

# ARMOR

F13



## THE M4A3E8

Fondly called the "Work Horse," by many tankers, the M4A3E8 rose to great heights during World War II and again proved itself in Korea—Truly a Champion!

JANUARY-FEBRUARY, 1954

• 85 CENTS





# *Soviet Military Doctrine*

*by Raymond L. Garthoff*

**Prepared as part of the research program undertaken for the United States Air Force by The RAND Corporation, this book is the most complete and authoritative study available, of the basic military science of the USSR.**

Soviet Military Doctrine is an analytical study of Soviet "principles of war." It inquires into the guiding doctrine of Soviet armed forces, the foundation of their strategy, and their employment in war. It is neither a popular treatment of the Soviet Army nor an anecdotal history of that army in World War II.

Most of the material upon which the book is based has been long unavailable. The author has consulted hundreds of Soviet books, monographs, and documents (many of them considered secret by the Red Army), as well as relevant works in other languages. He has also profited from interviews with a number of former Soviet army and air force officers now living in the West.

*Part One* of the study is concerned with the relation between Soviet military and political doctrine. It contains discussions of the Bolshevik "combat image" of the world and political relations, and of the chief assumptions of Bolshevism that function as the framework of Soviet military thought. Soviet military doctrine differs from our own chiefly in the relative stress placed on certain commonly accepted principles of war. Some of the differences are due to Imperial Rus-

sian or German influences, and others to Marxist-Leninist ideology. But, essentially, the author finds that the framework of Soviet military science is similar to American doctrine, and that it is fundamentally sound.

*Part Two* contains a distillation and analysis of current Soviet principles of war. The salient ones are: the offensive, maneuver and initiative, the concentration of force, the economy of force, surprise and deception, momentum of advance and pursuit, annihilation of opposition, maintenance of strong reserves, and the close cooperation of combined arms.

*Part Three* offers a more detailed examination of the operational, technical, and organizational field doctrine of the various combat arms of the Soviet forces. There is an analysis of the missions of land, air and sea power, and of the doctrine for implementing these missions. Much of the material dates from the Soviet-German war, but there is enough from recent postwar years to warrant assumptions of current applicability. Indeed, the Soviets themselves stress that data from the recent war provide the basis for further development of their military doctrine.

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Watch for the exclusive feature review by Mr. Garrett Underhill  
in the March-April issue of ARMOR.

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# ARMOR

*The Magazine of Mobile Warfare*

Continuation of THE CAVALRY JOURNAL

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# MAJOR PROBLEMS OF UNITED STATES FOREIGN POLICY 1954

This book gives the reader a brief survey of the present world situation, outlining in a general way the character of international relations since the end of the war and the efforts made by the major powers to coordinate these relations in international organizations. An account is given of the fundamental and continuing objectives of the United States, Great Britain, and the Soviet Union, including a description of the official and unofficial mechanisms by which their governments formulate their foreign policies and conduct their foreign relations. Major problems of foreign policy confronting the United States at the end of 1953 are reviewed. Included is a detailed analysis of the problems of American-Soviet relations.

Cloth \$4.00

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## LETTERS to the EDITOR

### In Agreement

Dear Sir:

I am very much in agreement with your thoughts as expressed in the recent issue of ARMOR and in your letter of December 3rd regarding the two proposed changes to the constitution.

Following my service with the Fourth Armored Division and for a short period with the Fourteenth Armored Division, I have always considered myself to be one of the Armor Group. My inclination and thoughts lie in the direction of Armored warfare, if we need to think of war. I think that it would be most worthwhile to incorporate all such interested officers into the active membership of Armor so that they might have a better sense of belonging and be able to participate more fully in the Armor Association affairs.

I am sure that all my comrades, although they might be Artillerymen or Infantrymen, of the Fourth Armored Division, feel that first, they were members of the Division and were part of the Armor team; our specialties came second. My own reading, which I believe to be rather extensive, has been toward broadening my knowledge of Armor as expressed both by foreign officers and our own people.

I hope that by broadening the membership, and also by increasing the members of the Executive Council, you will be able to better cover the other branches and increase the

dissemination of Armored thinking into those branches.

I should very much like to attend your meeting at Fort Knox, but at this time I am afraid that business affairs at that particular time will prevent my traveling to Fort Knox.

R. E. MASON, JR.  
Lt. Colonel, Artillery

Columbus, Ohio

• Several comments in agreement with the changes have been received. Statements to the contrary have been made but not in writing. As we close this issue for press, at an early date so that we can prepare for the annual meeting, a preliminary report shows that of those not able to attend approximately 8 to 1 favor the amendments. A full report will be forthcoming in our next issue.—Ed.

### A Query

Dear Sir:

I have just received my first copy of ARMOR and was very impressed, to say the least. Its informative value, in my estimation can not be measured. ARMOR affords a person a great opportunity to learn and to keep abreast of the newest and more recent changes in our field.

However, I must admit that in the "How Would You Do It" section, situation number 1, I am not in complete accord. The solution states . . . "Upon completion of each supply effort the armored personnel carriers

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**Rates:** See bottom of contents page.



would return to combat trains area for refilling." Speaking from the viewpoint of a Medic it seems very logical to me that the personnel carriers present an ideal means of removing the casualties. Why return empty handed? The solution does not imply or clarify this point, which I feel is one of great importance. Would you answer this question for me?

WILLIAM H. CULLEN, JR.  
1st Lt. M.S.C.  
50th Armd. Med. Bn.  
50th Armd. Div. N.J.N.G.

Newark, New Jersey

• *This letter has been forwarded to the author, for reply. It is believed our Armored Medic has a point well taken.*—Ed.

#### A Plea!!!!

Dear Sir:

As editor of ARMOR magazine, you have often told me that a good many readers have stated that they always turn to the "Letters to the Editor" pages first. There are many letters that have come over my desk which I would like to sum up into one package.

The theme of most of these letters is, and I quote "I received my renewal bill but I haven't had an issue of ARMOR for six months. How come?" Nine times out of ten, when we check our files, the address last given by the subscriber and the one with the inquiry are different. The sad part of it is that the Post Office Department

forwards first class mail but not second class mail. Letters containing renewal slips, or postcards stating that the subscription has expired, are first class mail, but magazines go second class. Therefore, this is not the fault of the staff of the magazine but rather of the subscriber who has failed to notify us of his change of station. Because a good many readers are in the service, we have a constant problem to keep up with changes of address. However, when the member fails to inform us of a new assignment it is costly to the Association, and many times we lose good members who feel that we have not given them proper service.

Won't you please ask all readers to keep us informed of their whereabouts? We don't mind duplicating an issue but when we receive requests for several back issues and we have not been asked to hold up mailing copies until a new address is established it is costly to one and all.

LESTER B. SMITH  
Master Sergeant

Circulation Department, ARMOR  
Washington, D. C.

• *AMEN! Please keep us informed of your whereabouts and we will keep you informed with the latest issue of ARMOR. Also when you hear a complaint against us for not servicing a customer, please ask them if they have notified us of any change of address. It will decrease our costs and thus give more profits to plow back into ARMOR.*—Ed.

## AMERICAN FOREIGN ASSISTANCE

by

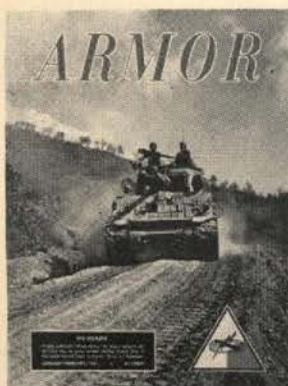
William A. Brown, Jr.

and

Redvers Opie

Over \$90 billion of foreign assistance has been made available by the United States during the twelve years 1941-52 inclusive. This book analyzes in detail the record of this assistance from lend-lease to mutual security. The authors examine the circumstances giving rise to the various assistance operations in Latin America, Europe, the Orient, and elsewhere. They trace the programs, analyze the policy issues that arose and appraise the results achieved. Professional men, students, or laymen who are trying to understand the intricate problems of foreign assistance will find in this book the first authoritative analysis and appraisal of the assistance record as a whole.

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### THE COVER

This photograph, taken in Korea in September 1952 depicts a tank crew of the 72d Medium Tank Battalion supporting the 38th Infantry Regiment, 2d Infantry Division on a mission to recapture "Old Baldy." Once again the "Work Horse" has proved itself.



The letter in the box on the opposite page addressed "To the Members of the Armor of the United States Army" from General Ridgway led us on a search into the annals of history in order to bring forth the traditions, heritage and background heralding this auspicious occasion.

In the past it has been customary for the various technical and administrative branches to highlight their anniversaries with various public displays, parades, and get-togethers by those personnel assigned to the branch celebrating their particular birthdays.

It is believed, however, that this is the first time that recognition had been given to any of the combat branches commemorating their anniversaries by the Chief of Staff.

A visit to the Organizational History and Honors Branch, Office of the Chief of Military History, Department of the Army, revealed many interesting facts which we believe are worthy of highlighting for our readers.

Although small mounted units were raised from time to time prior to the American Revolution in most of the American Colonies, the first official authorization of United States Cavalry was passed by the Continental Congress on December 12, 1776; hence Armor, the continuation of Cavalry, celebrated its 177th birthday on the 12th of December 1953.

Initially, four regiments were authorized. They were designated the 1st to 4th Continental Light Dragoons. The American Cavalryman of this period was armed and equipped to fight on foot as well as mounted and, through the advancement to mechanization, this tradition continues today.

The Continental Cavalry regiments were disbanded at the end of the War. By June 1815, the Regular Army found itself without any mounted force, a condition that prevailed for seventeen years, the military frontier being policed solely by infantry.

In 1883 the First Dragoon Regiment was authorized to combat the Black Hawk Indians. In 1836 the Second Dragoon Regiment was formed to meet the threat of the Seminole Indians in Florida. The Regiment of Mounted Riflemen was authorized and formed in 1846 to establish a military route to Oregon Territory. (The Third Dragoon Regiment organized for the Mexican War in 1847 was disbanded immediately following that war.) These three Cavalry regiments are still perpetuated in our army today.

The histories, battle honors, coats of arms and colors of these three (the oldest officially recognized

regiments) have been perpetuated. Today the First Tank Battalion of the First Armored Division proudly displays the colors of the First Dragoons. The Second Armored Cavalry Regiment stationed in Germany is a continuation of the Second Dragoons and the Third Armored Cavalry Regiment stationed at Camp Pickett, Virginia carries on the traditions of the old Regiment of Mounted Riflemen.

