivery, and S-4 definitely does not want the responsibility for that hay to be his until tomorrow night.

Delivery

Having completed loading S-4 gives instructions to the Transportation Officer and the Supply Sergeant before moving out in order to prevent delay or traffic jam at the point where the kitchen train will be diverted. The convoy marches with the ammunition train in the lead. At the diversion point the ammunition train continues on to the regimental area in charge of the transportation officer and S-4 conducts the kitchen train to the brigade train park. Upon arrival there he contacts the representative of Brigade S-4, or if not present, he selects his own area in which to park the kitchen train. He then instructs the Supply Sergeant to let the men rest until daylight, and then to break down the rations and grain into troop lots, and informs him of the time he expects the kitchen trucks of the front line troops to arrive at the park, directing him to send a guide to the diversion point on the road to conduct them into the park. S-4 then leaves for the regimental area.

Arriving in the regimental area its a simple case of making sure the ammunition trucks have been released to squadron and troop commanders; checking up to see that the kitchen trucks that remained with front line troops move to the brigade train park at the time designated in charge of the transportation officer, reporting to the regimental commander; checking with the maintenance officer to learn of any loss or damage to other vehicles; contacting S-3; getting some breakfast, and fortifying himself against another day which is bound to keep him fully occupied meeting every sort of situation in the most practical way in order to keep the regiment fully supplied, with ammunition principally, but with whatever else they need also. Did we hear someone say something about sleep?

Supply Mission

There are many times when S-4 may feel that he is not getting all the help he should have from higher echelons. The worst of it is, this often proves to be the case. Each commander and staff officers of a unit will exert himself to save his own men. This applies to service troops as well as combat units, though service elements realize more and more that their real mission is to SERVE. Supply, we understand, is a responsibility of command, and, to us, this means getting required supplies actually into the possession (hands) of the lower echelons for which any given higher echelon is responsible. For the division, to the regiments; for the regiment, to the troops; and for the troop commander, into the bellies of men and horses (assuming normal prehension), into tanks of vehicles, and up to gun positions. For each echelon this presents obstacles and difficulties which must be overcome if the responsibility is carried out to its fullest meaning. And there's the rub, the way we see it. Today the principle of supply is held to be complied with when you place supplies WITHIN REACH OF UNITS. By this is meant placing supplies within reach of the trains of the units. Lets see how this works out, and what might make it easier on the units.

Principles and Methods

Supplies for the division will usually be delivered to railheads by Army; sometimes to truckheads if rail is not available sufficiently advanced. In any event it will be the unusual case when the truck-haul for the division will be a long one—even the Cavalry Division. Except in the most extreme situation where the haul from Army railhead or truckhead to regimental areas is exceptionally long can we see any reason for Division to establish a truckhead for delivery to regimental trains. And when the distance from railhead to regimental areas is what we might call normal, anywhere from ten to twenty miles, Division is very apt to prescribe "Railhead Distribution," thus requiring regimental trains to make the haul from railhead to their own areas. In the first instance cited the divisional train and the regimental trains are both busy covering an extreme

CAMOUFLAGE?

1—Air observer spots supply train halted on the road. Excellent cover for vehicles on the left, no fence. 2—Old type rolling kitchen. Smoke plume is a sure give-a-way. 3—Who picked this spot? Cover near by.

distance. In the second instance the regimental trains only are busy. Granted, one transloading is saved but at the expense solely of the regiments.

When a regiment has been on the march, or in combat during the day the chances are more than even that the truck drivers have been on the move most of the time. And they can anticipate the same thing the next day, and the next. Life in the areas farther to the rear where the division trains generally are located, is not one of basking in the sunshine, but it is a lot less strenuous than following the regiment, or serving it during combat. Up there its a case of being up early in the morning (night) and working until well after dark in the evening doing the job of serving the troops with meals, ammunition and gas. Then why, except in extreme situations require the regimental truck drivers to "come and get it" besides? It usually means most of the night on the road for them.

The two methods of delivery of supplies to regiments have been illustrated in this series. The first night the regiment was out, division trains delivered supplies direct to the regimental area. The supplies were broken down and delivered to troops, and everyone, even S-4, could get some needed rest against a strenuous next day. Contrast this with the method followed in the last situation. No one in the regimental train will get much rest, if any. But the personnel of the division trains will fare pretty well in this respect. There will be situations when the latter method will have to be used, but generally speaking, we like a principle of supply which places supplies IN THE HANDS of lower echelons, rather than WITHIN REACH.

The same principle should be followed in the regiment. Obviously the lack of transportation may require otherwise, as in the initial plan of S-4 to require the First Squadron train to move to the truckhead for its supplies. But what would you think of S-4 if, when he purchased hay and grain he had required the First Squadron S-4 to send his trucks to haul his share? S-4 was able, by having a part delivered by the farmer, to use his own transportation to deliver hay and grain to the First Squadron directly. That was placing the supplies in the hands of the First Squadron, and not within their reach. Another feature which operates against this principle in the regiment is the lack of a labor pool at the disposal of S-4 with which to handle supplies. He must always call on the troops for details. It is the Table of Organization that is at fault here, and it cannot be helped.

There are troop commanders also who do not seem to have a complete understanding of their responsibilities for supply. We have seen instances when hay could not be delivered right under the horses muzzles by the trucks, but had to be unloaded some distance away. Because it is hard to handle or transport except in a vehicle, the horses went without. There is no excuse for that. Hay can be packed, even on a McClellan. Then there is the matter of hot meals. Every soldier is entitled to two hot meals every day under practically any condition. Surely, there are times when it just simply cannot be accomplished, but they do not obtain as often as the event does. In combat men get lost, and are late for meals, and generally it is because their responsible officers have not planned for guides and reliefs. When they do reach the kitchen it has closed shop, or what is left to eat is cold. How often have you eaten a cold breakfast, except possibly for a cup of hot coffee, because the outfit was marching early, or for any other reason which the cooks could use as an excuse for mopping up and loading early? The troop commander has not discharged his responsibility for supply, until every man and horse is well and properly fed, and in combat every weapon served with ammunition. He has plenty of assistants to aid him; supply and mess sergeants, platoon leaders, platoon sergeants, sergeant file closers, and squad leaders; and when all of them work at their jobs, you will see that well fed, willing, well disciplined, hard fighting troop with a morale that cannot be beaten, which is a pleasure to command, or have in your regiment.

Summary

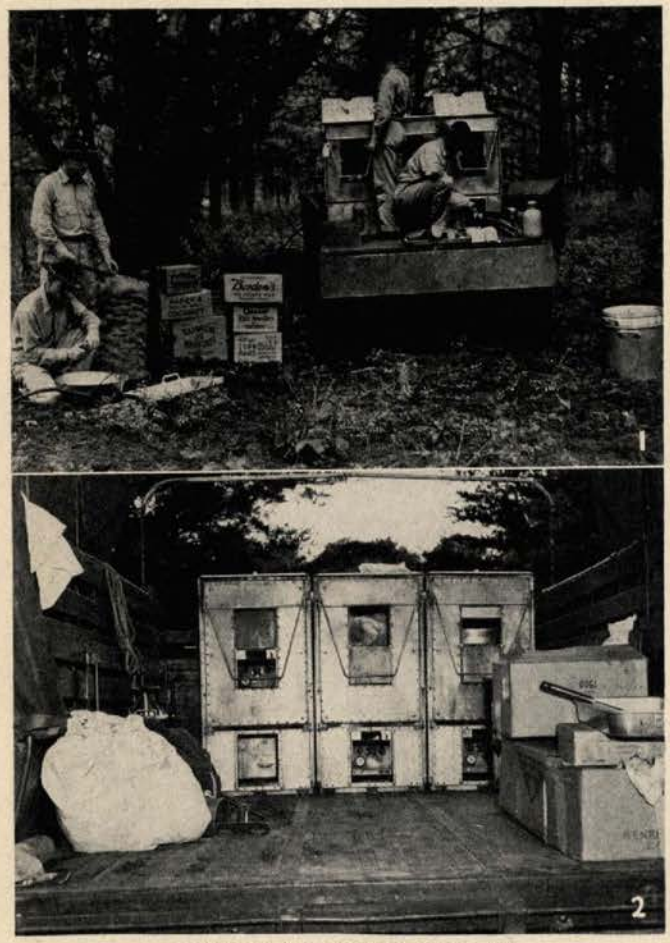
To get back to our Regimental S-4: He must be active, we have tried to show that he is busy ALL the time; he must have a thorough grounding in tactics, to be able to size up in advance the probable needs of the regiment; he must be helpful, particularly to the squadron supply officers; he must have experience, else the troops will be harassed, and half the time they will not have WHAT they should have WHEN and WHERE they should have it; he cannot be a believer in the fallacious theory that cavalry can get along anyhow, and that it's part of a cavalrymans life and his horse's lot to go hungry half the time, or more; and above all he must be PRACTICAL, it's the PRACTICAL solution that gets results in supply. S-4 MUST BE A REAL "GO-GETTER."

We are sure that all regimental commanders know what a good supply officer should be, and how much the success of the regiment depends on the supply officer. And they know also that supply duty does not have the romance of "command." All the more reason for picking the right man for the job, so this one question: Why do so many regimental commanders often assign a junior officer, with little or no training, experience, or practical knowledge, to duty as supply officer? It is not that they do not have older and more experienced officers available, particularly in peacetime; we have been in regiments where there were as many as three surplus field officers, and still a lieutenant with three or even less service was the supply officer. And we have seen other regiments where the same system was in effect. It is not fair to the junior officer. and it isn't fair to the troops either. Boiled down, it isn't fair to the regimental commander because "SUPPLY IS A RESPONSIBILITY OF COMMAND."

KITCHEN TRUCKS

*By Major M. H. Matteson, Cavalry**

EDITOR'S NOTE: *It is clearly obvious that mechanized cavalry units must have kitchen trucks. It is believed, therefore, that the time has arrived when kitchen trucks should be standardized by the Quartermaster General and treated as a complete unit provided with the necessary and desirable factory built-in fixtures. The arrangement illustrated in our July-August, 1941, issue of* The CAVALRY JOURNAL *and the truck here illustrated could well serve as a basis for a satisfactory model.*



GASOLINE FIELD RANGE

1—A makeshift kitchen truck showing need for standardization. 2—A kitchen truck at its worst.

A GOOD SOLDIER can always march another mile and lose another hour of sleep. With a cup of coffee under his belt, hardship becomes a trifle and with hot food added, his endurance increases without limit.

The pictures on page 89 show a kitchen built into a 2½-ton truck by the Seventh Reconnaissance Troop. There is nothing shown that has not been tried by some other Troop Commander. Neither is the truck the final answer. The one shown, however, has stood the rigors of several maneuvers.

A 2½-ton truck is authorized by T/BA to carry the kitchen and crew for a reconnaissance troop. This has been found insufficient. To supplement the shortage, one, two, or three one-ton trailers are borrowed for a maneuver from units not participating. One is always hauled by the kitchen truck, the second by the combat truck and the third, if needed, is towed behind a scout car.

A third trailer was used on the Fourth Army Maneuvers in Washington. It was hauled behind a scout car of a detached platoon and was loaded with rations, water cans and a pack kitchen. This platoon functioned alone for four days at a time, without replenishing rations.

The kitchen truck equipment includes the following:

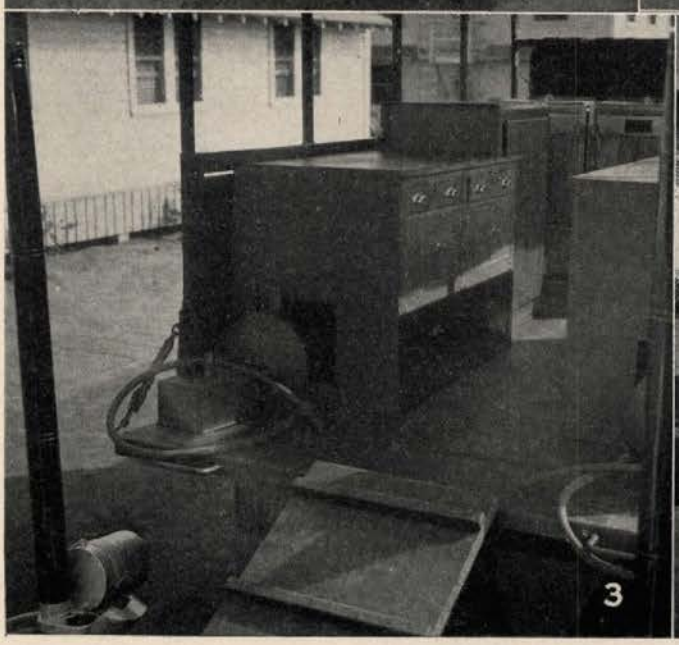
a. Two cabinets.
b. Ice chest.
c. Two water tanks.
d. Three ranges.
e. Two hot water heaters.
f. A heavy oak-topped table with demountable legs.
g. A gas unit for coffee.
h. Three containers, hot food (each with four pans of 7½-quart capacity).
i. Three containers, hot liquid, 3 gallons each.
j. A ramp.