As our great nation expanded westward, the Army came into contact with the mounted Plains Indian and discovered that it was not equipped to cope with this new adversary. Consequently, Cavalry continued to be a part of our Regular establishment. All of the succeeding Regular Cavalry regiments that were authorized and formed through the 19th Century are presently designated as various Armor units with the exception of the Fifth, Seventh, and Eighth Regiments which are still part of the First Cavalry Division stationed in Japan. These three regiments gained fame during World War II fighting dismounted in the Pacific.

The first two years of the Civil War saw the Federal Cavalry at its worst. Most of the experienced officers of the mounted service, including four colonels of the five cavalry regiments, were Southerners and resigned their commissions in the United States Army as their individual home states seceded from the Union. In addition to the valuable services of seasoned officers, the South could draw on a population where riding and hunting had been second nature to them all their lives.

By late 1863, the Federal Cavalry gained sufficient experience and organization and was properly armed to tip the scales the other way. From then on, its superiority increased. The most conspicuous mobile operations took place during 1864 and 1865. Sheridan's Raid on Richmond, the flank attacks on Lee's Army at Appomattox, and Wilson's Raid on Selma are three worthy of note.

Today the American public best remembers our Cavalry for their engagements against the Indians both before and after the Civil War. In these Indian skirmishes, a regiment seldom fought as a unit. The troops of the regiment were usually scattered among many small posts in the Indian Country. In one battle, however, at Little Big Horn, General Custer and five of his companies were wiped out. This took place on the 25th of June 1876. This was probably the most famous of all the Indian-Regular Army skirmishes as American civilization moved westward.

In the short Cuban Campaign and during the Philippine Insurrection which followed, Cavalry fought



on foot. Along the Mexican Border in 1916, Cavalry assumed an important role and spearheaded the Punitive Expedition into Mexico under General John J. Pershing. Many mounted troopers were required to patrol the hundreds of miles of arid border. In fact, many of the cavalry regiments remained there during World War I.

The trench warfare of World War I limited the employment of Cavalry as such. The 2d Cavalry Regiment was the only unit to see service as a mounted cavalry combat unit in Europe, carrying battle streamers for St. Mihiel, Meuse-Argonne, and Aisne-Marne. Lieutenant General Hunter Liggett, Commanding General of the American First Army, stated that had he had two divisions of American horse cavalry at the battle of the Meuse-Argonne he would have accomplished his mission weeks earlier.

The tank first appeared on the battlefield during the latter stages of World War I. Originally under the Corps of Engineers the Tank Corps became a separate arm in March 1918. The tank was initially designed by the British and the French to break the stalemate of trench combat. The U. S. Tank Corps distinguished itself in the American offensive of St. Mihiel and the Meuse-Argonne.

The National Defense Act of 1920 assigned the development of tanks to the infantry.

The transition from horse to mechanized cavalry actually began in 1933 when the task of developing an armored force was turned over to the Cavalry. In July 1940 the Armored Force was created at Fort Knox, Kentucky, under command of General Chaffee.

The last cavalry unit to fight on horse mounts was the 26th Regiment, Philippine Scouts which, after its withdrawal from Lingayen Gulf to Bataan, was forced to destroy its horses and fight on foot. It is significant to note that this regiment served under an able, mobile-minded General who made fame in the early days of World War II: General Jonathan K. Wainwright.

With the enactment of the Army Organization Act of 1950, on the 28th of June, the title Armor was officially adopted as the branch name. The bill further stated that "The Armor shall be a continuation of the Cavalry."

The present-day Armor still maintains the characteristics of mobility, firepower, and shock action, originally functions of the Cavalry. Thus the symbol of "speed and violence" lives on. The saddle has been transformed into a tank turret, and saddle soap into an oil can, but the role is ever present.

### TO THE MEMBERS OF THE ARMOR OF THE UNITED STATES ARMY

The occasion of the 177th anniversary of the establishment of your branch gives me a welcome opportunity to extend my heartiest congratulations to all members of the Armor of the United States Army.

The record of American Armor from the first use of tanks in World War I through the splendid achievements of World War II has added luster to the gallant tradition which Armor inherited from its predecessor, the United States Cavalry. You have shown by your deeds in Korea that this heritage of valor, of determination, of devotion to duty continues to live and grow. I am confident that you will meet whatever tests the future may bring as magnificently as you have met the challenges of the past.

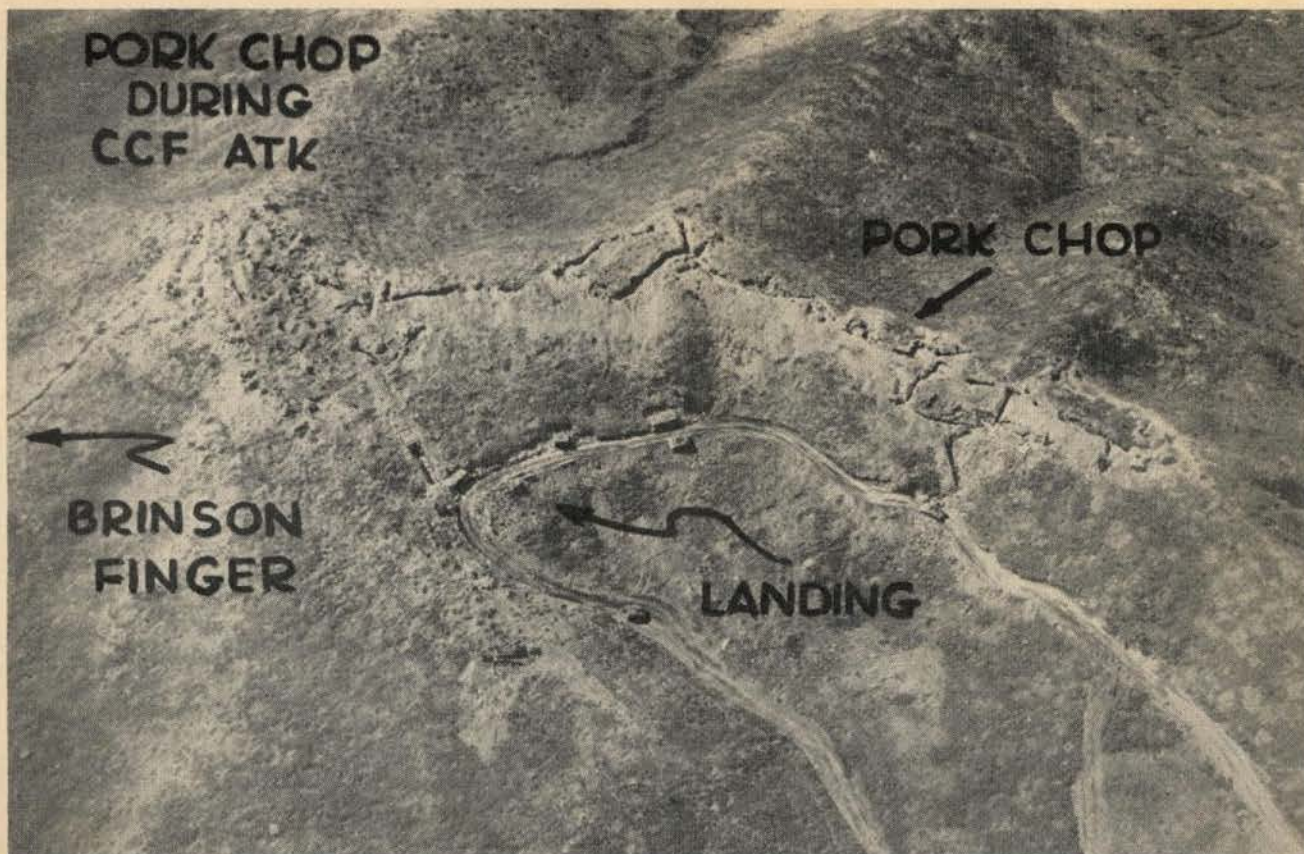
I know that your comrades in the Army join me in expressing sincere best wishes for your continued success.

/s/ M. B. Ridgway  
M. B. RIDGWAY  
General, United States Army  
Chief of Staff

Heritage and tradition go far to enhance the prestige of units and stimulate the morale of the personnel within them. The 12th of December should become an annual holiday for all Armor units. Commanders have a vantage point upon which to build. This annual occasion is an ideal time to salute those who have gone before, and upon conclusion of a day of festivities we all should take a solemn look into the future with the determination that, come what may, Armor will do its share on the team in keeping with the traditions and deeds of those who have built our Country, our Army, our Branch.

*The Editor*





CARDED

## THE M75

# Armored Personnel Carrier

by LIEUTENANT JOHN C. McLAUGHLIN

*Many requests for information on the M75 Armored Personnel Carrier have been received in the editorial office. Here we have a firsthand report of this vehicle. Yes, it has passed its initial combat test. First employed in Korea during the summer of 1953 (and reported in ARMOR news notes in the July-August, 1953 issue), the M75 was nicknamed the "Lifesaver" by those who used it in re-supply and rescue missions during a six-day period while staving off a fanatical Chinese Communist attack. Minor modifications are needed, but it proved itself.*



**T**HE war in Korea has given us the opportunity to test many items of equipment under conditions which were actual, not simulated. This has meant that the final OK of a piece of equipment came from those who used it in combat. During the last month of the "shooting war" one of our latest pieces of equipment, the M75 Armored Personnel Carrier, received its most important test—combat. This article covers a six-day period of vicious combat, and indicates the performance of the M75 during its baptism of fire.

The background of how the M75 came to play its part in the battle for *Porkchop* during the period of 6 to 11 July 1953 is worth exploring. *Porkchop*, a company-sized outpost, was located forward of the friendly Main Battle Positions. All logistical support for the elements occupying the position had to be transported along a one-lane road which had only a few places wide enough for two vehicles to pass. The road was under direct enemy observation from positions on the *Baldy* hill mass and from the *Hasakkol* complex. By virtue of this observation the enemy was able to place extremely accurate artillery and mortar fire, as well as direct fire, along the supply route. His direct fire weapons, located on *Baldy* some 1800 meters to the Southwest of *Porkchop*, made the use of general purpose vehicles impracticable. Further, the road, due to constant shelling, was trafficable only to tracked vehicles. Maintenance of the road by the engineers was normally accomplished under fire by dumping sandbags filled with rocks out of M39 Personnel Carriers.