The cabinets were built on a pine framework with plyboard fronts and masonite tops. The ice chest has a capacity of seventy-five pounds. It is used to cool butter and small quantities of meat. A better chest would have been one with a top opening and finished so that the top formed an extension of the cabinet. The water tanks are the standard forty-gallon heater type. The left tank was shortened by cutting an eight-inch section out of the middle. Two-inch filler pipes with plugs were set into each tank at the top rear. The ranges can be removed by turning them on a side and sliding them over the right table. The hot water heaters were purchased from the Hartung Heater Company, Des Moines, Iowa, at a cost of $17.00 each. The heater is called a Gold Medal Heater for a 33-gallon G.I. can. The table was made of a layer of seasoned oak on a pine base, glued and screwed together. The legs screw into fittings. The food and liquid containers were pur-

*Commanding 7th Reconnaissance Troop, Fort Ord, California.

chased from the Vacuum Can Company, Chicago, Illinois, at a cost of $62.00 each for the food containers and $30.00 each for the three-gallon jugs. The bows of the truck were raised to give a center head clearance of 6 feet 2 inches. The front and sides of the truck were boarded up. In movement, the front curtain is rolled to prevent suction of dust into the rear of the truck. The ramp as shown is to be improved by covering it with old fire hose laid crosswise and overlapping, like shingles on a roof. Each water tank is held in place by two iron bands bolted through the truck bed.

The advantages of a kitchen installation, such as shown, are self evident. Ranges are removed only for cleaning. The equipment can be packed and moved on short notice. The hot water heaters can boil fifty gallons of water in thirty minutes, allowing a constant supply without using the coffee heater unit. The hot food and liquid containers are expensive but worth what they cost. They are rugged and practically indestructible. Faucets should be purchased for each jug, to prevent spilling. The faucet, being breakable should be carried separately.



1—Arrangement within the truck. Ice chest is being changed and rope shown has been replaced by a wide leather strap to hold door closed. 2—The oak-topped table. Fittings similar to the feet, are screwed into the underside of the table. Table is carried in a trailer. 3—The cabinet construction. Door on left clears ice chest by one inch. Square steel box on tail-gate is a funnel for filling water tanks. Note canvas shield behind the ranges to prevent drafts. Space above canvas is left open during movement to prevent dust being sucked into rear of truck. 4—Shows 3-gallon hot liquid containers. Gold Medal heater installed in a 33-gallon G. I. can and the hot food containers. The ramp has two hooks in the top end which fits into slits in the tail-gate. The box at the end prevents the ramp being too steep.

Scout Car Command Post

By Lieutenant Charles Yon, 11th Cavalry

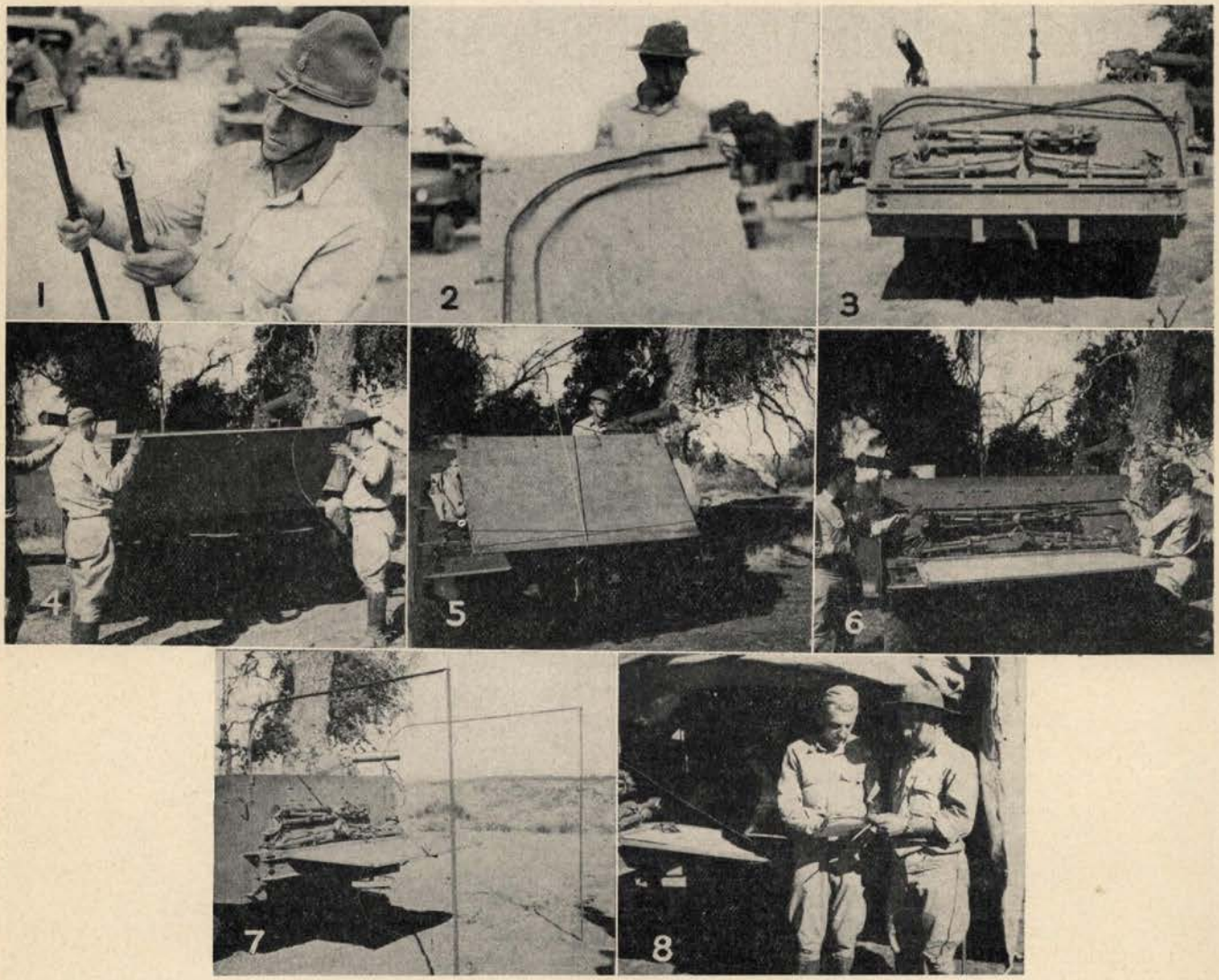
UNLOADING the field desk from the scout car, model M-301, opening it on the ground, spreading the situation map on our knees and saying "This is the Regimental Command Post" wasn't very satisfactory.

It didn't afford camouflage from aerial attack. There was no privacy. It didn't protect from the sun or the wind or rain. It certainly was uncomfortable.

In devising a contraption to act as a Regimental Command Post attachment to the scout car we had to remember that the vehicle is ordnance property and that regulations prohibit any alterations on ordnance property.

The Map Table

Over the top of the rear bumper and under the shelf upon which rests the gun mounts of the automatic weapons there is a little space. It is too narrow and too divided by braces to slip the edge of a table into it. But it will accommodate metal catches and upon this slender accommodation we began building our command post. To a three-feet-by-five-feet piece of five-ply board we



1—On the bottom of the piece of angle rod held in the trooper's right hand is the base plate which sits on the ground and holds up the canvas. On the bottom of the piece the soldier holds in his left hand is seen the little screw-rod which goes through the braces and the cover, much the same as the nail on the tent pole of a pup tent goes through each of the shelter halves. 2—These are the braces which extend from the brace-uprights to the scout car. The background for this photo is the improvised desk. 3—This is how the braces are attached to the car when not in use. 4—After the braces are put on the scout car, the canvas is put next to them, and the desk attached thus. 5—Packed and ready to go. Note that the compactness of the pack leaves free range for the machine guns. 6—Arriving at the command post site, the desk is first put in place. 7—The command post before the overhead braces and canvas are attached. 8—A message is received at the command post. The canvas was drawn aside for this photo.

added four metal catches of inch-by-quarter-inch strap iron. The ends of these are bent to a half-moon shape so that they may be fastened securely over the top of the rear bumper, under the gun mount shelf. These catches rest upon the rear bumper so solidly that the piece of ply board (which you may now regard as a map table) is ready for use. To fortify it, we employ wires which are attached to the front two corners of the map table and inside the rear corners of the scout car.

The field desk may be opened and placed under the map table where it will be accessible without being in anyone's way. Now, except for protection and security, the command post is ready to function.

The Angle Irons

A tent-like complement to the scout car is erected using I-C'd canvas and angle iron. To the upright end of an inch-by-inch, by one-quarter-guage angle iron was brazed a piece of flat strap iron one-inch by quarter-inch by twelve inches with an overlay weld of four inches. This piece of flat strap iron, inserted into the top tie-down clips on each side, and a length of upright angle iron (the same size, but six and a half feet long with round pins brazed on the end), furnish the support for the tarpaulin's rear portion. These two rear supports are held rigidly by a straight piece of angle iron with holes on each end to fit over the two pins in the supports. The eye on a guy rope fits over the pin and is pulled tight on either side as supplementary supports.

Packing the Command Post

This improvised command post may be packed, unpacked, assembled or dismantled quickly and easily. The accompanying photographs illustrate how snugly the contrivance fits on the rear end of the scout car, without any part of it overlapping either side. After the rear supports are rolled within the tarpaulin, the bundle is placed across the rear shelf against the gun mounts, and lashed by two straps. This bundle acts as a cushion for the map table which is folded over it, eliminating vibration.

Camouflage

In our present desert camp, the khaki colored tarpaulin against the drab sandy terrain is camouflage enough. When we move to our Camp Lockett base we will probably paint the tarpaulin to conform with the greener country. Too, the paint will serve to make the tarpaulin opaque against the scout car's emergency light which we extend to the command post for night operations.

History

Popular knowledge of history, I believe, is largely based on information derived from school text-books, and unfortunately these sources often tell only a portion of the truth with regard to our war experiences. Historians have been inclined to record the victories and gloss over the mistakes and wasteful sacrifices. Cause and effect have been, to an important extent, ignored. Few Americans learn that we enrolled nearly 400,000 men in the Revolutionary War to defeat an enemy that numbered less than 45,000, or that we employed half a million in 1812 against an opponent whose strength never exceeded 16,000 at any one place, and fewer still have learned why these overwhelming numbers were so ineffective. The War between the States pointed numerous lessons for our future protection, yet seldom has a nation entered a war so completely unprepared, and yet so boastfully, as did the United States in 1898. Veterans of the World War often seem to overlook the fact that almost a year and a half elapsed after the declaration of war before we could bring a field army into being and even then its weapons, ammunition and other material were provided by our Allies. And many of them seem unaware of the fact that the partially trained state of our troops proved a costly and tragic business despite the eventual success.—*General George C. Marshall, Chief of Staff of the United States Army.*

The 6th Reconnaissance Troop Maneuvers

By Lieutenant Raymond B. Torkildson, Cavalry

SHORT in equipment and trained personnel with little field experience of our own or of similar troops to rely upon but with an eagerness to learn as many do's and dont's as possible, the Sixth Reconnaissance Troop cast its lot with the Red forces in the first GHQ maneuvers in Louisiana. Having been in command of one of the three reconnaissance platoons, my experiences related directly to the problems of the platoon in the field. My remarks in this article, therefore, will primarily concern the platoon.

Missions

Since the MISSION is always of primary importance, I was interested in learning what missions my platoon was best fitted for. One observation I made quickly: that the Staff was having a hard time making up its mind what we were created for. For example, while on a reconnaissance mission to find the Blue main body and determine its flanks, I received this radio message: "Two Blue scout cars reported at bridge two miles south of A, Get in and destroy them." I was perplexed, not so much because I had reported the Blues myself several hours earlier but rather because it called for action contrary to the only SOP we had had time to adopt. I had frequently been cautioned that we never fired on the enemy unless necessary to avoid capture or to accomplish our reconnaissance mission. If there was any word every man in the troop had been taught to know the meaning of, it was "stealth." Destroying two scout cars seemed to call for something more than stealth. On one occasion my platoon was given the mission of preceding a combat team by no more than one mile. We were obviously being used as a sort of auxiliary advanced guard, tied down to the rate of march of foot troops. My mobility and my 193 radio set—perfect for long range reconnaissance—had been entirely overlooked. I also had an experience with the other extreme, having been given a mission for a single day's reconnaissance covering a general route of about four hundred miles. No enemy had been reported in this wide sector. Yet, twice in three days I took my four scout cars over this long route, which might better have been patrolled by an officer patrol in "jeeps" saving my platoon for more suitable missions. Since radio communication is impossible at such distance, I was compelled to rely upon public telephone communication, which would have been equally available to an officer patrol. Somewhere between these two extremes, lies the most satisfactory zone for a reconnaissance platoon. My platoon was of most use to the division when it operated fifteen to twenty-five miles in front of the division. Moving aggressively forward at this distance but avoiding engagements with enemy reconnaissance and security patrols whenever possible, we had a fair chance of getting through to the main body of the Blues and reporting back the information in time to be extremely useful. Though my platoon was never in a position to fight a delaying action, observation of Blues on that mission in Corps maneuvers impressed me with the effectiveness of scout cars so employed. I saw one platoon of the 107th Cavalry cause a combat team commander a lot of worry one day until the platoon leader overplayed his hand by remaining in one position too long, giving the infantry time to move up two 37-mm. guns which made quick work of two scout cars. I am still convinced, however, that the "Reconnaissance" in our name is no misnomer and that it should be taken more seriously by the brass hats.