In the type of "fortified line" warfare which typified the Korean conflict during the cease-fire negotiations, the Armored Personnel Carrier played a major role in the support of isolated outposts. In the 7th U.S. Infantry Division there were a number of isolated positions forward of the MLR which necessitated the use of Personnel Carriers for this purpose. *Porkchop* was such a position.

After a heavy enemy attack on the outpost in April 1953, an Armored Personnel Carrier platoon (provisional) was organized in order to assure that continuous support of the outposts could be effected. Therefore, when the final attack came against the outpost in July, there was available immediately a platoon which had for several months been hauling personnel, equipment, fortification material, and rations to the various outposts.

The night of 6 July 1953 was rainy—the fifth consecutive day of rain. On *Porkchop*, a reinforced company of the 17th Infantry Regiment was carrying out its usual defensive activities when a battalion-sized assault by Chinese Communist Infantry began. In the initial attack the enemy seized the crest of the hill and held it throughout the entire action. However, his attempt to completely overrun the position was stopped cold and instead of the quick seizure which he expected, the Reds were caught in a killing zone. The decision was made to keep on killing the enemy from the virtually impregnable positions still in friendly hands. To do so, however, required continuous support from the Main Battle Position. The M39's and M75's were the only vehicles which could successfully accomplish such a mission. During the action more than 70,000

rounds of artillery and mortar fell on "the Chop" and along the single access road.

Late that first night, Lt. Raymond Devereaux, platoon leader in the 17th Tank Company, received the order to move all his M75's and M39's to an assembly area in readiness to start hauling supplies out the tortuous road to the men holding *Porkchop*. In a short time he had his platoon consolidated in a forward assembly area. The first calls for support were not long coming in, "We need ammunition of all types, and grenades. We have some wounded that need to be evacuated."

The platoon leader, through the operation of a checkpoint, controlled the flow of vehicles to and from the outpost. The M75's and M39's started to roll. Supplies went out to the defenders on "the Chop"; wounded were brought back to the checkpoint for further evacuation to forward Battalion Aid Stations. Along the rutted road the drivers moved the vehicles in complete darkness, broken only by the flash of exploding artillery and mortar shells. The heavy rains had made the road and the steep approach to the landing on "the Chop" a mire of mud, but the M75 was up to the test and got through.

During this time, the platoon leader supervised the movement of the vehicles, supplies, rations, and ammuni-



U.S. Army

The M75 Armored Personnel Carrier rightfully earned the nickname "Lifesaver."

**FIRST LIEUTENANT JOHN C. McLAUGHLIN** served in the Pacific theater during World War II as an enlisted man. Recalled to active duty in 1950, he received a direct commission in 1951. He has served as tank platoon leader in Korea and is presently S2 of the 73d Tank Battalion.



tion to and from the outpost, often riding out to the position to get first-hand information on what the heroic defenders needed and to help in the unloading of supplies and the loading of the wounded and dead for the return trip.

As the battle for the outpost continued to rage, the Chinese, now determined to take "the Chop" at all costs, played into our hands. The importance of keeping the outpost supplied with ammunition and supplies increased as the enemy stepped up the momentum of his attack. The problem of replacing drivers, for those who by this time had been going 48 hours straight, became paramount. Replacement drivers were obtained and the APC's continued their vital mission of supporting the outpost, stopping only long enough to gas up and for hasty maintenance checks by members of the Regimental Tank Company's maintenance section and members of a special maintenance team from the 707th Ordnance Battalion led by Corporal Raymond L. Smith.

Fresh troops were loaded aboard the M75's and transported to the outpost. The APC's provided cover for the men going out and protection to the battle weary men who were being brought off the outpost. That this saved numerous casualties is without question. Infantry units moving on foot to the beleaguered outpost would have suffered tremendous casualties from the very heavy enemy fire being laid down even as far back as the assembly area.

On through the 8th, 9th and 10th of July the fighting raged, with the Chinese hurling men recklessly and relentlessly into the battle. The defenders on *Porkchop*, secure in the knowledge that their needed supplies would get to them, and knowing that if they were wounded they would be evacuated safely, completely shielded by the all-round protection of the M75, staunchly stood their ground and continued to heap up the Chinese dead in front of the positions.

The psychological advantage the APC afforded the riflemen of the Bayonet Division was readily apparent to Maj. Gen. Arthur G. Trudeau, then division commander, who made a personal inspection of the beleaguered outpost at the height of the battle.



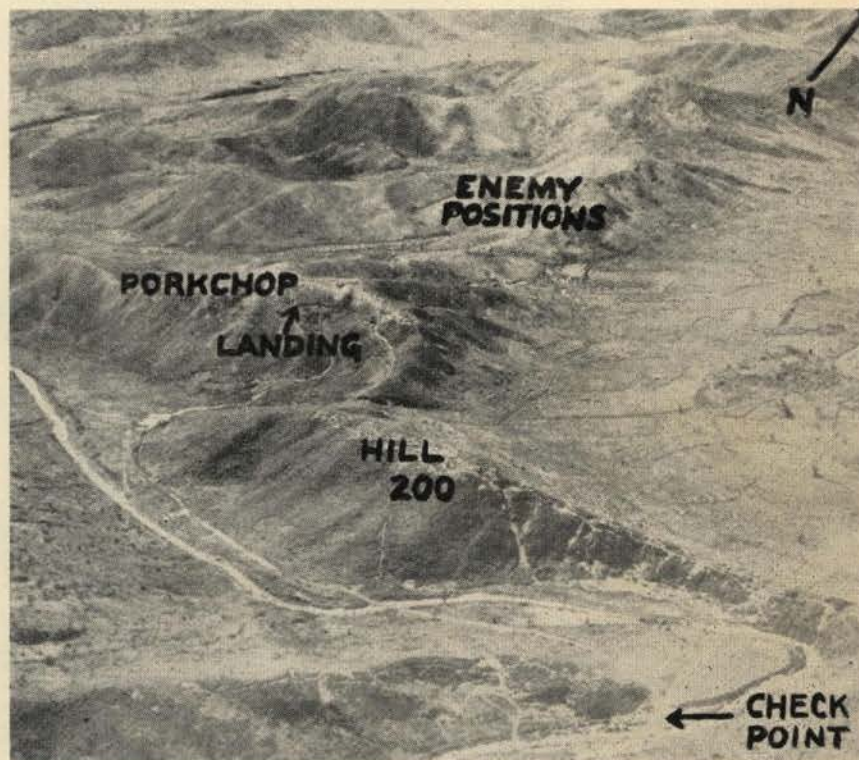
U.S. Army

Casualties being loaded prior to evacuation from checkpoint behind Hill 200.

Entire units were relieved and others took their places in the trenches and bunkers which honeycombed "the Chop," with the APC's furnishing transportation both ways. Meanwhile, the M39's were also operating, bringing supplies to the outpost and hauling ammunition up to supporting units which were also under

heavy enemy mortar and artillery fire.

By the end of the 10th of July, the outpost had been severely battered. The incessant artillery and mortar fire had churned up "the Chop," which had been a green-clad hill, into a mound of mud and debris. The road to the outpost was similarly battered and rapidly deteriorating despite the



U.S. Army

Aerial photo of "Porkchop" area showing enemy positions as well as our own.





U.S. Army

The M75 gave the defenders of "Porkchop" a decided psychological advantage.

never-ceasing efforts of the members of the 13th Engineer Combat Battalion.

On the 11th of July, a decision was made that the outpost was of no further value and had served its purpose—that of stemming a Chinese attack which most certainly would have smashed into our Main Battle

Positions had the Reds been able to overrun *Porkchop* in their initial attack. The enemy expended three of his regiments and, in so doing, was now unable to attempt penetration of our Main Line of Resistance.

The Reds had been stopped cold—the outpost had served its purpose. An entire Chinese division was wiped

out by defenders on a company sized outpost. Now came the ticklish business—evacuation of the defenders and the demolition of the fortifications on "the Chop." Here was the vital test. Could the daring maneuver be pulled off right under the muzzles of the Chinese guns in daylight? *It was!*

The APC's brought out engineer demolition teams and began evacuation of elements of the 32d Infantry Regiment, which had taken over the defense of the sector from the 17th. Friendly artillery and tanks shifted their fires closer and closer until finally they were falling on the outpost itself. As mortar and artillery rounds peppered the flaming battleground, the APC's rumbled up "the Chop" to the remaining defenders. The steel fortresses backed right up to the caves and bunkers and the Infantry climbed aboard. So skillful was the evacuation that intelligence reported the Chinese were confused to the point of believing that reinforcements were being brought to the outpost, and that our artillery was mistakenly firing on our own men. The engineers set their demolitions and they too were brought back in the APC's. *Porkchop* had been successfully defended and successfully evacuated. Terming the bold withdrawal an "historical example of skillful abandonment," General Trudeau said, "with the M39 it would have been extremely difficult. Without either type it would have been impossible."

? The M75 did the job it was designed to do and performed all through the action in a manner that left little to be desired. It hauled men and supplies, evacuated the wounded and the dead and proved itself to be a fine vehicle from the maintenance standpoint. The vehicle does need some minor modifications; however, the real test of any piece of equipment is whether the men who use it have confidence in it or not. Without exception, those who operated or utilized the M75 praised it highly as a fine vehicle and a lifesaver during its baptism in combat. The best recommendation for the M75 comes from the heroic defenders of "the Chop." For further evidence of its worth just "ask the man who rode one."



U.S. Army

The M39 Armored Personnel Carrier, although not as effective, assisted greatly.



# TEN WISELY LED

*"Ten good soldiers wisely led will  
beat a hundred without a head"*

by

CARDED

LIEUTENANT COLONEL GEORGE B. PICKETT, JR.



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**A**LTHOUGH no one doubts the logic of that little expression, reams have been written on how to lead the ten good soldiers wisely. Almost everyone has his own pet theory of leadership; yet there are certain basic characteristics that all good leaders seem to have in common, varying only with their individual personality traits.

### Moral Strength

One of the basic qualities required of a leader is moral strength. "Moral strength" is cited as a prerequisite of a good leader instead of the more usual expression "moral courage." Most of us judge "moral courage" as the willingness to make decisions affecting men's lives without qualms; but "moral strength" goes yet further. The incident that won U. S. Grant his Colonelcy shows that the men demand it. At the first sign of approaching combat, the officers and men of the 21st Illinois Regiment refused to serve under the "Good Joe" who had been drinking and hell-raising with them. They demanded a man with moral strength to whom they could entrust their lives. The Governor of Illinois chose Grant. History confirmed his choice.

Many of us have heard expressions like "old Bill drinks a lot of whiskey, but he'll be a whiz in combat." In all probability he will drink too much whiskey there, too. The exception is so infrequent that it attracts the attention that gives rise to the expression. Any psychologist will tell you that the average alcoholic drinks out of a sense of insufficiency or inferiority, certainly not qualities conducive to leadership. But drinking is only one moral problem. Ask yourselves which units had the most trouble on Occupation duty? Here the "follow me" idea applies. A leader cannot lead a dissolute and immoral life and expect his men to do otherwise.

In addition to the good behavior aspects, moral strength also implies faith in the cause and a conviction of fighting for some desirable end rather than mere conquest. The German disintegration at Stalingrad snowballed when the men of the Wehrmacht be-

gan to wonder if Herr Hitler was worth dying for and if the Vaterland was morally correct in her Russian venture.

### Physical Courage

At the Battle of Franklin in November 1864, five Confederate Generals were killed fighting in the leading waves of the charge. Their commanders felt that the men in ranks had lost their offensive drive and tried to offset it by personal example and "follow me." But Civil War field and general officers could influence their men by leading them forward. Now deployment is so great that similar efforts reduce generals to platoon leaders. There may be times when a senior commander must expose him-



Library of Congress

GRANT

The subordinates made the demands. The Governor made a wise choice.

self to almost certain injury or death in modern war, but these occasions are extremely rare. A dead senior commander is useless to his men.

### Initiative

The ability to recognize the key to a situation and take the timely action to correct the error or exploit the opportunity is the initiative required in a good leader. Timidity, uncertainty, and the fear of an adverse reaction and the resultant poor efficiency report from superiors is its antithesis. Petersburg, Virginia, in May, 1864, was the scene of the opposite extremes of initiative and its lack. The multitude of the Union Army of the James was moving on Petersburg almost un-

opposed from the east. Without knowledge of this advance, a Confederate General had stopped in the city to visit his bride. When word reached him of the approaching Yankees, he rounded up convalescent wounded, called out the home guard, and on his own initiative manned the Petersburg defenses with a quasi-military force of cripples, old men, and young boys. So determined were his efforts that the well-armed and well-fed host of the Army of the James were convinced that Lee's veterans were facing them. Their commander became panicky and slowed his assaults. Before he recovered his moral strength, General Beauregard arrived with enough veteran Confederates to establish an adequate defense. The visiting Confederate General turned over the defense to Beauregard and then moved on to join Lee, leaving Petersburg as a Confederate bastion that required eleven months and 50,000 more Union casualties to reduce. That was initiative, coupled with determination.

### Knowledge

Knowledge is such a self-evident requirement for leadership that little need be said to illustrate it. Whether it is the result of formal schooling or "hard knocks" is immaterial. For example, Forrest's "Hit 'em on the end" is just as effective, if executed, as the more schoolish "envelop the strategic flank," and "Get thar fustest with the mostest" is as effective, if accomplished, as "Concentrate at the decisive point."

### Identification of Leader With the Unit

Robert E. Lee surrendered on 9 April '65. Immediately the Confederacy collapsed. Why? Because Lee was the motivating force of the Confederate Army. Members of his Army of Northern Virginia never referred to themselves as "members of the Army of Northern Virginia" but as part of "Lee's Army." If you pushed them they would also tell you that they belonged to "Hood's Division" of "Longstreet's Corps." They prided themselves on their leaders. However, these stalwarts were just as quick to ridicule what they considered mediocrity. After returning to Lee's Army from service in East Tennessee, Longstreet's men told some of their with-

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drawing comrades at the Battle of the Wilderness that they "acted like Bragg's men." This reflected their opinion of the Confederates who had faced Grant at Chattanooga. But this identification of the commander with his men did not end with the Civil War. The Third US Army in Europe was more often referred to as "Patton's Third Army" than just "Third Army." If an outfit is referred to by its members as "Dingblatt's" battalion or "Dingblatt's 6th Tank"—Dingblatt is well on the road to success.

Even the foe respects a good leader. When Grant assumed command in the East in 1864, the veterans of the Army of the Potomac were prompt to remark, "He hasn't met Bobbie Lee yet." In North Africa in '40 and '41, the British used to refer to any clever act as a "Rommel." They had to be ordered to stop giving Rommel credit for being almost superhuman.

### Cooperation

Many historians maintain that Longstreet's ill-fated absence from Chattanooga in Nov.-Dec. 1863 was primarily because he wasn't able to get along with Bragg or vice versa. This lack of wholehearted cooperation cost Bragg the use of the most veteran Corps and Corps Commander in the Confederate Army during a critical period. Grant, in his memoirs, alleges that when Bragg was a lieutenant, he once found himself serving as both a Company Commander and as Post Quartermaster. He describes how Bragg started a batch of hot correspondence between himself as Company Commander and himself as Post Quartermaster. Insults multiplied on each side. Bragg finally got so worked up with himself in his alter ego's that he indorsed the whole proceedings to the Post Commander for a decision. That fine old gentleman replied, "Mr. Bragg, you've not only argued with every officer in the Army, you're now arguing with yourself." Then came Chattanooga. No matter how brilliant an individual may be, he is doomed to failure if he cannot get the enthusiastic support of his juniors and the wholehearted cooperation of his peers.

### Interest

If a commander can gain and maintain the interest, zeal, and enthusiasm of his men, then his mission will be



U.S. Army

### PATTON

It was better known as "Patton's Third Army"—Not just the Third Army.

accomplished. This is one of the big "ifs" of leadership. Inspiring speeches will not accomplish it. They went out with Napoleon. The personal eye-to-eye contact of "speaker to audience" is no longer possible unless the higher commanders are able to give the talk over and over to small groups. Today this is virtually impossible. Moreover, copies of a written speech are relatively useless as inspiration regardless of how they sound to the historian. Has anyone ever been inspired in a foxhole by an Army Commander's printed speech? But there are other methods, such as competition between units, rewards for achievements, sensible promotion



U.S. Army

### RIDGWAY

Outstanding leadership in combat and peace earned him his present position.

policies, reasonable rotation policies, and taking care of "creature comforts." These methods are more interest-maintaining than any "inspiring" written speech.

### Tricks of the Trade

As in all professions, there are a few well-established general "tricks of the trade" and a few others that may apply only to a specific individual or situation. For example, take the "showman" type of leader. The pearl-handled pistols of the beloved George S. Patton and General Ridgway's grenades will continue to inspire men to adopt a distinctive "trade-mark." Many have since tried this technique, but most have failed miserably. If a leader intends to use a "trade-mark" to make himself noticed and discussed, he should not select some obviously ridiculous weapon or gadget. For example, how many Lieutenant Generals would ever use a bowie knife? Picture some would-be "Patton-type" swaggering around a combat theatre clutching a bowie knife or some equally absurd ornament for a man who would have about one possibility in a million of using it. The troops would soon recognize the fraud.

Yet showmanship can be and has been used effectively. Although Patton was the greatest example of our era, Napoleon possessed marked traits as a showman and prided himself on his theatrical ability. His addresses to his troops before a battle well illustrate his ability as a speaker and a consummate showman. He became famous for his "old green coat" and wide black hat with the upturned brim fore and aft. When he returned to Paris from Elba, his troops were disappointed that he was wearing Imperial regalia, complete with ostrich plumes, instead of his "old green coat." He had lost the "touch" in lofty places. But Napoleon had made the "old green coat"; it had not made Napoleon. After a leader has earned his salt, the "old green coat" will be supplied by the troops.

Of great importance to all leaders and commanders is the ability to put their ideas and desires across to the people who must implement them without danger of being misunderstood. In this modern age of mass education, this can best be done by effective speaking and writing. Notice



the expression is "put ideas across." We have already observed how ineffective this means is as "inspiration." The effective speaker and writer has marked leadership advantages if he uses this ability properly and has the other prerequisites.

There are many other "tricks" used by good leaders, but experience in Korea during the "UN withdrawal from North Korea" during Nov.-Dec. 1950 shows how understanding of little "creature comfort" problems can be used effectively by a good leader. During the cold, bleak, miserable days of late November and early December 1950, a large group of men became stragglers, many through no fault of their own and others due to poor leadership. These men automatically navigated to the closest kitchen serving a hot meal. After observing this, some officers placed kitchens at convergent points along lines of drift. Stragglers, stopping to get a meal, were "unscrambled" and returned to their units. Some units actually were re-assembled in this manner. By checking the kitchen and chow line during a debacle, and gathering up the stragglers, a leader can return many men to their units or integrate them into his outfit. Every good commander in history has realized that "hot food" is a weapon in his hand. "An army travels on its stomach" has been an axiom since 1803 and "hard-tack" was the daily gripe of the Union soldier en route to Vicksburg with Grant in 1863. Lee's men used to say there were two sides in the Civil War, the "Feds" and the "Corn-Feds." Food is an instrument of leadership if properly used.

### Keep Subordinates Informed

The motion picture "Quo Vadis" opens by showing a victorious Roman Legion marching home after three years of foreign service. Just as it reaches the hill overlooking Rome, a Praetorian Guard arrives with a message telling the Commander to halt in place for the night and remain there until he receives further orders. No reason or background was given for the order. The Commander complied; but he personally roared into Rome in a rage to see Nero, the Emperor. There he found that the Emperor planned a glorious triumph for his unit on the following day. The Emperor turned to the Commander

of the Praetorian Guards and said, "I told you to tell him." That worthy replied, "Caesar doesn't have to give his reasons to anyone." Maybe not Caesar, but Americans do not spring from a society with an Emperor. There may be some things that are better not told to the men; but remember, if a man knows the purpose behind his mission and the background of the situation, he can react far more efficiently than if he is working in the dark. His faith in his leaders is far greater when he knows why he must do something than when he is treated as an unreasoning instrument.