Operations

The disposition and control of my vehicles as well as the method of advancing in tactical situations caused me considerable trouble. I soon discovered that in order to keep up the rate of march expected of my platoon, I would have to make a modification of the old method of advancing by bounds. By this method the second vehicle moved to the position of the point vehicle before the latter moved on to its new position. In order to speed up the movement, my point vehicle moved on as soon as a reconnaissance to the front and flanks had been made, without waiting for the second vehicle to move up. Then, on signal from the point, the second vehicle moved to the new position as fast as practicable. As this method kept the point vehicle one hundred to five hundred yards ahead of the command scout car, the point presented a special problem. I used a jeep, with a driver and two riflemen as a point. It soon became clear that these three men should be trained scouts and among the most reliable men in the platoon. In order to properly control the point I found it necessary to supply it with the best maps available and to require that one rifleman be on constant alert to the rear for signals from the command scout car. A few simple arm signals were helpful for this purpose. Having my scout car declared out of action twice because of the failure of the point to make a thorough reconnaissance before signalling "all clear" was enough to convince me that carefully picked men only should be entrusted with that responsibility.

The primary function of my platoon was to get information of enemy forces. Information is useless if we keep it to ourselves; it must get back—and get back in *time* to be of use. Normally the only satisfactory means at my disposal was my 193 radio; if my radio was out, my platoon was out of action for all practical purposes. Rarely was I able to depend upon public telephone communication; moreover, motorcyles proved unsatisfactory due to the long distances, bad roads, danger of capture, and the difficulty which they had in finding the message center. The use of code and the need of operating the radios while the scout cars are in motion requires highly trained operators. Long hours and the increased work of decoding and encoding messages require a capable assistant operator who is able to handle communications alone in the event the head operator is declared a casualty. Since a reconnaissance platoon is always operating during fighting time, messages must be cleared as rapidly as possible. I found the CD 93 to be too slow. A random grid system using keypoints, however, simplified the use of the cipher device by shortening messages considerably. A simplified code system within the troop would expedite messages even more. Although authorized one radio per scout car, my platoon went through maneuvers with one radio. I found it extremely difficult to operate by sections with only one radio. The only solution was to maintain contact between sections with jeeps or motorcycles, and in case these failed, certain assembly points were designated. In that way the section without a radio was kept in relatively close contact with the troop CP. In order to operate effectively, however, one radio per section should be the minimum.

Administration

When a unit operates as far from the Troop CP as a reconnaissance platoon normally does, keeping the men properly fed is a difficult problem. This is particularly true when the platoon is on both day and night missions, which was the case of my platoon during a part of the maneuvers. Even though the normal procedure is to call the platoons into the CP after dark for chow, it is a wise policy to carry "C" rations in the cars, as the platoon often gets too far from the CP to return for mess. The Sixth Reconnaissance Troop adopted the policy of feeding all platoons two hot meals per day. With the platoons operating in a wide sector this was no easy task; for example, on one occasion the kitchen truck traveled over one hundred miles to feed the troop a hot meal. It was found to be more satisfactory, however, to call the platoons into the forward echelon of the CP for mess after dark and to send them out again with a hot meal before dawn.

Maintenance requirements closely paralleled those of feeding. We found that pulling the platoons in as stated above to be the best solution to the problem. Because of the great number of miles of rough terrain over which the scout cars are frequently compelled to travel, the maintenance crew must constantly be on the job. Scout cars take a rough beating and consequently require frequent inspections and skilful maintenance by the drivers as well as by the maintenance crew. I found that drivers who are on the job can do a lot to keep their cars rolling as well as to save the overworked grease monkeys hours of work under the stars. With the scout cars averaging 4,000 miles during the Louisiana maneuvers, a remarkably small amount of maintenance was required.

Back again in garrison, we are much the wiser for our experience. Though short two of our problem children, i.e., the motorcycles; our scout cars, guns, and rifles came back looking better than when we moved out. Having had our training period interrupted by maneuvers, we are now again able to resume that training with a much clearer conception of actual field conditions by which to be guided in the future.

Sporting Spirit

". . . The flame of the sporting spirit must be applied to the training of troops. We must put to good use the eager strength and skill exerted in so many fields of activity, the desire to excel which is so dear to the young, the fame with which public opinion endows champions; in short, the immense expenditure of energy and enthusiasm allocated by our era to physical effort and competition. Essentially, nothing lends itself better to the taste for sport than a military career. There is no single military operation which does not call for skill, energy and self-control. There is no single warlike action which is not a collective test and does not demand the concerted action of well-trained teams."—*General Charles de Gaulle, in 1934; Toward a Professional Army.*

Radio in the 6th Reconnaissance Troop

By Lieutenant Robert A. Marshall and Sergeant Cornelius P. Steele

COMMUNICATION is the vital element in the completion of a mission by the Reconnaissance Troop. Handicapped as we were in the recent Louisiana maneuvers, communication was carried on by the use of substitutes for the G. I. equivalent in many instances. The shielding on the M3A1 Scout Car is notorious for its short life. The shielding on our cars was deteriorated before a lapse of six months. To overcome this difficulty without new shielding, regular auto suppressors were installed in the coil lead on the distributor. This does not cut the motor noise on the last four bands of the BC-312-D receiver, however this organization does not use these bands and the noise is very effectively eliminated on the bands covering 1500Kc to 5000Kc.

Cabinets for these sets (SCR-193-D) were not available for issue to this organization before the GHQ maneuvers in La. and wooden cabinets were built by the troop to house the component parts of the set. These cabinets showed very little wear and were still as solid as the day they were installed when we returned from the maneuver.

The troop was forced to make the maneuver with only four radios, so we used one radio set in the Commanding Officer's car and one in the Platoon Leader's car in each of the platoons. This arrangement requires an experienced operator in the Commanding Officers car as the station there must work schedules with division and the platoons on a prearranged time schedule. As division had no extra set to work us at at times this arrangement was followed. If division had the extra set we would work all five stations in the same net and the platoons would send the information to division direct and thereby speeding up the handling the information for division. The use of prearranged schedule requires changing of frequency every half hour. Using this method, over 80 messages were handled in about five hours.

Maintaining continuous radio communication in the field presents wide opportunities for experiment. This organization carried two fifty foot lengths of antenna in the Hq. Platoon radio car and one fifty foot length in each of the other platoon radio cars. These proved invaluable when distances too great for the vertical antenna to span were encountered. Considerable time was spent in testing different antenna systems for auxilliary use on the SCR-193-D. The counterpoise was eliminated because the gain in signal strength did not warrant the trouble caused by carrying it. The fifty foot antenna when thrown over a tree so as to be almost vertical proved to be the best. Also by using extra MS-53 the height of the regular antenna was extended to almost forty feet. This necessitates guying to prevent the antenna from laying down from its own weight. Distances of 110 miles airline were covered during the last phase of the GHQ maneuvers and continuous communication was carried on over this distance.

During the first phase of GHQ maneuvers we were on a relatively high frequency. Using frequencies of the eighty meter amateur radio "ham" band, interference was so great, communication was impossible at times. This band of frequencies is mainly useful to the army during daylight hours as some fifty thousand amateurs jam it to capacity at night. In one phase of the maneuvers it was impossible to work our platoon radio set only ten miles distant, but by relaying through ham stations W5EN and W51ZU in Dallas, Texas, some five hundred miles away, messages were exchanged with our platoon.

By the use of two frequencies our interference was finally cut to the minimum. We used a low frequency during the night and changed to the high frequencies during the day. We consistently worked eighty to ninety miles during the first phase of the GHQ maneuvers and on the trip to Louisiana with stations moving.

"The Cavalry Board invites any individual, whether or not a cavalryman, to submit for consideration constructive suggestions or ideas relating to new equipment, improvement of standard equipment, or to any problem or project under study by the Board. The Board will also welcome suggestions as to new problems that may properly be considered. Communications should be addressed to the President, Cavalry Board, Fort Riley, Kansas."

NONCOM QUIZ*

Explanation

The subject matter of this test is COMBAT ORDERS for commanders of small cavalry units.

The questions are asked in true or false style. Underline the appropriate word indicating whether you think that the statement is true or false.

You can check your answers against the solutions which appear on page 96.

Questions

1. When a platoon commander decides to issue his instructions in the form of a "complete" oral order, all of the squad leaders, including the leader of any attached machine gun unit, should be present.

True False

2. A commander uses fragmentary orders when there is not sufficient time to issue a complete order.

True False

3. Fragmentary orders are always issued orally.

True False

4. In combat, platoon commanders usually receive their orders from their squadron commander.

True False

5. A good order should tell subordinate commanders *what* to do *and how* to do it.

True False

6. Indicate by underlining the items listed below, those which must be *decided* and ordered by the *leader of a horse patrol.*

a. Strength of the patrol.
b. Formation to adopt.
c. Hour to start.
d. Where to send information.
e. Where the second-in-command will ride.
f. Who will observe and reconnoiter to right, left, etc.
g. Mission of the patrol.

7. In the message below, errors and omissions are indicated by some or all of the numbers thereon. What are these errors or omissions?

8. A rifle platoon commander issues the following order to his platoon (and attachments) but he does *not* issue it in the sequence shown.

Number each of the following statements so the order will be in the sequence you consider correct:

No.

———"This platoon with light-machine-gun squad attached is the advance party and will precede the support by not less than 600 yards.

———Our regiment marches at once on Manhattan via U. S. Highway 40, rate of march 5½ miles per hour. Our troop with attached machine guns is the advance guard.

———Remainder of platoon, column of twos in order of march: rifle squads, light-machine-gun squad.

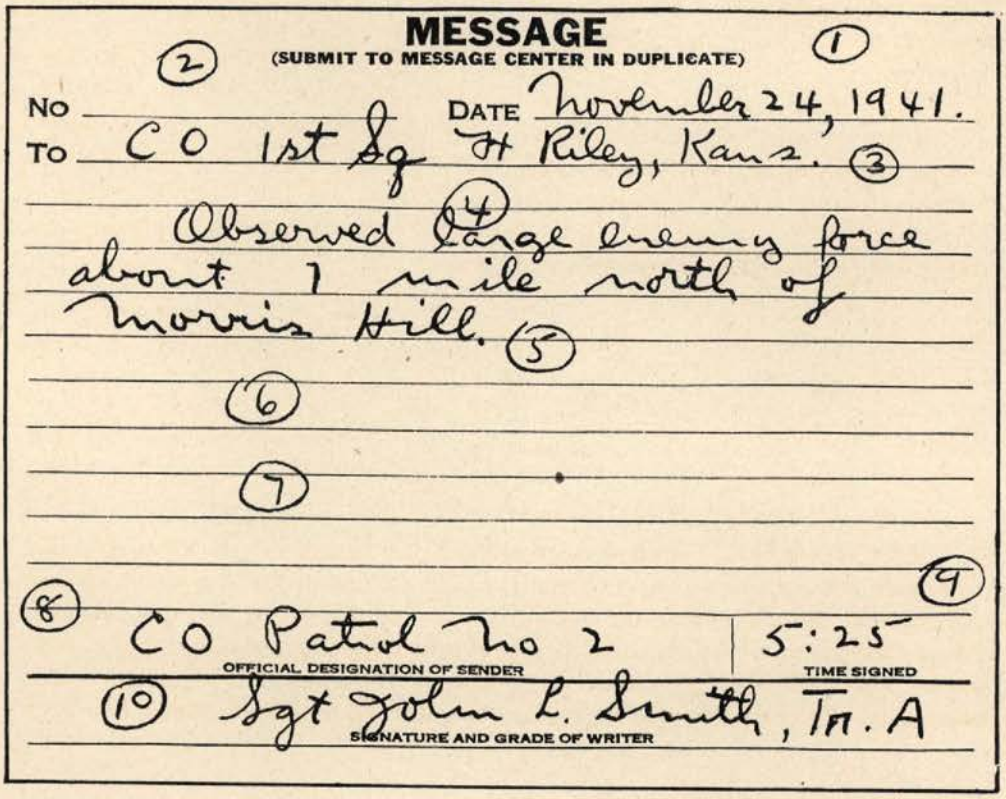
———Small hostile infantry forces are reported to be operating about ten miles north of Fort Riley.

———The first squad, Corporal A commanding, will be the point and will precede the platoon by not less than 300 yards.

———Are there any questions?

———I shall be at the head of the platoon."

*Prepared under the direction of The Department of Tactics, The Cavalry School.



The 26th Cavalry (PS)

By Captain H. J. Fleeger, 26th Cavalry★

HERE in Luzon, we are glad to see the end of the typhoon and rainy season of July, August, and September. However, in spite of torrential rains during parts of that period, the regiment accomplished a great deal. Schools for both enlisted men and officers were continuous, with special courses for cadres who are now assisting in the partial mobilization of the Philippine Army. Tactical training included a series of controlled tests for platoons and troops—which added enthusiasm to the program and provided valuable instruction for newly-arrived Reserve officers.

The coming months are usually dry and cool—the extreme heat not arriving until about February. Consequently all echelons are swinging into the routine of range firing, practice marching for condition, and Squadron and Regimental tactical problems. It is expected that the regiment will hold field exercises late in October, to be followed by Division and Department maneuvers. Every effort is being made to harden men and animals for immediate field service and to perfect the details of supply, communication, etc.

The Regiment celebrated its Organization Day October 1st; the 26th Cavalry having been formed on that day 19 years ago. On October 1st the Regiment attended mass at 6:00 AM, on the baseball diamond, and the usual regimental ceremony was held at 8:00 AM. It included invocation by the Chaplain, brief regimental history by Captain Fleeger, a short address by the Regimental Commander, Colonel Clinton A. Pierce, and benediction by the Chaplain. All troops had appropriate dinners in the troop messes. Troops G and B held dances in their barracks and NCO's had an evening party at the NCO Club. Bowling was the only sport activity because of rain. At 5:15 PM all officers assembled at the Club for an officers' party.

Horse shows have been curtailed because of training requirements and the rains but an informal show was completed in October.

Headquarters and Service Troop won the Regimental Bowling Championship—both duck and ten pins. The deciding game, against Troop G, was a close event, Troop G in the second game registering 1,026 which broke the previous regimental record of 1,009. The two teams played an exhibition game on Organization Day, October 1st, and Troop G was the winner, the prize being two cases of beer from the Headquarters and Service Troop team.

★Adjutant.

NONCOM QUIZ SOLUTIONS

1. True.
2. True.
3. False.
4. False.
5. False.
6. *b. e. f.*
7. (1) Date should be written, 24 Nov 41.
   (2) What is serial number of message?
   (3) Location of 1st Sq should be omitted as this might be of value to enemy if message fell into his hands.
   (4) How large is the force? Are they cavalry, infantry, etc? What are they doing, marching, in position, etc? If marching, in which direction?
   (5) Names of places should be printed in capital letters.
   (6) What is present location of patrol?
   (7) What will patrol leader do? Remain in observation, continue on mission, etc?
   (8) Designation should be: Leader, Patrol No. 2.
   (9) Time should be: 5:25 AM or 5:25 PM.
   (10) Signature and grade should be written: Smith, Sgt.
8. 3. 2. 5. 1. 4. 7. 6.

Has Grown Soft

Army officers, recently delving into official records of the Oregon Trail days, came across this "General Order No. 2," issued October 25, 1842, at Fort Riley, Kansas:

"First. Members of this command will, when shooting at buffaloes on the parade ground, be careful not to fire in the direction of the Commanding Officer's quarters.

"Second. The troop officer having the best trained remount for this year will be awarded one barrel of rye whisky.

"Third. Student officers will discontinue the practice of roping and riding buffaloes.

"Fourth. Attention of all officers is called to Paragraph 107, Army Regulations, in which it provides under uniform regulation that all officers will wear beards."

"The Army," sighed one officer, "has grown soft."

C.R.T.C. Weapons Training

By Major P. M. Martin, Cavalry*

THE Weapons Department of the Cavalry Replacement Training Center, Fort Riley, Kansas, has been a most interesting development and I feel that the experience gained should be shared with the other officers of our Arm. The birth took place at Camp Whitside in January, 1941, with the assignment of myself as Chief of the Department, coming from the Weapons Department of the Cavalry School. Master Sergeant Grider was the next assigned from the 14th Cavalry, then Technical Sergeant Taff from the 2nd Cavalry. The following Officers were assigned to the Weapons Department about January 15, 1941: Major F. Streicher, Major F. T. Manross, Captain G. Harrison, Captain H. F. Lovell, Captain W. S. Phinney, Captain D. L. Babcock, Captain M. C. Engel, Captain R. T. Boyle, Captain U. George, Lieutenant E. A. Maher, Lieutenant G. E. Davisson, Lieutenant R. L. Smith, Lieutenant K. A. King, Lieutenant R. Garrison, Lieutenant E. G. Buck, Lieutenant N. W. Crew, Lieutenant A. C. Hutcherson, Lieutenant B. Campbell, and Lieutenant H. J. Garrett. Since these assignments very few changes have been made. Losses: Captains George and Phinney, and Lieutenant Campbell. Gains: Majors Wallace and Nolte, and Captain Hayward.

The Commissioned Instructors were given a one months refresher course in all the Cavalry Weapons during the introductory period at Camp Whitside, thus a very firm foundation was laid for the standardization of the instruction. This course included Springfield and M-1 Rifle, mechanical training, preliminary marksmanship, and range practice; Revolver, Automatic Pistol and Cal. 30 Browning Machine Gun both light and heavy; 37-mm. Antitank Gun, 81-mm. Mortar, Cal. .45 Thompson Sub-Machine Gun, and Cal. 50 Machine Gun; some theory of fire, and gun drill; in fact the course given was very nearly the weapons course at the Cavalry School.

The Cadre of enlisted instructors were next to arrive, and were given a three weeks course in the above subjects by the Commissioned Instructors. This was a real challenge to the Reserve Officer's ability, as many of the older non-commissioned officers had years of experience with weapons. All were imbued with the desirability of a high standard of fundamental training, leaving the advance work for later. A very definite objective was gained in building a team of Commissioned and Enlisted Instructors and integrating them with the Squadron Basic Training Cadre.

The next phase was a more practical one, that of cleaning up our matériel and sighting in the M-1 Rifles. Many of the reserve officers and some of the enlisted cadre had never fired the M-1 rifle, therefore this was a golden opportunity for them. The weather was cold and raw but all entered into the work with great enthusiasm.

The first morning of instruction with the selectees was very interesting. The eight truck loads of equipment were carried out at 6:00 AM and at 7:00 AM the first group of selectees arrived. It was barely daylight, but light enough to see the tremendous numbers swarming over the dike. After twenty years of small units, two troop squadrons, and puny regiments, it was certainly inspiring to see 1,700 men march out for preliminary rifle training the first day of their course of recruit instruction. These 1,700 in the 1st group were replaced at mid-forenoon by 1,700 more and afternoon brought a similar group. From that day forward, the Weapons Department trained about 5,000 men a day.

The range season started immediately following the first two weeks of preliminary instruction. No one will ever know what feelings went through the minds of the members of the Weapons Department the first morning on the range. It was a cold, cloudy, drizzly, typical early spring day. No one had ever attempted to take recruits on the range for a full course of marksmanship at the beginning of their third week of training, much less 1,700 of them. Everyone wondered what the results would be.

That first week on the range was something to experience. Shooting in the very worst weather possible, almost freezing, raining, windy, gloomy and snowing at times, the first 1,700 qualified 52%, not bad, but of course not good. The next week, the instructors were in stride, the weather was milder and the results were better. The second 1,700 were able to average 61%. Then the last week of the range season, with many of the selectees late arrivals, but better weather and more experienced instructors, the percentage was over 70. We were able to leave the rifle season with 60% qualified of the more than 5,000 men fired, just 5 weeks after they entered training.

Pistol and machine gun instruction was carried on concurrently during the next four weeks, the cycle being two weeks. Great emphasis was placed on thorough preliminary instruction. The coach and pupil method was employed. While half the group was firing pistol, the other half was firing machine gun. The firing lines extended from Governor Harvey Canon to Pump House Canon. Difficulty was experienced with the 1918 tripod for the Browning water cooled machine gun, but this was overcome to a large extent by reversing the mount so as to place the two short legs in rear and the long leg to the front. The gun was set up very low and fired

*Chief of Weapons Department.

1—Section of the line firing for record on the 300-yard range. There are 225 targets. 2—A group of selectees receiving preliminary instruction in sighting and triangulation with the rifle. 3—Demonstrating the coach and pupil method showing the emphasis placed on the proper form in firing the pistol. 4—Preliminary instruction in rapid fire with the pistol. The range has 150 pistol targets. Ten hours instruction are given before the trainee fires for record. 5—Scene on the 1,000-inch range, there are 120 targets. Each trainee received five hours instruction.

from the prone position, rapid single shot, as a light machine gun.

An additional week of machine gun instruction was given in the 10th week in the form of field firing. The supplementary rifle and pistol season, and a rifle, pistol, and machine gun competition for the best shots in each training troop were carried on during this week.

The 11th and 12th weeks were devoted to combat training, which included a course in individual and collective use of cover, technique of rifle fire, landscape target firing, and combat firing exercises. It was very interesting to watch the combat firing exercises as a final test of all the dismounted training. Each squad was conducted to its initial point by its selectee acting corporal, then a simple combat situation was given which involved an approach under fire and the building up of a firing position. After firing was completed the selectees were moved forward to their targets for a critique and to paste their own targets. Colonel Huebner from the War Department G-3 Office, an Infantry Officer with wide experience in combat, saw some of this

training and was very complimentary, indicating that we were on the right track.

During the last week of the course a demonstration of firing with all Cavalry Weapons was put on by the department instructors. The objective of this demonstration was to show the various classes of fire employed with the many different types of Cavalry Weapons. This started with the revolver, pistol and tommy gun; continued with the M-1 rifle, light and heavy machine guns; and ended with the Cal. 50 machine guns, 81-mm. mortars, and the 37-mm. AT gun. This demonstration gave the selectees a picture of modern fire power in the Cavalry and a definite idea of the powers and limitations of the various weapons. The Motors Department assisted in this demonstration by furnishing scout cars and tanks for a demonstration of vehicular firing.

The weapons department, in coöperation with the other departments and the training squadrons, participated in the graduation exercises, which were primarily demonstrations for the public of the many phases of training taught at this center. The principal event with which the weapons department was concerned was the combat exercise, a combined attack employing about 1,800 men, a dismounted attack with about 800 men taking part, and a mounted attack with about 1,000 men and horses participating. The whole made a very impressive spectacle, the spectators were on the rimrock near Milford Gate and the attack was from the Republican River, north towards Breakneck Canon. Scout cars, tanks, and all weapons were employed in conjunction with the attack, to complete the picture of modern combat.

The period between the graduation of the first increment and the arrival of the second increment was devoted to revising schedules, reviewing instruction, reconditioning the matériel and equipment, and general reorganization. Many selectees were retained as instructors in the department, therefore these new men needed considerable training in order to prepare them to take over their instructional duties.

By transferring the poorest of the enlisted instructors as replacements a general improvement in the tone of the department was noted. Experience has vindicated our judgment in that several border line cases which were retained to give the individual the benefit of any doubt, are to be transferred at the close of the second training period.

The second training period was started July 7th. Very few changes were made in the schedule. The principal ones made were to give all day periods of instruction when classes were held at any great distance from camp. This was done with machine gun field firing, since this occurred late in the schedule and presented no great difficulty.

In the Summer period the weather conditions were much better than for the Spring period and the results were very much improved. The rifle average was raised to 72% qualified as against 60% for the first increment. How much of this improvement could be attributed to better instruction is problematical but certainly some of it should be. Some troops qualified as high as 95%, some as low as 40%, one of the latter was under one of the best instructors in the department. Perhaps some of our letters to explain by endorsement for failing to qualify 80% in years gone by, were unjustified, or the failure excusable.

The dismounted pistol qualifications showed about the same improvement as the rifle qualifications. The first increment averaged about 56% and the second about 65%. Some of this improvement was unquestionably due to milder weather but a good share of it could safely be attributed to more experienced instructors.

The machine gun instruction of the second increment was improved principally by the selection of a more suitable field firing range. One very interesting feature of this firing was the fire discipline. Automatic fire was conspicuous by its absence, where as ordinarily a great problem has been to induce the gunner to employ rapid single shot. The Browning light gun was used for this field firing. A day of firing on moving ground targets was added during this second increment. This proved to be a very interesting and profitable addition to the course, made possible by a small increase in ammunition allowance.

The combat firing for the second increment was improved greatly by using more ground. The line of departure for the problems was about 1,500 yards long, this gave an interval between individual troopers of about five yards and a reasonable interval between units. Sound records of war noises, which included sounds of dive bombers, ricochets of all types, artillery shell bursts, and machine gun fire, were played over public address systems while troops were advancing and firing. Smoke was laid down on the area and all men fired with the gas mask on. The Springfield rifle was used for this firing. Rifles were loaded with five rounds in the magazine, the bolt closed on an empty chamber, and the piece locked prior to the advance.

The graduation demonstration of the second increment culminated in an attack combat exercise with blank ammunition. This demonstration illustrated to the spectators the scope of the combat training, particularly as to technique, and made a fitting final act, showing that the objective of all the training at the replacement center is to prepare soldiers for combat.

The Cavalry can be no more effective than the men who compose it. The Weapons Department of the Cavalry Replacement Training Center considers that if every selectee leaves here with a thorough fundamental knowledge of the basic weapons, he is prepared, in this respect, to take his place in any organization in the Cavalry.

Making Motor Soldiers

By Lieutenant Allan G. Crist, Cavalry

FARMHANDS, clerks, accountants, veteran truck drivers and youngsters who never sat behind a steering wheel—they came to the Motors Department of the Cavalry Replacement Training Center at Fort Riley, Kansas. They leave the sandy flats of the Republican River 13 weeks later, as qualified scout car or truck operators, motorcyclists or "tankers." Since its birth in the bitter wintry February days of 1941, the department has turned out approximately 3,600 motor soldiers, skilled in the driving and maintenance of their vehicles under all conditions of roads, weather and light. Stress is laid on cultivating proper driving habits: ridding veteran drivers of the faults they picked up by "just learning," and getting novices on the right track toward safe, smooth operation and careful maintenance.

The department's task is three-fold: training selectees in motor operation and maintenance; handling all administrative transportation for the 6,000-man replacement training center; and the attendant upkeep of more than 200 vehicles. The "students" come from the various motors training troops, which are responsible for all phases of training except motors and weapons instruction.

Organization

The department consists of one Regular Army officer —the department head—19 Reserve officers and 109 enlisted men. A small number of Regular enlisted men served at the outset as the nucleus of the enlisted personnel. This nucleus was later augmented by the assignment of hand-picked selectees graduated from the first two increments. The Department and Detachment Headquarters, serving the usual administrative functions, together comprise six officers and 16 men. Training is conducted by the Scout Car and Bantam Divisions, each consisting of three officers and 12 NCO's; the Truck Division, four officers and 17 NCO's; Tank Division, one officer and three NCO's, and Motorcycle Division, one officer and five NCO's. One officer and 24 men are responsible for all vehicular maintenance. A Transportation Platoon of one officer and 20 men operates the Motor Pool.

Equipment

Except for a complete lack of semi-trailers and the availability of only one quarter-ton 4x4 liaison truck at this writing, the department has sufficient vehicles and shop equipment to carry out its functions.