This requires the leader not to ex-



Library of Congress

### NAPOLÉON

His showmanship and personal pride permeated all his subordinate combat units.

cuse or justify his orders, but merely to clarify their intent and purpose. There should never be any question about who is the boss, and certainly there should never be an apology for an order; but demanding blind obedience destroys initiative and creates resentment. The principle that an informed soldier is an efficient soldier should not be overlooked.

### Competition

Americans thrive on competition. From earliest childhood to the grave the American system is based on the survival of the fittest and the idea that all men are created equal with equal opportunity. No one has a position of leadership by birth, but everyone has a chance to attain it. This applies

in every field and walk of life, from business, commerce, and industry, to things military. Americans are a race of sportsmen. The will to win is instilled from birth. Every American wants to be on the winning team, and it is the duty of the leader to keep him on a winning team. Not to self-destruction or detriment of other teams, but to attain the natural esprit and pride in "our team." There are many team captains. How many instill a spirit of teamwork, cooperation, and enthusiasm in their team?

### Duty Above Self

Everyone has a tendency to look back as he grows older and say "The Corps has gone to hell," but one professional attribute that has slid and is still plunging like a bull on a ski slide is the concept of "duty above self." The majority of officers still put their duty and responsibility above petty politicking, stabbing their contemporaries in the back, jockeying for position, and personal desires; but the group is diminishing instead of increasing. Once again it's a "follow me" problem. If the leader sets a good example, pleasure is subordinated to duty; if not, duty is subordinated to pleasure.

### Leadership Is Not Black Magic

Unfortunately, as with so many other "ex-" military problems taken over by civilian "experts" since World War II, leadership is now being approached as a major subject requiring great study under psychologists and special and elaborate training at our service schools. It is true that understanding human nature is a great help, that "horrible examples" help show us what not to do, and certain procedures and tricks of the trade can be taught, but the approach to leadership training should be to make it seem easy instead of complicated. Making it seem difficult destroys the will of some to even attempt to learn. One of the finest dissertations on the subject ever presented to an American officer audience was given to a graduating OCS (OTS) class at Fort Sheridan in 1917 by a (then) Major C. A. Bach. His closing words were, "know your men—know your business—know yourself." That is still the best leadership formula that can be found. However, we can add one thought: "Black Magic is not required."



# LO, THE POOR HOMESTEADER

by

COLONEL ROTHWELL H. BROWN

**T**HE Korean War and the IBM machine have finally accomplished a task that was never successfully completed in all of World War II, the uprooting and dissolution of that great military clan commonly referred to as the "Homesteaders."

In the not too distant past, members of this once great and flourishing clan were spread like a thin coating of tenacious cement throughout the entire structure of the Army. Members of the clan were easily recognized, even though they wore no distinctive emblem denoting their affiliation with the organization, by the simple fact of long tenure of office and position in the same unit or locality. Hence the name "Homesteader," or those with their roots firmly implanted and embedded in the local soil, be it Tientsin, China in the "old days," or Fort Benning, or Aberdeen Proving Ground.

While the officers, and the "young bucks," searching for adventure in the army, paraded slowly from station to station, the "Homesteader," remained placidly at home. Officers came and went, platoon sergeants and corporals served their tours and departed for greener pastures, searching for more stripes, and living for the day when they too could find a berth, suitable to their grade and experience, and in turn join the ranks of the "homesteaders."

Some of our most worthy officers upon being "posted," as the British so quaintly but expressively put it, to a new unit, invariably seized a new broom in their commanding hands and began to sweep vigorously in all the dusty, or otherwise corners, of their new home. Great clouds of dust would arise, from out of which could be heard the mutterings and the low, moaning curses of the "troops." But the "homesteader" just looked on benignly. He had been through this many times before. He retired quietly and deferentially into his inner sanctum, knowing full well that the vigor of the sweeping would lessen, and that soon, far sooner than the sweeper realized, the dust clouds would settle back, and that once more, he, the

"homesteader," the only stabilizing influence in the entire unit, would be called upon to restore the status quo.

I doubt if there is today a single officer in the entire United States Army, with over 15 years active service, who does not owe in very large measure, the fruits and success of his career to one or more of the old clan of "homesteaders." How many officers they rescued from bankruptcy, by their quiet but efficient elimination of property shortages, will never be known, but certainly they are legion. If some of the property was "borrowed," for the period of stock taking, at least they knew from whom they had borrowed, and were ever prepared to rescue him from the same situation.

Again how many officers were proudly able to tell the "old man" that the company had "qualified 100%, sir" as a result of a few judicious shots fired on bolo targets, by one of the members of the clan. Though this custom was frowned upon, the "homesteaders" knew that the young officers' careers could be wrecked by the indifference and inaptitude of just one or two men in a company. This they considered to be rank injustice, and so, quietly and without any bugles blowing, they proceeded to even the score.

And how many young lieutenants are now wearing Eagles and Stars and doing them proud, all because a charter member of the clan could purr into a telephone, or directly into the "old man's" ear, "Lt. Doe, why, sir, the lieutenant went out on reconnaissance for a special company in attack problem that he is going to put on next week, sir," while knowing full well that Lt. Doe was in absolutely no shape to see the old man, having spent the previous evening at the farewell bachelor dinner of his closest friend and classmate at West Point, or perhaps he had attended a long and tearful evening at a "despedida" to bid farewell to those who would depart on tomorrow's transport, while he, poor soul, stayed on and rotted in the cursed country. From such simple things are lasting ties of loyalty formed and maintained over the years. A cement



that is never mentioned in any textbook, but one strong enough to hold for more than the 30 to 40 years of any man's army life.

The very best of the clan, the really outstanding members of the "homesteaders," drifted to, were drafted to, and finally stabilized in our school centers. The British may have created their officer corps on the playing fields of Eton, but ours was raised, nurtured, and brought to full growth in our army school system. I doubt if there is a single officer today who firmly established his reputation while he went from the Company Officers' Course, through the Advanced Course at his service school, and then went on to Leavenworth, and the War College, who does not owe a vote of thanks and a deep low bow, to those ever skillful and most patient instructors, the "homesteaders."

Granting that only our most brilliant and outstanding officers were ever detailed as "instructors" at our schools, I cannot help but wonder how some of them would have made out if they had not been supported by the faithful "homesteaders." Would their reputations have remained untarnished had they been forced to use as assistant instructors men with less than two years service, no knowledge of the army and very little interest in what they were doing? I think not, and I think that very many of our officers who have achieved pre-eminence in their profession should utter a not too silent prayer of thanks to the "homesteaders" who helped them get to where they are today.

It is almost impossible to think back over our schools and not call to mind the legendary figures that guided so many thousands of us poor students along our faltering way into the proper educational paths that led to advancement.

To name them all would be impossible. To name but a few would do injustice to too many. But as many of us look back down the years, each will remember those that were outstanding. Who will ever forget the crew that taught and demonstrated the 37mm gun at Benning? Speed, dash and precision. Every round a hit. Or the mortar crew that could drop them in a "pickle barrel." The great rifle shots and even better coaches. The machine gun crews that showed us how to make this weapon into one of the outstanding weapons in the history of American arms.

How many still remember the superb horsemen at Riley, and those great artillery batteries at Sill? Many of them were "homesteaders," *but they were soldiers, too*, and they left an indelible imprint on every officer who passed through their hands.

The Armored School, the Armored Force, and all the Armored units that were created during the war were founded upon the devotion, the skill, the knowledge and the loyalty of a small group of "homesteaders" who created the "Spirit of Armor" at Camp Meade, Maryland, moved it to Fort Benning, and finally ended their long march at Fort Knox, Kentucky in time to create the greatest mobile military force the world has ever known.

And there are thousands of officers in the army today who came up through the ranks, and under the firm discipline and real understanding of the "homesteaders" went on to become the fighting leaders of the young men of our country.

The "homesteader" could never "make a silk purse out of a sow's ear," nor did he often waste his time and energy trying, being resigned to the "orneriness" of a certain segment of our population, but thousands and thousands of young men in the army were prevented from ruining their health and their lives from "too much strong drink and too many weak women" by the knowing, firm, yet just guidance meted out by many an old "homesteader."

Personally, today, I'd feel much better if the youth of our country who are flowing through our reception and training centers, were coming under the control of the "homesteaders." Putting stripes on a man who has not been truly seasoned does not make him per se a leader of men. Stripes on a sleeve do not inspire confidence, when curious eyes discern all too readily that the wearer is unsure of himself. This lack of background, lack of knowledge and lack of confidence leads to discipline by means of the Manual for Courts-Martial.

A recruit may have "sassed" one of the "homesteaders" ONCE, but rarely twice, and the subtle but impressive series of punishments that were immediately placed in execution were not only a deterrent to the individual concerned but were clearly noted by that fringe which will follow and enlarge any breach in discipline, but which never initiate action until they are sure that their precious little hides will not suffer retribution. Such cases were never brought to the officers' attention, and Courts-Martial were left for those who could never be soldiers under any circumstances, such as the thieves, and the deserters.

But alas! The clan is dead, a sacrifice on the altar of progress and efficiency. True, a few of them are still around, but they are no longer soldiers. They are civilians, with all the rights and prerogatives of "civil service," and as such they exercise neither command nor ever watchful supervision. Yeah, verily, they have been scattered to the four winds of the world. When the IBM machines acted upon the policy that "every man must go overseas regardless of age, grace or previous servitude" the "homesteader" departed as ordered, BUT is he in the army today—H— NO!

Some went overseas, or to strange duties once, but when the IBM machines cranked them out for a second go around, they quietly folded their tents and disappeared to the little farms, the cottages, the restaurants, the small bars, the filling stations that they had been developing for many years as a last refuge, when they became too old to even "homestead."

I know that none of the old "homesteaders" ever objected to doing a full measure of duty, to include death, if that were necessary, but in my travels around the Army in the past three years I have yet to find an uprooted "homesteader" who has been assigned any job as important and as vital as the one that he was doing before the IBM machines caught up with him.

*Sic Transit Gloria Mundi.* The old order passeth, but those of us who served with the "Homesteaders," salute them for a job well done that will linger in our memories and our hearts forever. May the new order, the new generation, be as fortunate in the years ahead as we were, but somehow we doubt it. Tradition, blighted under the cloak of efficiency, dies hard, but will be even harder to revive.