The Truck Division operates 39 GMC 6x6's for training; the Scout Car Division, 28 M3A1's (Scout Cars); the Motorcycle Division, 22 Indian solos; and the Tank Division, three M3 light tanks and a half track. A wrecker is assigned to each division. With only one "Bantam" now on hand, the Bantam Division has been using 41 M1 Scout Cars that have seen better days. Except for the M1's, all training vehicles are 1940 or 1941 models.

The bulk of the administrative transportation consists of old 1934 to 1939 vehicles: 48 Dodge and Chevrolet 4x2's, and GMC, Dodge and Indiana 4x4's; four station wagons, eight sedans, two motor tricycles, three M1 scout cars and 25 bicycles, the latter for messenger service within the camp.

The Maintenance Division, in addition, operates a 1935 4-ton wrecker and a 1½-ton stake body truck. Approximately ten per cent of the vehicles are held out at all times for scheduled maintenance. The percentage runs higher for the M1's and the older trucks.

Training

The Number One job—training—is divided among the Scout Car, Truck, Bantam, and Motorcycle Divisions and the Tank Section.

An effort is made by the C.R.T.C. Classification Section to fit round pegs into round holes. Within each Motors Training Squadron, selctees who have driven taxis or private automobiles are assigned to one troop, for training under the Bantam Division; operators of pick-ups and other light trucks go into another troop, to become scout car drivers; former drivers of heavy trucks, school buses and semi-trailers are grouped together as prospective truck operators, and into the fourth troop go motorcyclists, caterpillar tractor drivers and automobile mechanics for training variously as truck drivers, cyclists, or "tankers."

A carefully planned schedule of lessons is followed. The first week of training is virtually a "ground school." Vehicles either are blocked-up, or parked with transfer case gearshift lever set in neutral so that the controls may be operated without turning the wheels. The trainees are first grounded thoroughly in nomenclature, vehicle inspections, safety precautions, road rules and traffic regulations, arm signals, and proper handling of controls. The second week is devoted to Primary Driving practice over open country adjacent to the Motor Park.

At the outset, each enlisted instructor must supervise the training of crews on four or more vehicles simultaneously. However, during the early stages of training, trainees are singled out to serve as assistant instructors, one for each vehicle. Each crew is divided into three groups. While one undergoes actual driving instruction, each of the others remains dismounted and is occupied with lectures or practical work on a wide variety of subjects, which include vehicle inspections,

1—Some of the Motors Department's vehicles line up at the Fort Riley Station to transport a new increment of trainees to their new home at the Cavalry Replacement Training Center on the Republican Flats. 2—Student drivers line up with their scout cars and trucks—a portion of the department's approximately 200 vehicles—on the motor park for their daily 2½-hour lesson. 3—An enlisted instructor explains a phase of maintenance to his scout-car crew. Proper care of his vehicle is impressed upon every trainee. 4—A typical obstacle confronts a student driver during the "difficult driving" phase of instruction, designed to cultivate confidence in the vehicle and ability to negotiate rugged terrain.

arm signals, convoy procedure, road rules and traffic regulations, use of the driver's trip ticket and accident report, and lubrication. Instruction is equalized by rotation of groups during each instruction period.

As the course progresses, the trainees learn to operate their vehicles across all types of terrain and in convoys. The students engage in simple combat exercises: reconnaissance missions for scout cars, bantams and motorcycles; simulated supply missions for the trucks; negotiation or removal of traps and road blocks for tanks.

Occasionally, the department is called upon to transport a thousand or more trainees to sports exhibitions or to appear in demonstrations at some near-by city. Such trips provide excellent opportunities for practice in large convoy operations, with scout cars and trucks used as personnel carriers, and motorcycles as escorts. Other opportunities present themselves to work the course of training in smoothly with the department's administrative and maintenance functions. Competent truck drivers are assigned for a week at a time to the Transportation Platoon, augmenting the platoon's small and busy regular staff. Ex-mechanics similarly get an opportunity to demonstrate their qualifications when

assigned temporarily to the Maintenance Division.

Each student's progress is checked closely. The enlisted instructors rate students weekly, as to skill in operation, knowledge of maintenance, traffic regulations and safety precautions, vehicle inspections, and general attitude. The grades are Excellent, Very Satisfactory, Satisfactory, and Unsatisfactory. After the first few weeks of training, those who have failed to maintain average progress are grouped together for special instruction under a noncommissioned officer especially selected for his patience and diplomacy. This practice develops a surprisingly high proportion of fully capable drivers out of seemingly unpromising material.

Drivers assigned to a particular type of vehicle carry through their course of instruction for that type only, except that through a system of interchange, each has a brief, "get-acquainted" session on several others. The objective is to teach a scout car driver, for instance, enough about operation of a truck that he may qualify as a truck driver with but little additional instruction. Recognizing the importance of first echelon maintenance as a trouble-preventive, the department sets aside one-third of its training time for that purpose. The first two periods of each day are devoted to instruction in operation. The third is spent entirely on tightening, servicing, and cleaning.

Out of the experience gained in training two increments of selectees, already "tooling" their vehicles across the highways of the nation for the Cavalry and the Armored Force, the department's officers and men feel confident that they are turning out a stream of Grade A motor soldiers.

Cavalry Replacement Training Center*

THIRTY-SIX organizations participated in the distribution of the trainees of the second increment. It was impossible to fill all requisitions for replacements completely because of the transfer of 1,053 trainees, who were over 28 years of age, to the Enlisted Reserve Corps. The replacements actually shipped were as follows (White):

2d Cavalry Division, Fort Riley, 861; 4th Cavalry, Fort Meade, 329; Fort Leonard Wood, 15; 1st Cavalry Division, Fort Bliss, 546; 124th Cavalry, Fort Brown, 58; 112th Cavalry, Fort Clark, 516; 56th Cavalry Brigade, Fort McIntosh, 49; 113th Cavalry, Camp Bowie, 347; Finance Detachment, Randolph Field, 2; 6th Cavalry, Fort Oglethorpe, 118; 11th Cavalry, Camp Lockett, 9; 11th Cavalry, Camp Seeley, 12; 115th Cavalry, Fort Lewis, 144; 107th Cavalry, Camp Forrest, 13; 3d Cavalry, Fort Myer, 257; A Troop, 252d Q.M. Squadron, Fort Reno, 69; 2d Reconnaissance Troop, Ft. Sam Houston, 4; and 4th Reconnaissance Troop, Fort Benning, 47.

Corps Area Service Commands: Fort Snelling, 47; Camp J. T. Robinson, 19; Fort Robinson, Nebr., 1; Hot Springs, Ark., 1; Fort Crook, 3; Fort Omaha, 2; Fort DesMoines, 58; Fort Leavenworth, 127; Fort Sheridan, 6; and Fort Custer, Mich., 24.

Colored Trainees: 4th Brigade and Cavalry School, 234; Corps Area Service Commands: U.S.M.A., West Point, 3; Fort Leavenworth, 19; Fort Myer, 2; Q.M. Det., Flying School, Mather Field, 13; Q.M. Det., Flying School, Tuskegee, 8; Q.M. Det., Flying School, Bakersfield, 13; and Q.M. Det., Gunnery School, Las Vegas, 2.

* * *

The two new chapels were dedicated October 17th in an impressive ceremony in which Brigadier General Chamberlin cut the ribbon officially opening them for service.

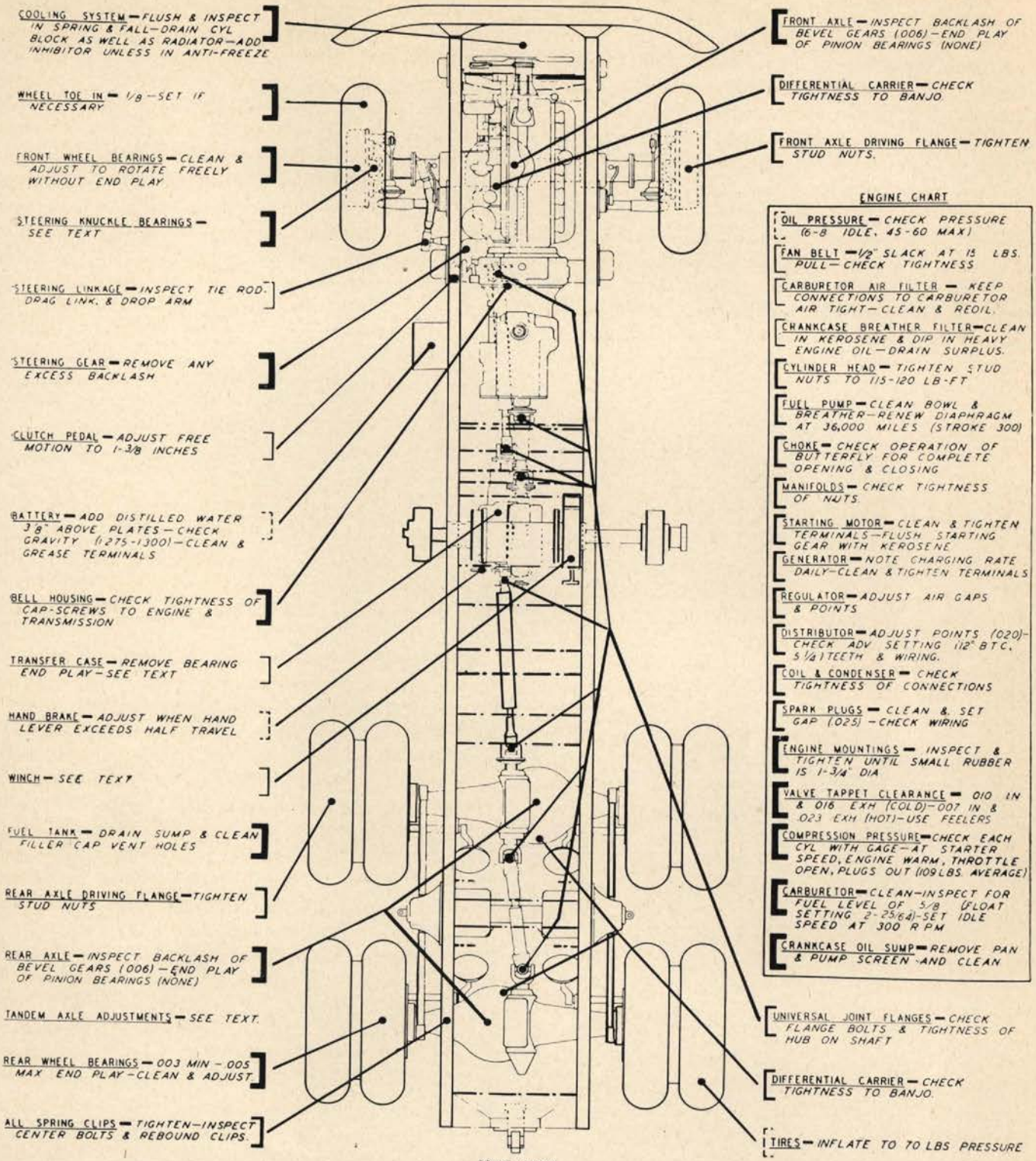
Distinguished visitors to the Center have included: Assistant Secretary of War, Hon. John J. McCloy and his Aide, Lt. Col. Ralph Tate; Brigadier General Sherman Miles, G-2, War Department; Lt. Col. E. M. Sumner, Office of the Chief of Cavalry; Brigadier T. N. F. Wilson, Major G. N. Fairbanks and Capt. P. Arkwright of the British Army.

The following offiers have joined the command since September 1st: Colonel Oliver I. Holman; Captains Emery D. Stoker, Robert W. Castle, John E. Reilly, Russell E. Doty; First Lieutenants George H. Dalton, Harold J. Tyndall, William L. Blake, Newton G. Place, John G. Adams, George A. Pearson, Jr., John J. Marron, Murray F. Sweet; Second Lieutenants Carroll T. Neal, Jr., Max E. Moe, Robert S. Murliss, Tom P. Mee, Harold E. Stambaugh, Herman P. Hightower, Casamis L. Leonard, Brewster Perry, Robert L. Montague, Glyndon O. Loomer, Dale Rader, John J. Spillman, Nando L. Necci, Thomas F. White, and Stanley E. Fields.

The following officers have departed: Brigadier General Harry D. Chamberlin, Major James E. Murphy, Captain Floyd C. Lyon; First Lieutenants Newton G. Place and John D. Adams; Second Lieutenants James M. Scott, Millard F. Caldwell, Roy A. Davis, Davis Martin, Glen O. Richardson, Helmer Julius Uglum, Hawthorne Hughes, William L. White, Arthur T. Yates, Harold E. Armstrong, Lawrence G. Graber, Eldon F. Hubin, Harold B. Mackenzie, William H. Walner, Samuel S. Wortham, Jr., Charles T. Leverett, Michael Boyer, Joe Kolesar.

*Brigadier General Donald A. Robinson, Commanding.

Typical Adjustment Diagram for a 6 x 6 Truck



COOLING SYSTEM — FLUSH & INSPECT IN SPRING & FALL — DRAIN CYL BLOCK AS WELL AS RADIATOR — ADD INHIBITOR UNLESS IN ANTI-FREEZE

WHEEL TOE IN — 1/8 — SET IF NECESSARY

FRONT WHEEL BEARINGS — CLEAN & ADJUST TO ROTATE FREELY WITHOUT END PLAY

STEERING KNUCKLE BEARINGS — SEE TEXT

STEERING LINKAGE — INSPECT TIE ROD, DRAG LINK, & DROP ARM

STEERING GEAR — REMOVE ANY EXCESS BACKLASH

CLUTCH PEDAL — ADJUST FREE MOTION TO 1-3/8 INCHES

BATTERY — ADD DISTILLED WATER 3/8" ABOVE PLATES — CHECK GRAVITY (1.275-1.300) — CLEAN & GREASE TERMINALS

BELL HOUSING — CHECK TIGHTNESS OF CAP-SCREWS TO ENGINE & TRANSMISSION

TRANSFER CASE — REMOVE BEARING END PLAY — SEE TEXT

HAND BRAKE — ADJUST WHEN HAND LEVER EXCEEDS HALF TRAVEL

WINCH — SEE TEXT

FUEL TANK — DRAIN SUMP & CLEAN FILLER CAP VENT HOLES

REAR AXLE DRIVING FLANGE — TIGHTEN STUD NUTS

REAR AXLE — INSPECT BACKLASH OF BEVEL GEARS (.006) — END PLAY OF PINION BEARINGS (NONE)

TANDEM AXLE ADJUSTMENTS — SEE TEXT.

REAR WHEEL BEARINGS — .003 MIN - .005 MAX END PLAY — CLEAN & ADJUST

ALL SPRING CLIPS — TIGHTEN — INSPECT CENTER BOLTS & REBOUND CLIPS.

FRONT AXLE — INSPECT BACKLASH OF BEVEL GEARS (.006) — END PLAY OF PINION BEARINGS (NONE)

DIFFERENTIAL CARRIER — CHECK TIGHTNESS TO BANJO

FRONT AXLE DRIVING FLANGE — TIGHTEN STUD NUTS.

ENGINE CHART

OIL PRESSURE — CHECK PRESSURE (6-8 IDLE, 45-60 MAX)

FAN BELT — 1/2" SLACK AT 15 LBS. PULL — CHECK TIGHTNESS

CARBURETOR AIR FILTER — KEEP CONNECTIONS TO CARBURETOR AIR TIGHT — CLEAN & REOIL.

CRANKCASE BREATHER FILTER — CLEAN IN KEROSENE & DIP IN HEAVY ENGINE OIL — DRAIN SURPLUS.

CYLINDER HEAD — TIGHTEN STUD NUTS TO 115-120 LB-FT

FUEL PUMP — CLEAN BOWL & BREATHER — RENEW DIAPHRAGM AT 36,000 MILES (STROKE 300)

CHOKE — CHECK OPERATION OF BUTTERFLY FOR COMPLETE OPENING & CLOSING

MANIFOLDS — CHECK TIGHTNESS OF NUTS.

STARTING MOTOR — CLEAN & TIGHTEN TERMINALS — FLUSH STARTING GEAR WITH KEROSENE

GENERATOR — NOTE CHARGING RATE DAILY — CLEAN & TIGHTEN TERMINALS

REGULATOR — ADJUST AIR GAPS & POINTS

DISTRIBUTOR — ADJUST POINTS (.020) — CHECK ADV SETTING 12° BTC, 5 1/2 TEETH & WIRING.

COIL & CONDENSER — CHECK TIGHTNESS OF CONNECTIONS

SPARK PLUGS — CLEAN & SET GAP (.025) — CHECK WIRING

ENGINE MOUNTINGS — INSPECT & TIGHTEN UNTIL SMALL RUBBER IS 1-3/4" DIA

VALVE TAPPET CLEARANCE — .010 IN & .016 EXH (COLD) — .007 IN & .023 EXH (HOT) — USE FEELERS

COMPRESSION PRESSURE — CHECK EACH CYL WITH GAGE — AT STARTER SPEED, ENGINE WARM, THROTTLE OPEN, PLUGS OUT (109 LBS. AVERAGE)

CARBURETOR — CLEAN — INSPECT FOR FUEL LEVEL OF 5/8 (FLOAT SETTING 2-25/64) — SET IDLE SPEED AT 300 R P M

CRANKCASE OIL SUMP — REMOVE PAN & PUMP SCREEN AND CLEAN

UNIVERSAL JOINT FLANGES — CHECK FLANGE BOLTS & TIGHTNESS OF HUB ON SHAFT

DIFFERENTIAL CARRIER — CHECK TIGHTNESS TO BANJO.

TIRES — INFLATE TO 70 LBS PRESSURE

BRAKE CHART

RESERVOIRS — OPEN DRAIN COCK TO REMOVE MOISTURE & SLUDGE.

ALL BRAKE SHOES — SEE TEXT.

AIR COMPRESSOR — CHECK TIGHTNESS OF MOUNTING — CLEAN AIR FILTER — CHECK OIL PRESSURE (6-8) IDLE, 45-60 MAX) — CHECK DISCHARGE VALVE LIFT (.042) — CHECK UNLOADER TAPPET CLEARANCE (.012).

ALL SLACK ADJUSTERS — SEE TEXT.

GOVERNOR — CHECK FOR LEAKAGE AND TO LOAD AT 80-85 & UNLOAD AT 100-105 LBS — CLEAN AIR STRAINER — CHECK GAGE

APPLICATION, RELAY, & RELEASE VALVES — CLEAN FILTER — CHECK FOR LEAKAGE & PROPER OPERATION — RENEW DIAPHRAGMS AS REQUIRED.

ALL BRAKE CHAMBERS — CHECK FOR LEAKAGE — RENEW DIAPHRAGMS AT LEAST ONCE A YEAR.

TUBING & FITTINGS — CHECK UNDER PRESSURE FOR LEAKAGE.

SAFETY VALVE — TEST TO OPEN AT 150 LBS.

DAILY — 1000 MILE PERIOD — 6,000 MILE PERIOD — SPRING & FALL

★Chart furnished by courtesy of *The Army Motors*, Holabird QM Depot, Baltimore, Maryland.

A Private Views "Graduation"

By Private Yale Soifer

Some men never will give to life
Their sacrifice and pain,
Yet other men will face the strife
In order to live again. . . .

IN a little while the sun will be setting on the close of another training period for thousands of men from all walks of life. From office, shop, school and prairie we were drawn together and united into a common purpose and a common way of life. For thirteen weeks our bodies and minds were adjusted to the myriad tempos of army cavalry life, to the rush of strange and bewildering horses, the strain of the march, the patient intensities of combat drills. Pale, sunless faces took on a bronzed and hardened form, lungs and tissues dead for years began to live again, hands that trembled from the smoke and nerves of civilian life became steady with their new strength.

No one of us could deny the physical reward of our new life. No one of us who really sought within themselves the meanings of it all could deny the mental reward of comprehending the common, universal cause for which we endured.

"There are reasons for all things," is something we all had to learn at the beginning. To follow an order though oblivious to its goal. To snap into action when every urge was to draw back. To discipline ourselves for the good of the whole. Some of us bit back at this strange philosophy that had enveloped us, "griped," cussed, resented, but as the weeks unfolded there was less of this. More of us were suddenly awakening to the full impact of the *why* of our existence. The horse and gun became a part of each man and were mastered, the charge became symbolical, and every tissue of our bodies echoed its challenge to the day. *Graduation!*

Yes, there was a lot of "Hell-this!" and "Damn-that!" but beneath it all the better man was showing. So many of us had never realized the actual existence of "John Doe," the other guy. The other guy that bunked next to us, sweated, washed, ate, fought, swore with us. We talked different, thought different, but time passed and the man next to us began to have some meaning in our lives. More and more we understood and were tolerant. From the seeds of barracks and field, men were coming into their own.

Civilian newspapers write daily of "damaged morale," of "poor *esprit de corps,*" and similar stuffings. Letters from home speak of so-and-so's son being mistreated on K.P., of Pvt. Joe Bloke's having to scrub a stable wall, of "how terrible it is you boys have to suffer so much."

Rubbish! and more rubbish! There is actually no more "griping" in this man's army than man has eternally "griped" throughout the ages when he comes home from a hard day at the office or shop. As for "morale," it can never be guaged by the mediocre complaints we see everywhere. Only by the reaction of the soldier to his training and how well he retains the techniques of that training can we judge. The fact that our men are being turned out full-fledged cavalrymen, bewildered no longer by the horse, gun or the combat, is truth enough of the inherent solidarity of army "morale."

Soon we pass on to regular cavalry posts for active duty. Another new day faces us when the train pulls in and we dismount. This time our eyes can look at the sun, our hands can grab life more solidly, and the understanding of the vastness of our mutual cause is more firmly resolved.

Morale

A good soldier's morale is something like a lady's virtue—you don't talk about it; but there has been so much said about it recently that I want to add my bit. About all we must rid ourselves of the notion that morale is achieved by giving somebody something. Real morale is more readily achieved by depriving soldiers of something rather than by giving them something. Hostesses, movies, soda fountains and what have you, have their place, but endurance of hardship, sacrifice, competition, ability to outdo another unit, the feeling of inner strength—in short, the knowledge that he is tough, hardbitten, and able to take and inflict stiff blows, gives the soldier morale, and the more he has to put up with things and overcome obstacles, the more it develops.—*Honorable John J. McCloy, Assistant Secretary of War, Sept. 19, 1941.*

Book Reviews

ARMIES ON WHEELS. By S. L. A. Marshall. William Morrow & Co., New York. Maps and index. 1941. 251 pages. $2.50.

Mr. Marshall's *Blitzkrieg* (published in November, 1940) stands as the authoritative short interpretation of the present European war up to the Battle of Britain.

Now in *Armies on Wheels* the author studies the significant campaigns since Dunkirk, with particular emphasis on what they teach us about the ideal army for an offensive or defensive modern war.

Mr. Marshall sustains his uncompromising position against a completely independent air force by reference to what has actually happened during the past two years of war. He points out that the greater the mobility of an army, the greater the need for perfect integration and coördination. He advocates a much closer organization of infantry and artillery than we now have—"The air force officer who has a low opinion of infantry thwarts the principle of coöperation and opens the door to such tragedies as the one at Crete."

As to cavalry, the following excerpt is quoted:

"Horse cavalry participated in the fighting along fronts where armored power could not make headway. There was effective use of cavalry by the Greek army during the advance into Albania as well as by the British in the Syria Campaign."

"The Armored Force officer who scoffs at the idea that cavalry has any place in war fails to reckon with the fact that there is no other arm so well fitted to cope with the modern problem of the mass exodus of civil populations from cities under air bombing, which chokes the maneuver of the defender and makes possible the act of annihilation. Long-distance reconnaissance, the masking of an infantry advance, the cavalry charge—these uses of cavalry have been relegated to limbo by the rise of air and mechanized power, and the authority of the automatic weapons. But so long as disorder is the inevitable accompaniment of war, and so long as there are flanks toward which motorized vehicles cannot travel because of the forbidding nature of the ground, cavalry will have its distinct uses.

> "On August 17, 1941, on the Leningrad front a regiment of Russian cavalry routed two battalions of German SS troops and drove them back ten miles during a German attempt to extend the position by a night march. The horsemen, dismounting for battle, wore white arm bands to distinguish themselves from the enemy in the dark, after coming in on the German flank.

"We have all heard about the need for mobility in war until we are ready to gag on the subject, but little account has been taken of the difference between mobility and speed. In this difference is to be found the key to the future. Battlefield mobility, which is more important than the ability to move fast, is still the talisman of military success. Battlefield mobility, however, is merely the dynamic of an essential tactical unity. Speed itself solves none of the problems of war. If the race were always to the swift, then long before now the airplane would have blotted out the last land army even though on the ground it is tactically the least mobile of all weapons. The principles of war remain unchanged. Economy of force, concentration, surprise, security, offensive action and coöperation hold good whether an army is composed of foot soldiers, horse soldiers or machine soldiers. The attainment of certain of these ends (concentration, security) has been made more difficult by motorization, and rapid movement and speed themselves run counter to the efficient articulation of the entire force."

The author's chapter, "Tanks Can Be Stopped," is particularly noteworthy.

Only a student who had been a soldier could so accurately differentiate between that which is true and false in this kaleidoscopic era of total warfare, and what America should do about it.

* * *

GREAT SOLDIERS OF THE TWO WORLD WARS. By H. A. De Weerd. W. W. Norton & Co., New York. Illustrations, maps and index. 1941. 378 pages. $3.50.

The author is editor of *Military Affairs* and a writer whose contributions to military journals are regarded as among the most significant now appearing. In *Great Soldiers* he presents biography as military history, brilliantly illuminating the men and events that have shaped the destiny of our time.

SCHLIEFFEN, HINDENBURG, HOFFMANN, KITCHENER, LAWRENCE, PERSHING, PETÁIN, GAMELIN, CHURCHILL, WAVELL, SEECKT, HITLER, and others.

One in the profession of arms has but to scan the chapter contents to appreciate the importance of including this volume in every military library.

* * *

THE IMPACT OF WAR: Our American Democracy Under Arms. By Pendleton Herring. Farrar & Rinehart, New York. Index. 1941. 306 pages. $2.50.

What is the full significance of the phrases Total War and Total Defense that have become such a part of our daily speech? What do they imply in the conduct of our affairs as a democratic nation? How do they affect democratic government? How have we carried out our military affairs in the past and maintained our democratic tradition? How does our government today prepare to meet the military challenge of totalitarian might?

These are questions raised and answered by the author in this brilliant exposition as he describes American democracy under arms in the present crisis and against a background of 150 years of military history.

It is good food for provocative thought!

NOT ALL WARRIORS. By Captain William H. Baumer, Jr. Smith and Durrell, New York. Bibliography and index. 1941. 313 pages. $2.50.