U.S. Army

An M48, getting an assist from an 18-inch searchlight, during night firing. This photo was taken from about 40 yards.

CARDED

# Tank Searchlights

by

MAJOR JOHN L. FELLOWS, JR.





A view of searchlights from the side of the enemy. What is the distance? Please note that you can see nothing else. U.S. Army

*The advantages and disadvantages of artificial illumination as an assist on the battlefield have been discussed many times. Here the author, who served with CDL tank units from their embryonic stage up to and including combat testing, speaks out on the value of the tank-mounted searchlights to aid the tactical commander on the battlefield in the attack and defense during night operations.*

**T**ANK-mounted searchlights have been employed in action in Korea with astonishing success to provide direct visible illumination for aimed fire. These new weapons were used because a requirement for any and all forms of illumination was immediately apparent during all periods of the fighting in Korea. Night operations had become the rule.

It has been stated that the enemy uses the cover of darkness for his attacks in order to "take advantage of the surprise and confusion gained." This statement appears to be falla-

cious. Certainly surprise is a desirable factor to be obtained at any time in battle. The factor of confusion, however, belongs to both sides to a greater or less degree. When a night attack is launched, a large number of factors immediately take effect. Direction is extremely difficult to maintain. Cohesion and communication are also difficult to maintain.

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Supporting fires tend to become less accurate. Time and distance are hard to reckon. As a matter of fact, confusion within the attacking force is certain.

Contrast this with a properly prepared defensive position. Here each man knows where he is and what his field of fire covers. The unit communications are well established. The final protective line is prepared. Artillery concentrations and barrages are set. Tactical wire, trip flares, listening posts, and all other defensive measures are in place. It is difficult therefore to surprise a well prepared defensive



unit. They might be overwhelmed; they might be by-passed; but certainly they are less likely to be confused than is the attacking force.

There are two reasons for the use of night attacks. One, of course, is to maintain momentum and to retain the initiative, particularly against a disorganized enemy. The other is to take advantage of the cover of darkness to avoid the aimed repelling fires of the defense.

The communist leaders in Korea were cognizant of this and the standing operating procedure of attacking under cover of darkness was established. This procedure permitted them to minimize the effects of the superior firepower of the United Nations forces. Attacking in great mass and using the simple expedient of avoiding the piles of bodies in front of them, the inevitable weakness of the defensive position was discovered and the objective taken. Since life was a cheap commodity and victory desirable, these tactics were constantly repeated.

As a result our troops demanded all available means of illumination and began to improvise their own methods. Drums of gasoline were set afire in key positions throughout the night. Illumination from burning houses, piles of brush, and even burning vehicles was utilized. Instances were recorded where tanks used illumination from their headlights and spotlights to successfully drive off attacks. It became apparent that a form of direct illumination was required. Action then began in research and development channels where the wheels grind slowly to the objective.

Oddly enough, the use of searchlights to provide direct illumination on the battlefield is not new. A perusal of the writings of Major General J. F. C. Fuller and others, shows us a long record of the employment of direct visible illumination to gain success in night operations. The first use of searchlights occurred during the siege of Fort Wagner, Charleston, South Carolina, in 1863.\* They were also used in the Spanish-American War in 1898 by naval forces, in the Russo-Japanese War in 1905 by land forces, and in the Gallipoli campaign of World War I by both land and naval forces.\* After each instance

of successful employment of direct visible illumination in battle, the means to provide this illumination disappeared from the military forces of the world. With one exception, no planning on a major scale was undertaken to take advantage of this weapon to fight around the clock, even in darkness, as other developments had allowed us to fight around the calendar and around the world, even in bad weather.

The one exception was the establishment of a number of special weap-

men who had served with the Special Training Group at Fort Knox, Kentucky, or later with the 9th and 19th Armored Groups in the Arizona desert and the mountains of Wales. To some it was an escape from the endless training and strict security which did not allow anyone to call even one minute his own. To others it meant the frustration which follows the abandonment of plans resulting from a two-year effort based on what seemed to them to be a weapon of great possibility. Fortunately, the



Showing the area and range of vision provided by the 18-inch searchlight. U.S. Army

ons battalions by both the U. S. and U. K. on a Top Secret level during World War II. These vehicles, now unclassified, were known as CDL's and consisted of a Grant M3 medium tank with a special turret containing a carbon arc light source. The six U. S. Medium Tank Battalions, Special, trained under maximum security conditions equalled only by the Manhattan project. However, none of these units was ever employed in the role for which they were intended.

The disbandment of the CDL project in 1944 was greeted with mixed emotions by the 7,000 officers and

work done on the CDL project was not entirely wasted because it formed a foundation upon which the successful use of tank searchlights in Korea was built.

The first action on the request from the Eighth Army in Korea for a means of direct visible illumination resulted in the adaptation of an 18-inch commercial searchlight. A tank was selected as the carrier since it is the only vehicle readily available on the battlefield capable of providing a source of electric power. By mounting the searchlight on the gun mantlet and boresighting it with the

\*Major General J. F. C. Fuller, 20 Oct. 36, "The Attack by Illumination."



gunner's sights, no separate controls were required. In order to aim the searchlight in elevation and deflection it was only necessary to utilize the gun and turret controls. The excellent communications provided all armor units also served to control the illumination. This is a very critical factor, as will be pointed out.

Parallel development was also started on a new type CDL based on the M4A3 medium tank which would provide an armor protected light source. This proposed vehicle

to be solved to the satisfaction of everyone concerned. This was the question of vulnerability of the unarmored searchlight mounted in an exposed position on the gun mantlet. Despite tests of the searchlight under fire at Fort Knox which tended to prove that the searchlights were relatively invulnerable to small arms and high explosive artillery fire, certain people held that any light on the battlefield would be quickly shot out by the enemy. This view is definitely not correct.

searchlight will not be employed either in the offense or defense without taking evasive action. It is not visualized that the tank searchlight will be employed continuously from the time the sun goes down until the time it reappears in the morning. Rather the illumination capability should be retained until a time of decision is apparent. This critical period is well known to be of very short duration in the attack as well as the defense. The short period required for illumination limits the time the enemy can engage the target, and when the requirement ends the searchlight tanks can move to alternate positions if necessary.

The modified 18-inch commercial searchlight is equipped with a shutter controlled from inside the turret by the tank commander or gunner. This shutter is electrically operated by a solenoid and the intervals of illumination can be varied to suit any tactical situation. Therefore, the light can be flickered on and off to confuse the enemy thus providing maximum evasive action. All these factors combine to reduce the losses of tank searchlights in battle even when they are unarmored and exposed. Since the item is not considered expensive in comparison with other weapons, these searchlights can be considered expendable. Only a few of these lights have been lost in actual combat, and some of these were by mere chance hits when the enemy had no knowledge they were in the area. In most cases they were readily repaired and back in action in a few hours.

Certain other capabilities of the tank-mounted searchlights are worthy of consideration. It must be kept in mind that the addition of a searchlight does not alter the fact that the carrier vehicle is still a tank and should be employed as such. We know that the present tank searchlight can provide sufficient illumination for aimed fire of all supporting weapons at useful combat ranges. The light beam produces a dazzling or blinding effect in the eyes of the enemy which hampers his aim and movement, and temporarily destroys his night vision. It provides a "Cloak of Darkness" behind the source of light which provides concealment for movement of tanks and infantry. It is relatively invulnerable to small arms fire and high explosive artillery



U.S. Army

The carbon-arc light is emitted through the vertical opening in the turret.

would also have mounted in the turret a 75-mm Gun, M6. Technical difficulties slowed down this development, and when cost estimates were evaluated it was found that approximately four medium tank battalions could be equipped with the proposed 18-inch searchlight for the cost of one (yes, one) new type CDL tank. For this and other reasons, efforts were concentrated on the modification of the commercial searchlight for use on all tanks, and by March, 1952, these were ready for shipment to Korea.

One major problem still remained

The factors which affect the vulnerability of tank searchlights are numerous. Since range estimation is normally based on what can be seen of the terrain, it is difficult to estimate range when you cannot see the terrain. Such is the case with the tank searchlight. All that is seen, when looking at the searchlight from any direction, is the focal point of a light in the sky. Nothing can be seen in the intervening distance. Therefore, range estimation which is the critical factor in all gunnery, is extremely difficult.

It must also be noted that the



fire because of the extreme difficulty in estimating range to the source of light. The searchlight can be traversed and elevated in the same manner as the main armament.

The most important point is the fact that this is the only form of illumination which does not help the enemy at all while it provides almost daylight conditions for friendly troops. Properly employed at the decisive moment it can create havoc in the ranks of the enemy.

Certain limitations of this weapon have become apparent. An uninterrupted line of sight from light source to target area is necessary to provide illumination on that target. Fog, smoke, or heavy dust restricts the passage of light beams from the searchlight. The source of light is plainly visible from all directions. The main armament is limited to firing down the beam since the main armament and the searchlight are mounted coaxially. The searchlight tank is vulnerable to fire from flat trajectory weapons equipped with suitable night sighting devices, while the searchlight is illuminating. These limitations are serious enough to be carefully considered in planning for the use of tank searchlights.

Illumination for combat can be divided into two modes. The first is *movement light* which is light of sufficient intensity to illuminate an area so that troops can avoid obstacles and maintain direction. Moonlight or "Artificial Moonlight" can properly be called *movement light*. The tank searchlight will not provide, from a covered position, sufficient illumination of this type for normal use.

The second mode of illumination is *fighting light* which is light of sufficient intensity to provide illumination for aimed fire and the destruction of enemy targets. The use of flares, illuminating shells, or tank-mounted searchlights is an example of *fighting light*. It is the mission of the tank-mounted searchlight to provide *fighting light*. It is not the intention of this article to discuss all forms of illumination though each has its place on the battlefield.

A night operation using tank-mounted searchlights should first be planned as an ordinary night attack or night defense. The searchlights should then be utilized to gain the maximum value of the direct illumi-

nation provided. Certain factors must be considered as follows:

1. Objectives and areas to be illuminated and their priority or sequence.

2. Duration of illumination.

3. Integration of searchlight support into the fire support plan.

4. Action to be taken if countermeasures are employed by the enemy. The decision to douse the lights will ordinarily rest with the commander of the supported troops since only they can tell if the illumination continues to be useful.