This is a book of biographies about seven West Pointers who left their indelible impact on American civilization.

Few people are aware of the fact that over fifty per cent of the graduates of the United States Military Academy in the 19th Century entered civil life at some stage of their careers. For example, during the period 1802-1901, 2,371 of the 4,121 graduates found civilian occupations. These included one President of the Nation, The President of the Confederate States, three presidential candidates, four cabinet members, one ambassador, twenty-eight diplomatic officials, thirty-four members of Congress, sixteen state governors, one bishop, fourteen judges, seventy-seven members of state legislatures, seventeen mayors of cities, forty-six presidents of railroads and other corporations, two hundred twenty-eight civil engineers, two hundred attorneys, one hundred seventy-nine authors and numerous merchants and planters.

Of this imposing group of West Pointers, however, the author has chosen but seven to prove his thesis. One of our finest American painters, James McNeill Whistler; one of our greatest writers, Edgar Allan Poe; the head of the Confederate States, Jefferson Davis; a diplomat, Horace Porter; a manufacturer, Henry du Pont; the fighting bishop of the Confederate States, Leonidas Polk; and an explorer, Benjamin Louis Eulalie de Bonneville.

This would make a nice gift book for any library.

✓ ✓ ✓

THE SOLDIER AND THE LAW. By John A. McComsey and Morris O. Edwards. The Military Service Publishing Co., Harrisburg, Penna. Index and supplement. 1941. 401 pages. $1.50.

For practical assistance in the application of the *Manual for Courts-Martial* this book is worth its weight in gold!

The following quoted preface clearly and concisely gives the mission of this volume:

"The mission of this book is two-fold: (1) to prevent military delinquency; (2) to provide practical assistance for those concerned in the efficient administration of military justice. Part One ('Trial Prevention') and Section B of the Supplement ('A Suggested Explanation of the Articles of War') have been devoted to the first objective. The rest of the book, including Parts Two and Three, the Appendices, and Section A of the Supplement ('Outline of Procedure before Courts-Martial') have all been devoted to the second objective. The authors have attempted through the use of practical illustrations, various practical charts, forms, and check lists to make as mechanical as possible the purely procedural aspects of military justice. It is hoped thus to save valuable time, to avoid costly errors and embarrassment, and to assure that justice is duly administered 'without partiality, favor, or affection.'

"It should be emphasized that this book is not intended in any way as a substitute for the *Manual for Courts-Martial,* but rather as a supplement to it. This volume is not in any sense an official publication, although every effort has been made to check the correctness of statements made herein, and frequent excerpts from various War Department publications are employed."

WHAT THE CITIZEN SHOULD KNOW ABOUT OUR ARMS AND WEAPONS. By Major James E. Hicks. W. W. Norton & Co., New York. 100 Illustrations. Index. 1941. 252 pages. $2.50.

Interested in weapons? Well, whether a civilian or a soldier, this book gives authoritative practical information of the purpose and functions of every sort of weapon from the pistol to the heaviest coast artillery—machine guns from Gatlings to Brownings; famous types of cannon, 75-mm. howitzers, modern mortars and antiaircraft; types of armored combat vehicles; aircraft armament, bombs, etc.

The author is a major, Ordnance Department, Army of the United States.

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WHAT THE CITIZEN SHOULD KNOW ABOUT THE MARINES. By Captain John H. Craige. W. W. Norton & Co., New York, 1941. 211 pages. $2.00.

This is another one of the descriptive and informative *citizen's series* that compares well with the others. Remember them? *What the citizen should know about: The Army; The Navy; The Coast Guard; The Merchant Marine; Civilian Defense;* and *Our Arms and Weapons.*

The author of The Marines' volume, formerly editor of the *Marine Gazette* and retired because of injuries incurred in line of duty, is a Captain of the U. S. Marines—the shore-fighting service of our navy that is becoming more vitally important as the technique of modern war develops.

Captain Craige interestingly tells of the history, organization and mission of the famous corps of "Leathernecks," of their life afloat, and detached on assignments in far-flung outposts. This, and many other enlightening and convincing details strengthen our belief that "the Marines still have the situation well in hand."

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CENSORSHIP 1917. By James R. Mock. Princeton University Press, Princeton, N. J., Summary of Sources and index. 1941. 250 pages. $2.50.

Like Mr. Mock's extraordinary volume, *Words That Won the War,* which he wrote in collaboration with Cedrick Larson, this remarkable book is based upon a great mass of hitherto unpublished material from the National Archives in Washington, as well as his thorough acquaintance with sources used by other scholars.

The author holds no brief either for or against wartime censorship; he accepts it as inevitable in some form in modern war. He is interested above everything else in the effect of wartime censorship *after the war is over* and effectively warns against selfish groups and individuals who may attempt to prolong the "emergency."

Censorship 1917 has a direct message for Americans at the present moment because it is the profoundly important story of America's censorship experience in World War One—with the Censorship Board established by President Wilson— accompanying cable and mail censors to their far flung bases—watching the excision of movie film as Hollywood swings into line behind our national war effort—a peek over the shoulder of the unit commander as he censors the soldiers' mail. It is facinating to read and gives a clear insight into the subject of Censorship (1942?).

HE'S IN THE ARMY NOW. By Captain William H. Baumer, Jr. Robert M. McBride & Co., New York. 1941. Profusely illustrated. 255 pages. $2.50.

What to give the trainee for Christmas? Here is the answer. It will be a fine souvenir of his tour in the Service, for it illustrates what part John Doe is playing in this great new weapon of defense—our National Army—and in what camp he is learning to master the complexities of modern warfare. From a practical standpoint it is extremely informative and instructive. In both text and picture *He's in the Army Now* supplies the dramatic answer.

While this volume is in no sense an official government publication, much of the data obviously has been taken from United States Army publications. It traces the trainee from the day of induction through the Reception Center, Replacement Training Center and his service in the varied branches of the army—the Infantry, Cavalry, Air Corps, Field and Coast Artillery, Armored Force, Signal Corps, Corps of Engineers; and in the services—the Quartermaster Corps, Ordnance and Medical Departments.

Later we find our trainee a full fledged soldier on maneuvers when the coördination and coöperation of all elements of the Army are made effective as a combat team.

Pictured also is the less serious side of Army life—the games and sports, the entertainments and dances and the contagious horse-play which have contributed so much in moulding our great new American Army.

CURRENT SPANISH. By Jose Martinez. The Paulist Press, New York. 1941. $1.00.

Reviewed by Lieutenant Colonel E. M. Benitez, G.S.C.

Current Spanish, as the title implies, is a practical and simplified textbook designed to meet the needs of the student who wishes to acquire a speaking knowledge of the language without delving into the intricacies of its grammar.

The author is one of our ablest teachers of modern languages and a recognized authority on his native tongue. His present position as instructor of Spanish at the United States Military Academy has given him a keen concept of the army's requirements. This textbook is unique because, in addition to a complete compilation of modern conversational material, it contains military terminology which would be difficult to find in any other work.

This attractive little pocket-style edition should thus be an invaluable reference book for the scholar who is making a comprehensive study of Spanish, as well as for the beginner with limited time to devote to the subject.

ON GUARD. By Joseph R. Sizoo. The Macmillan Co., New York. 1941. $1.00.

While this book treats with the spiritual side of life it is different from many of similar nature. It deals with the very questions with which people in all walks of life are being confronted during these hectic war days. It should be in the library of every army and navy chaplain. There is a spiritual message for each of the 365 days in the year.

It would be an appropriate Christmas gift for *anyone.*

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Horse Feathers

Furlough

"Dear Father: Please send me a cheque.
I dallied last night with a deque;
What little I knew
Didn't carry me threw
And I got it, alas, in the neque!"

* * *

"Dear Son: I am just out of cheques.
Pray beware the physical wreques
That probably knew
A heap more than yew
Of cards and the opposite seques!"

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War Department Changes

Cavalry Personnel

(From September 6, 1941 to November 15, 1941)

Captain Raymond C. Adkisson, Ft. Bliss, Tex.. to Hq., Second Air Support Command, Oklahoma City, Okla.

First Lieutenant Joe Ahee, relieved 3rd Armored Div., Camp Polk, La.; assigned as assistant military attaché, Cairo, Egypt.

Lieutenant John H. Aldinger, from Fort Sheridan, Ill., to Panama Canal Dept.

Lieutenant Walter V. Baker, from Ft. Sheridan, Ill., to Panama Canal Dept.

Captain William G. Bartlett, from Philippine Dept., to 1st Cav. Div., Fort Bliss, Tex.

Lieutenant Colonel William T. Bauskett, Jr., retired, January 31, 1942, at own application.

Captain R. H. Bayne, relieved detail in Q.M.C., and Fort Ord, November 20; assigned 4th Cav., Fort Meade, S. Dak.

First Lieutenant William F. Beaty, from Ft. Leonard Wood, Mo., November 30, to 3rd Armored Div., Camp Polk, La.

First Lieutenant Henry G. Bell, from Ft. Benning, Ga., October 10, to faculty, Cav. School, Ft. Riley, Kan.

Lieutenant Colonel H. W. Benson will retire, physical disability, October 31.

Second Lieutenant Frank R. Bertero, from Ft. Bliss, Tex., to Cav. Rep. Tr. Cen., Ft. Riley, Kan.

Colonel J. K. Brown, upon his own application, will retire December 31, act of June 13, 1940; relieved Fort Bliss that date.

Major R. A. Browne, relieved 2d Cav. Div., Fort Riley, October 6; assigned Cav. R.T.C., that station.

Lieutenant Colonel H. DeB. Bruck, relieved Walter Reed General Hospital, Washington, D. C., and assignment at Camp Lee, Va.; to proceed home and await retirement.

Lieutenant Colonel Ralph H. Cameron, from Ft. McIntosh, Tex., to asst. const. QM, Zone VIII, Ft. Sam Houston, Tex.

First Lieutenant Samuel W. Carder, Jr., from Ft. Knox, Ky., to 12th Obs. Sqdn., Ft. Knox, Ky.

Captain Robt. W. Castle, from Washington, D. C., October 1, to Cav. Repl. Tr. Cen., Ft. Riley, Kan.

Captain Wm. E. Chandler, from Philippine Department, to 2nd Armd. Div., Ft. Benning, Ga.

Colonel F. K. Chapin, assigned command of Plattsburg Bks., effective upon reporting thereat.

Major Chester A. Clark, from Ft. Riley, Kan., to Philippine Dept., sail December 17, San Francisco, Calif.

Second Lieutenant Clarence W. Cleveland, from Pine Bluff, Ark., November 5, to AC pilot course, AC tr. det. School of Aviation, that station.

Colonel J. K. Cockrell, detailed as member of G.S.C.; assigned G.S. with troops, and C.Z., sailing from New Orleans November 25; relieved Hq., 3d C.A., Baltimore; to report for temporary duty in office, A. C. of S., G-2, Washington, D. C.; previous orders amended.

First Lieutenant Haskell C. Cohen, Fort Riley, Kan., to 2nd Cav. Div., that station.

Lieutenant Colonel Beverly H. Coiner, from Ft. Sam Houston, Tex., November 1, 3rd Arm. Div., Camp Polk, La.

Captain Loren F. Cole, from Ft. Benning, Ga., to home to await retirement.

Captain John A. Conway, from Ft. Riley, Kan., October 25, to Armored Force Rep. Tr. Cen., Ft. Knox, Ky.

Lieutenant Colonel C. B. Cox, relieved 15th Cav., Fort Lewis; assigned 1st Cav. Div., Ft. Bliss.

Lieutenant Colonel R. E. Craig, upon his own application, will retire December 31, act of June 13, 1940; relieved Camp Claiborne, La., that date.

Major M. B. Crandall's orders amended to assign him Hq., Air Force Combat Command, Bolling Field.

Lieutenant Colonel R. L. Creed, relieved 1st Cav. Div., Fort Bliss; assigned Cavalry Board, Fort Riley.

Lieutenant Colonel Gersum Croander, relieved 6th Cav., Fort Oglethorpe, October 10; assigned 4th C.A. Service Command, that station.

Second Lieutenant George C. Critchlow, Fort Riley, Kan., October 10, to Faculty, Cav. Sch., that station.

First Lieutenant Allan G. Crist, from Fort Riley, Kan., December 6, to 3rd Armored Div., Camp Polk, La.

First Lieutenant Richard H. Curtis, Fort Riley, Kan., October 30, to 2nd Cav. Div., that station.

First Lieutenant Raymond W. Darrah, from Ft. Brown, Tex., October 10, to Cav. Rep. Tr. Cen., Ft. Riley, Kan.

Lieutenant Colonel C. E. Davis, relieved 4th C.A. Service Command, Fort Oglethorpe, October 10; assigned Cav. R.T.C., Ft. Riley.

Lieutenant Colonel F. C. De Langton, upon his own application, will retire February 28, act of June 13, 1940; relieved Ft. Brady.

Major L. LaC. Doan, relieved Fort Riley, October 15; assigned 3d Armored Div., Camp Polk, La.

Second Lieutenant Charles W. Dowel, from Ft. Ord, Calif., September 22, to Army Air Forces, 2nd Air Depot Group, McClellan Field, Calif.

Second Lieutenant James F. Dreitzer, from Ft. Riley, Kan., to 4th Armd. Div., Pine Camp, N. Y.

Captain Walter J. Easton from Camp Forrest, Tenn., to Cav. Rep. Tr. Cen., Ft. Riley, Kan.

Colonel H. M. Estes, relieved office, C. of Cav., Washington, D. C., September 30; assigned 3d Cav., Fort Myer.

Second Lieutenant Irwin F. Evans, from Camp Seeley, Calif., to Armored Force Sch., Fort Knox, Ky.

Second Lieutenant R. J. Fate, relieved A. C. T. Det., Southwest Airways, Inc., Glendale, Ariz.; assigned 4th Armored Div., Pine Camp, N. Y.

Lieutenant Colonel F. W. Fenn, relieved 4th Armored Div., Pine Camp, N. Y.; assigned Hq., 1st Air Support Command, Mitchel Field.

Second Lieutenant Stanley E. Fields, Fort Myer, Va., to Cav. Rep. Tr. Cen., Ft. Riley, Kan.

First Lieutenant George F. Fisher, Jr., from Godman Field, Ky., to AC Adv. Fly. Sch., Brooks Field, Tex.

Colonel H. L. Flynn, relieved detail as member of G.S.C., assignment G.S., with troops, and Hq., 3d C.A., Baltimore, October 15th; assigned Cav. Board, Fort Riley.

Lieutenant Robert E. Foy, from Ft. Knox, Ky., September 12, to inactive status.

Captain William F. Fratcher, from Detroit, Mich., to off. JAG, Washington, D. C.

Lieutenant Colonel Geoffrey Galwey, relieved U. S. A. T. *Roosevelt*, New York Port of Embarkation Hq., that port.

Captain John F. Gibbons, Jr., Brooks Field, Texas, to Maintenance Command Subdepot, that station.

Lieutenant Colonel H. B. Gibson, detailed in I. G. D., October 1, relieved 1st Cav. Div., Fort Bliss; assigned Hq., 7th Inf. Div., Fort Ord.

Second Lieutenant Charles E. Goetz, from Ft. Bliss, Tex., to Philippine Dept., sail November 20, San Francisco.

Lieutenant Colonel S. R. Goodwin, assigned with A.G.D., November 30; relieved 4th Armored Div., Pine Camp, N. Y.; assigned A.G.O., Washington, D. C.

Colonel W. W. Gordon, relieved 3rd Cav., Fort Myer, September 30; assigned 3d C. A. Service Command, Fort Myer.

First Lieutenant William P. Gray, from Camp Roberts, Calif., to off. C. of S., Washington, D. C.

Captain Brendan McK. Greeley, Ft. Oglethorpe, Ga., to Hq., First Air Support Command, Mitchel Field, N. Y.

Second Lieutenant J. D. Green (now First Lieutenant, Army of the U. S.), transferred to Infantry on October 17; relieved 11th Cav., Camp Seeley, Calif.; assigned 7th Inf. Div., Fort Ord.

Lieutenant Colonel W. T. Haldeman, relieved Kansas City, Mo., November 1; assigned St. Louis.

Lieutenant Colonel Ernest N. Harmon, from Washington, D. C., November 1, to acting C. of S., Armored Force, Ft. Knox, Ky.

Major James L. Hathaway, Camp Seeley, Calif., to Hq., Fourth Air Support Command, Hamilton Field, Calif.

Colonel Arthur W. Holderness, from Presido of San Francisco, Calif., November 15, to U. of Ariz., Tucson, Ariz.

Lieutenant Colonel O. L. Holman, relieved New Mexico Military Inst., Roswell; assigned Cav. Repl. Training Center, Fort Riley.

Lieutenant Colonel H. G. Holt's orders amended to assign him 3rd Armored Div., Camp Polk, La.

Captain Thomas R. Houghton, from Fort Clark, Tex., October 5, to 3rd Armd. Div., Camp Polk, La.

Major C. B. Hutchinson's orders amended to relieve him Hq., 2nd C.A., Governors Island, December 1.

Lieutenant Colonel W. G. Ingram, relieved recruiting, Indianapolis, November 5; assigned C.C.C., Fort Benj. Harrison.

Captain Wm. I. Irby, Washington, D. C.,

to Air Service Command, Bolling Field, D. C.

First Lieutenant Newton E. Jarrard, from Pine Camp, N. Y., to 91st Obs. Sqdn., Pine Camp, N. Y.

First Lieutenant Carl L. John, from Fort Knox, Ky., to off. C. of S., Washington, D. C.

First Lieutenant George Johnson, Jr., Fort Benning, Ga., to asst. post utilities off., that station.

Colonel Byron Q. Jones, prior orders amended, from Ft. Bliss, Tex., to Hq., 6th Army Corps, Providence, R. I.

Second Lieutenant Richard D. Kelly, from Camp Polk, La., to Cav. Sch., Ft. Riley, Kan.

First Lieutenant Charles H. Kenworthy, from Indiantown Gap Military Res., Pa., to faculty, S.C. School, Ft. Monmouth, N. J.

Second Lieutenant Joseph M. Kirchheimer, from Fort Riley, Kan., October 10, to 4th Armored Div., Pine Camp, N. Y.

Captain Harold C. Kirchner, from Fort Jackson, S. C., to Cav. Rep. Tr. Cen., Fort Riley, Kan.

Captain Edward B. Kirk, from Fort Devens, Mass., December 1, to instr., Command and GS Sch., Ft. Leavenworth, Kan.

Lieutenant Wm. F. Kistler, from Fresno, Calif., to Hq., Army Air Forces, Washington, D. C.

Second Lieutenant J. F. Kreitzer, relieved 14th Cav., Fort Riley, and temporary duty with A.C.T. Det., Pine Bluff School of Aviation, Ark.; assigned 4th Armored Div., Pine Camp, N. Y.

Lieutenant Horace S. Levy prior orders amended, from Stockton, Calif., July 26.

Captain James B. Long, from Providence, R. I., to Hq., 6th Corps Area, Chicago, Ill.

Major Dana G. McBride, from Ft. Monmouth, N. J., to off., C.S.O., Washington, D. C.

Major Erle M. McGuffey, Washington, D.C., November 4, to off. J. A. G., Washington, D. C.

Colonel John T. McLane, San Francisco, Calif., October 15, to Hq., 9th Corps Area.

First Lieutenant Donald C. McWilliams, from Ft. Riley. Kan., to Philippine Dept., sail November 29, San Francisco.

Lieutenant Colonel Harry W. Maas, from Brooklyn, N. Y., to Fort Hamilton, N. Y.

First Lieutenant Aubrey P. Meador, Jr., from Fort Fliss, Tex., November 15, to 5th Armored Div., Fort Knox, Ky.

First Lieutenant John E. Merrill, Jr., from Fort Myer, Va., to faculty, Cav. Sch., Fort Riley, Kan.

Second Lieutenant John Millikin, Jr.'s orders amended to report for duty as student, communications course, Cavalry School, Fort Riley.

Major J. G. Minniece, Jr., relieved detail in Q.M.C. and assignment at Front Royal Q.M. Depot, and additional duty with O.R., 3rd C.A., November 20; assigned 1st Cav. Div., Fort Bliss.

Major James E. Murphy, from Fort Riley, Kan., to Org. Res., 3rd Corps Area, Washington, D. C.

Major J. O'D. Murtaugh, relieved Fort Riley, October 10; assigned Hq., 3rd Air Support Command, Savannah, Ga.

Colonel William Nalle relieved Hq., 4th Armored Div., Pine Camp, N. Y., November 18; assigned as instructor, C. and G. S. Sch., Fort Leavenworth.

First Lieutenant Henry T. Nelson, prior orders amended, July 5.

Second Lieutenant Frank J. Occhipinti, from Fort Lewis, Washington, November 6; to Rock Island Arsenal, Ill.

First Lieutenant Amos M. Osborne, from Fort Riley, Kan., November 2, to Arm. Force Rep. Tr. Cen., Fort Knox, Ky.

Captain Don R. Ostrander, from Ft. Wayne, Ind., to 726th Ord. Co., Selfridge Field, Mich.

Lieutenant Colonel D. S. Perry relieved 6th Cav., Fort Oglethorpe, October 20; assigned Army Group, Washington, D. C.

First Lieutenant Lyle E. Peterson, from Fort Bliss, Tex., November 13, to Fort Sam Houston, Tex.

Captain Henry L. Phillips, from Fort Clark, Tex., to 120th Obs. Sqdn., Ft. Benning, Ga.

Captain Wallace S. Phinney, from Ft. Riley, Kansas, November 1, to off. C. of O., Washington, D. C.

First Lieutenant Ralph B. Praeger, from Philippine Dept., to 2nd Cav. Div., Ft. Riley, Kan.

Captain R. J. Quinn, Jr., relieved 4th Cav. Regt., Fort Meade, S. Dak.; assigned 4th Recon. Troop, Fort Benning.

First Lieutenant Turner R. Ratrie, prior orders amended, from Pine Camp, N. Y.

Second Lieutenant George W. Ridenour, from Fort Riley, Kan., October 20, to Armd. Force Rep. Tr. Cen., Ft. Knox, Ky.

Major Basil L. Riggs, Ft. Myer, Va., to Hq., Fifth Air Support Command, Bowman Field, Ky.

Captain Russell V. Ritchey, prior orders further amended, from Presidio of San Francisco, Calif., to Hq., 4th Interceptor Command, Riverside, Calif.

First Lieutenant Edward E. Rosendahl, from Camp Shelby, Miss., October 25, to Wright Field, Ohio.

Lieutenant Colonel A. H. Seabury, upon his own application, will retire December 31, act of June 13, 1940; relieved Peoria, Ill., that date.

First Lieutenant Alexander P. Sheridan, Washington, D. C., to off. C. of A.C., Washington, D. C.

First Lieutenant D. M. Simpson, detailed in Ord. Dept., September 23; relieved 4th Cav., Fort Meade, S. Dak.; assigned Aberdeen Proving Ground.

Colonel Henry J. M. Smith, from Ft. Clark, Tex., November 5, to Hq., 4th Corps Area, Atlanta, Ga.

First Lieutenant Robert L. Smith, from Ft. Riley, Kan., to faculty, Cav. Sch., that station.

Second Lieutenant James P. Stewart, from Atlanta, Ga., to Army Air Base, New Orleans, La.

Lieutenant Colonel H. P. Stewart relieved 3rd C.A.S.C., Fort George G. Meade, Md., December 1; assigned 3rd Cav., Fort Myer.

Lieutenant Colonel M. L. Stockton, Jr.'s orders amended to relieve him detail in I.G.D.

Captain Emory D. Stoker, from Ft. Riley, Kan., to 6th C. A. S. C., Fort Sheridan, Ill.

Second Lieutenant R. W. Strong, Jr. (now First Lieutenant, Army of the U. S.), transferred to A.C. on October 3.

First Lieutenant Murray F. Sweet, Ft. Riley, Kans., October 10, to Cav. Rep. Tr. Cen., that station.

Major John T. Taylor, from Chicago, Ill., September 22, to Hq., 2nd Army Corps, Wilmington, Del.

Major Frank J. Thompson, from Camp Polk, La., to Hq., Fifth Air Support Command, Bowman Field, Ky.

Major Thos. J. H. Trappnell, from Philippine Dept., to 1st Armd. Div., Ft. Knox, Ky.

Lieutenant Colonel Richard B. Trimble, from Ft. Slocum N. Y., September 30, to home to await retirement.

Lieutenant Colonel L. K. Truscott, Jr., relieved detail as member of G.S.C., assignment to G.S. with troops, and Hq., 9th Army Corps, Fort Lewis; assigned 1st Cav. Div., Fort Bliss.

Colonel Joseph M. Tully, from Fort Riley, Kan., to 4th Cav. Regt., Ft. Meade, S. Dak.

Lieutenant Colonel H. E. Tuttle, relieved present duty at Fort Riley; assigned staff, Cav. School, Fort Riley.

Major C. H. Valentine, relieved Cav. Board, Fort Riley; assigned 2d Cav. Div., that station.

Major L. C. Vance, relieved Philippine Islands; assigned recruiting, Cincinnati.

Lieutenant Colonel T. D. Wadelton, upon his own application, will retire January 31, act of June 13, 1940; relieved Fort Hayes.

Lieutenant Colonel V. W. B. Wales, relieved as instructor, C. and G. S. School, Ft. Leavenworth, December 6; assigned 4th Arm. Div., Pine Camp, N. Y.

Major T. C. Wenzlaff, assigned with Q. M. C., November 20, and Reno Q. M. Depot, Fort Reno, Okla.; relieved Fort Bliss.

Lieutenant Stanley R. Wilbur, from Fort Sheridan, Ill., to Panama Canal Dept.

Lieutenant Colonel G. H. Wilson relieved detail as member of G.S.C., assignment G.S. with troops, and Hq., 3rd Army Corps, Presido of Monterey; assigned 4th Cav., Fort Meade, S. Dak.

Colonel Stephen W. Winfree, prior orders amended, from Atlanta, Ga.

First Lieutenant John S. Wintermute, Jr., from Hawaiian Dept., to 5th Armored Div., Fort Knox, Ky.

First Lieutenant Wiley B. Wisdon, prior orders revoked.

Major W. P. Withers, relieved Fort Knox; assigned office, C. Sig. O., Washington, D. C.

Major J. W. Wofford, relieved detail as member of G. S. C., assignment G. S., with troops, and as military attaché, Dublin, Ireland; assigned Army Group, Washington, D. C.

First Lieutenant Forrest D. Wright, from Camp Bowie, Tex., November 1, to San Francisco Port of Embarkation, Fort Mason, Calif.

Major Wesley W. Yale, from Washington, D. C., December 10, to 1st Cav. Div., Fort Bliss, Tex.

Lieutenant Howard C. Zindel, from Fort Sheridan, Ill., to Panama Canal Dept.

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