5. Communications and control of illumination. Since the direct visible illumination is of most value at the decisive moment, no delays or premature disclosure can be tolerated. The communication system must include proper authentication to avoid unfavorable breaches in security.

In the offense, the tank searchlights may be employed in the following roles:

1. In a night penetration as part of the assault wave, to conceal the movement of the accompanying tanks and infantry in the cloak of darkness behind the source of light.

2. In an envelopment at night as part of the base of fire, to illuminate the objective at the proper time.

3. In an envelopment at night as part of the maneuver force, to screen the movement of this force when it is discovered by the enemy. This use will also assist in maintaining orientation and direction.

4. In a turning movement, to increase the depth of operation because of the increased range of operation at night by the tank-mounted searchlights.

The tank-mounted searchlights may be employed in the following defensive roles:

1. To support the main line of resistance at night by covering likely avenues of approach for enemy troops and armored vehicles. As noted before, consideration must be given to supplementary as well as alternate positions so that the searchlights may be moved during the night to prevent exact location and destruction by the enemy.

2. To counterattack a hostile

penetration at night or support a counterattack of a hostile penetration at night from a blocking position.

3. To attack hostile forces in front of a defensive position at night.

It is visualized that the primary role of the tank searchlight in the defense is to furnish illumination on the main line of resistance for aimed fire against the "Human Sea" type of assault employed by the communist forces in Korea in their normal night attacks.

The smallest effective unit to employ the searchlights tactically is the tank platoon. This makes available a sufficient quantity of lights so that proper illumination can be utilized, and still allows evasive action to be taken. The platoon also has the required communications and control from the platoon leader. The two sections should be mutually supporting and the platoon leader's tank will normally remain dark. At least a platoon of tank searchlights will support a reinforced tank or infantry battalion in the attack. A platoon of tank searchlights will normally support the reinforced tank or infantry company which holds the key position in a battalion defensive zone.

In the attack, movement by the illuminating tanks will be done by bounds. Normally, one section will illuminate from position while the other section moves under the cloak of darkness. A dark tank can move a considerable distance in front of an illuminating tank without becoming visible to the enemy. However, a tank on fairly level terrain can hold illumination on an objective if the tank maintains a low rate of speed. This could be very useful in some situations.

Probably the most critical decision a field commander has to make in combat is when to commit his reserve or his uncommitted forces. Success or failure generally hinges on this decision and it is complicated by the limitations of time, space, and meager information. The proper time and place to provide illumination poses the same type of critical decision. If a commander "tips his hand" too soon he may allow the enemy to reroute the main effort and successfully employ countermeasures. At least, he furnishes the enemy a great deal of





U.S. Army

The 18-inch searchlight mounted on the mantlet of an M48. Note tank is firing.

valuable information for planning purposes. If the commander delays too long, he may find himself facing such overwhelming numbers that accurate, aimed fire of his supporting weapons will not deter or delay the opposition in their attack.

It is important for the commander to withhold illumination until the enemy has committed himself in the attack to a line of action beyond which he can only succeed or fail. It is at this moment that the outcome of the battle is in balance. The application of direct visible illumination at this point permits all organic and supporting weapons to fire accurate, aimed repelling fires under conditions closely approximating daylight while the enemy must continue to advance into devastating fire, blinded and terrified, feeling naked and insecure. Who can doubt the outcome of this action?

Tank-mounted searchlights can also be utilized to good advantage in the employment of other weapons. The 1st Marine Tank Battalion used tank searchlights in Korea to escort mechanized flamethrowers during a night attack. The flamethrowers, unseen by the enemy, moved to the objective under the cloak of darkness. When the flamethrowers opened up, complete surprise was obtained; and a

well-entrenched superior enemy force withdrew in haste and confusion. It was ingeniously devised and a very successful operation.

Tank searchlights also can be used to mark targets for close support air action. An intersection of beams clearly marks an objective, and a line of tank searchlights clearly defines a bomb line. Of course, illumination should not be made until immediately prior to the air attack. Obviously, premature disclosure could nullify results; therefore, other methods must be used to get the aircraft in the proper zone.

The 245th Tank Battalion under the command of Lt. Col. C. W. Walson was the first unit to use the tank searchlights in combat. On the night of 16-17 June 1952, at 2345, the lights were used against the enemy from a defensive position. The details of the action are not significant except that it was a successful defense by our troops. After the attack was repulsed, the searchlights doused, and the defensive fires lifted to harassing and interdicting fires, the most notable happening to those of us present was the complete and ominous silence. We could almost hear the wheels turn in the heads of the local communist leaders. After a short period a few exploratory rounds of enemy artillery

landed on the floor of the valley, obviously looking for the tank searchlights, although none landed closer than a thousand yards.

It was an important moment in military history, and the author was much honored to be present. Thoughts were present of the leaders of the movement for direct illumination such as Generals Martel and Fuller, and Brigadier Price of the United Kingdom and Colonels Fred Thompson, Joseph Gilbreath, and Walter Burnside of the United States and the thousands of officers and men, both American and British, who worked with and believed in the CDL tanks during World War II. At last and here at hand was an opportunity to establish once and for all time the fact that direct visible illumination was a great and useful weapon for the battlefield.

Although the opportunity to use searchlights in Korea was limited to a few major actions, such battle-grounds as White Horse Mountain, Eerie, Hill 191, The T, and Bunker Hill, helped to establish the worth of this weapon. Probably the most successful action occurred near the end of the war in May 1953. Here the 1st Marine Tank Battalion, supporting a Turkish Brigade by fire and illumination in a defensive action, helped to kill over 700 enemy in several attacks from dusk to dawn. This was accomplished without the loss of a single position and with practically no casualties.

Here again we have seen overwhelming advantage gained from the employment of direct illumination in ground warfare. We must not repeat the mistakes of the past and allow this weapon to disappear from our arsenals again, possibly to reappear in the hands of an enemy of the United Nations. In the event of future hostilities, we must face the fact that round the clock fighting will be the rule rather than the exception. We must emphasize night fighting and night training. We must take advantage of all forms of illumination and in particular the tank mounted searchlight.

Remember that this form of direct illumination, in the hands of an aggressive leader of a combined arms team who can properly utilize all arms and forces available to him, can accomplish miracles in night operations.



*We are not confronted with the problem of building more tanks to achieve more Armor; rather, a need for reapportionment of what we already have. Thus we can obtain the re-*

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CARDED

# MASS

## A PRINCIPLE OF WAR

by

LIEUTENANT R. R. BATTREALL, JR.



U.S. Army

Massed Armor as shown by 2d Armored Division units, gives the tactical commander a powerful mobile striking force.



*quired "Center of Gravity" which will give the tactical commander on the battlefield, regardless of the size of his command, the necessary striking force to render a decision when the*

**A**N immutable principle of war is the employment of a preponderance of force at the critical point. We preach this principle. Are we organized to practice it?

### The Problem

Much has been written concerning the proper—or massed—employment of force. The principle is taught at our service schools. No one, indeed, argues with the principle. There is, however, an unfortunate lack of agreement as to how the principle should be applied. I submit that our nation is woefully unprepared, due to the nature of its military organization, to properly implement the Principle of Mass.

Everyone agrees that it is folly for the West to attempt to match the Soviet Nations on a man-for-man basis. We should, it is said, apply our overwhelming industrial potential to overcome the enemy's manpower with superior equipment. Nevertheless, we continue to base our thinking on the concept of Infantry as "Queen of Battles." For all the new weapons of the Infantry, this concept cannot escape its basic element, the individual soldier on foot. While proclaiming one theory, we commit ourselves to the opposite. The Infantry concept dooms us to a man-for-man competition. No amount of self-delusion about superior Infantry weapons can alter this basic fact. The shaped charge, the recoilless rifle, the automatic small arm, are all within the capability of Soviet industry to mass-produce. The question unavoidably reduces itself to the man-for-man competition in which we cannot prevail.

Take another approach to the prob-

lem. The machine gun in World War I drove the horse from the battlefield. The Infantry stood alone as the only arm capable of seizing and holding ground. But it was not the Infantry which restored the ability to reach a decision to the battlefield. It was, instead, a crude monster called a "tank." These tanks, even though not employed to their full potential, overcame the machine gun, and the mobile arm returned to dominate the battlefield. Nothing could stand against these new mounts for the mobile arm. Since World War I there have been great strides in anti-tank weapons. There have also been great strides in tanks. The basic relationship between attacking tank and defender, as expressed by the late Colonel Henry T. Cherry, remains unchanged: "The problem never has been to find a gun big enough to stop a tank. The problem is to find a man who will stay to shoot the gun." There is still nothing which can stand against tanks properly employed so as to derive the full benefits of mobility, fire power, and shock. This means but one thing—something our Army is loath to admit. The individual foot soldier has lost his primacy. He has been reduced to

a supporting role by the advent of the tank even as the horse was driven from the field by the machine gun. Our Army, then, is based on supporting troops with the decisive arm—Armor—reduced to relative impotence. Such an organization can have little hope of success.

### The Solution

The solution to this problem is apparent. We must produce Armor formations sufficiently large to act decisively at the theater level. Much of our present Infantry must be Armored to form an essential part of these formations. The remainder should provide a firm base from which Armor can operate. Standard Infantry should be used to hold areas which are not "tankable," to mop up in the wake of Armored thrusts, and to hold key terrain after its capture by Armor. This envisions Armored Corps and Armies capable of the same type of rapid, powerful action at theater level that the Armored Division now provides at the level of the "Type Field Corps." Probably the present ratio of Infantry to Armor is adequate, but the ratio needs to be elevated one or two degrees. Instead of three Infantry to one Armored Division in a



U.S. Army

Inferior in numbers and quality, they defeated their enemy by employing mass.

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*occasion arises. No additional supporting troops are required to accomplish this aim; hence, no additional costs will accrue. In short, it is but a tactical change to utilize the potential of*



The Russians turned the tide when they imitated established German principles. Sovfoto

"Type" Corps there should be three Infantry to one Armored Corps in an Army or three Infantry to one Armored Army in an Army Group. This grouping, without changing the present strength ratio, would provide an Armored "Center of Gravity" about which all operations, both friendly and enemy, would necessarily hinge.

The precedent is available for study. It is the Flanders Campaign of 1940. Here the Germans had both a quantitative and qualitative inferiority in tanks. Nevertheless, their successes were staggering. The reason is clear. The superiority of the German organization in Panzer Corps and Armies overshadowed their overall inferiority of equipment. This organization did not meet defeat until it was duplicated by the Red Army. Further, to illustrate that it was the organization and not the equipment that produced such results, the reader is reminded that the largest German tank operational at the time was the Panzer IV, a short 75mm gun tank comparable to our M24. These successes developed because the Germans made the most of what they had. Their matériel inferiority was unimportant because they always had a decisive superiority at the critical

point. The Principle of Mass was observed.

This line of thought can be carried one step further. When a sufficient amount of Armor is massed at one point, it becomes the critical point. As Field Marshal Rommel expressed it, "Armor creates a center of gravity on the battlefield." To illustrate, let me paraphrase and expand somewhat the favorite example of Guderian:

Suppose that Red and Blue each have 100 Infantry Divisions and 100 Tank Battalions. They are engaged along a front one-third of which is good, one-third fair, and one-third poor "tank country." Blue attaches his 100 Tank Battalions equally to his 100 Infantry Divisions. Thus, only one-third of his tanks are available where their full offensive power can be utilized. The remainder are in country where their mobility is more or less limited and their utility, therefore, restricted to defensive anti-tank missions in country where the employment of enemy tanks is unlikely and where the Infantry could defeat them with organic weapons since their mobility would also be seriously reduced. Red, on the other hand, masses his 100 Tank Battalions in the good "tank country" and there

commits them to the attack. They will be successful for they outnumber the defender three to one with equality of Infantry strength. They have superiority at the critical point and it is the critical point because the major attack has been launched there.

Consider these 100 Tank Battalions ranging at will through the enemy's rear areas. All other activity must cease until this annihilating threat has been met by Blue. Blue cannot launch his remaining tanks in an attack which will seriously threaten Red for two reasons: (1) To do so would be to leave his rear areas and Infantry at the mercy of Red's rampaging tanks, and (2) Blue's remaining tanks are in bad country where the Red Infantry can deal with them successfully. Blue must commit his remaining tanks in a counterattack against the Red tanks as his only hope of avoiding complete disaster. Thus, the Red tanks have created a "Center of Gravity." Wherever they go the critical point goes with them. No decision can be reached until the opposing tanks meet. Furthermore, the decision of the tank battle will be the overall decision since the victor will be able to operate without effective opposition.

#### A Means to the Solution

Large Armor formations are called impractical because of the cost. The following plan can give us our proper organization with very little, if any, additional cost. The problem is one of making the most of what is available. The production of new equipment, while essential, is secondary to the proper use of what we have.

Let us take a "Type Field Army" as an example. The same process will produce similar results in our actual formations. The "Type Army" consists of two (or more) "Type Field Corps," each of three Infantry Divisions and one Armored Division with an Armored Cavalry Regiment in each Corps and appropriate Corps



*Armor to its fullest extent by concentrating it in time rather than in space. Armor so organized in mass will provide the commander the most powerful mobile reserve to ever take the field.*

and Army Artillery and service elements. The Armored Divisions and Armored Cavalry Regiments will take their places unaltered in the new organization. What can the other units provide?

Each Infantry Division has the equivalent of two tank battalions, or twelve tank battalions in all. Since an Armored Division requires one heavy and three medium tank battalions, we have the tank strength of three additional Armored Divisions.

An Armored Division also requires three Armored Infantry Battalions. These can be provided by breaking up one Infantry Division. APC's can be partially supplied from existing stocks, but half-tracks would have to be accepted as carriers if we are unwilling to spend money on new production.

Artillery is the next basic requirement. To avoid new production we can augment Division Artillery of the disbanded Infantry Division with selected units from other Division, Corps, and Army Artillery formations. This will give us a minimum standard of Artillery support for each

division although all will not be self-propelled.

Service elements can be provided merely by reorganizing those already on hand. Remember, there are no more troops or equipment to be supported. Those available are simply being shuffled.

The final element is command. This presents no problem whatsoever since, as pointed out in recent issues of this journal, we have a wealth of qualified commanders.

### Employment

If these measures are accomplished, what are we to do with the four Armored Divisions, five Infantry Divisions, and two Armored Cavalry Regiments which we will possess? Obviously, the Armor must be employed so as to create the "Center of Gravity" mentioned above to prevent our now tank-less Infantry from being mauled. One answer is organization into two Armored Corps of two Armored Divisions, an Infantry Division, and an Armored Cavalry Regiment each and an Infantry Corps of three Divisions. (One Armored Cav-

alry Battalion habitually could be attached to the leading Armored Division of the Corps, thus partially compensating for the lack of an organic battalion in the three new divisions.)

The Armor should be held back initially and concentrated in time rather than in space so as to offer a poor target for air and/or atomic attack.

The Infantry should hold vital locations (communications and industrial centers, etc.) and key terrain designed to channelize an enemy advance.

The Armored Cavalry should screen the entire front. When the main effort has been identified (and channelized) the Armor should be massed rapidly, using its inherent mobility, and committed either to a direct counterattack or to an attack on some objective designed to cause the enemy to break off his own offensive and counter our threat.

The observant reader will have noted that this is simply the "Mobile Defense" with an Infantry Corps providing the outpost system of strong points and every available scrap of Armor organized effectively under one command, used as the most powerful mobile reserve ever to take the field.

### Summary

A man-for-man competition in a conventional linear struggle between ourselves and the Red Army offers little hope of success. To avoid this type of competition we must make the most effective possible use of the equipment at hand. We must so organize as to be able to employ a predominance of force at the critical point at any time. We are not so organized today. To avoid disaster, we must divest ourselves of outmoded concepts and act, boldly and soon. As Secretary of War Patterson once said, "The ideal officer is not afraid of anything—not even a new idea."



U.S. Army

Reaching the critical point at proper time, the enemy's rear area is endangered.



*When we speak of Genghis Khan and his hordes many people think of his army as a mob of barbarians who ran wild and defeated their enemies with superior numbers. However, this was not the case as his hordes were organized into highly trained corps and armies who always kept their mobility intact and their armor light. By using quick thrusts and flanking attacks he defeated armies which were supposedly the best equipped and the best trained armies to be found in Asia and Europe at that time.*

**GUARDED**

# AND STILL THE WEST WON'T LEARN!

by **CAPTAIN CHARLES A. DICKEY, JR.**

**I**N 1227, after sweeping across eastern Europe, a victorious enemy spared central Europe. This narrow escape should have been warning enough, for the victors hadn't renounced conquest.

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Internal problems of the ruling family were responsible for the invaders turning back. A kurultai, great council of princes and generals, had been called by the overlord of all the vast reaches of the northern Eurasian continent.

This huge empire, stretching from the Ukraine to the Pacific and from the Arctic ice to the Persian Gulf, was forged in a single lifetime against

impossible odds with one unbeatable weapon.

That conqueror was Genghis Khan. His weapon—mobility.

Despite that sweep to the gates of Europe in 1227, when the conquest was renewed Europe was no more ready than before. The West refused to learn.

Genghis' death later in 1227 delayed the return of the Mongol hordes

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for 15 years (and possibly lulled Europe's bickering rulers). Europe built its armies around the massively armored knight riding a heavy, ungainly horse. It took such a huge and clumsy horse to bear the weight of these iron-sheathed and imposing warriors.

Europe looked to the comfort of these nobles and knights, carrying the necessary food and forage in large, cumbersome carts protected by crossbowmen and men-at-arms. And these knights and their horses required plenty of food and forage.

How could anything stand against such an array? Their armor was thick, their arms strong. The knights were mounted, their supplies rolled on wheels.

How did Genghis Khan build an army of short-statured nomads, poorly armored, that could defeat the flower of European chivalry? How could he weld an empire of pagan peoples which he and his descendants were to rule for 150 years?

A search for answers to such questions brings a little light to the darkness surrounding these mobile divisions which conquered all the world they considered worth taking.

#### **Present-Day Soviet Rule Similar to the Khan's**

In our preoccupation with Western wars, we tend to overlook the even more ancient and more luxurious civilizations of Asia. And we overlook the remarkable similarities between the present Soviet empire and the progression of soldier-nations of Tartary, as it was often misnamed by Europeans.

And we continue to overlook the reasons for Tartar successes. The Soviets have adopted many of the nomads' expedients of war. Already the Soviets rule over much the same area as that controlled by the khans. In similar manner they have expropriated the scientists, the engineers, the learning of their conquered subjects.

It hardly seems likely that such parallels are all accidental or coincidental. And if the Soviets come to realize the reasons behind the successes of the khans, the free world is in fair way of kneeling under the heel of new Mongol hordes.

For the Asian nomads were the first great masters of mobile warfare. Fear and rationalization for defeats

have built up exactly contrary beliefs about the Golden Hordes. Are we doing the same with the Soviets?

Hordes they were called in the old days. We think of a vast mass, so numerous they blanket the earth, moving slowly but implacably forward, loosely organized but irresistible. Our dictionary even defines it so.

But the word horde meant something like an army corps or field army to the nomads who coined the term. It was carefully organized and highly disciplined, at least after Genghis' time, for maneuver and for victory.

The numbers of these army corps, like the numbers of tanks in Guderian's panzer divisions, actually were modest compared to the ends achieved—and the stories told by their victims.

Not only were the hordes often outnumbered, man-for-man the Mongol soldier's enemy usually was larger and stronger and *considered himself better armed*.

Genghis Khan recognized the advantages of his enemies, their heavier armor, more powerful horses, larger weapons. In the Far East he even ran up against new weapons, gunpowder, flaming naphtha. He adopted what he found good for his methods of war. The rest he destroyed. He consistently avoided burdening his divisions with anything that would decrease their mobility.

Crossbows would pierce any armor at close range. But they were awkward and slow to fire and unsuited for mobile warfare. Heavy armor gave protection but slashed both movement and endurance. Genghis understood these fatal defects.

He kept his armor light and his mobility intact.

His men were armed with the nomad's double-curved horse bow, developed from hunting and fighting and living on the move. It was his philosophy that when the Mongols settled down in cities they must cease to rule the world, just as those they had conquered had been defeated. Just so long as they kept their mobility, and more important, their mobile-mindedness, they would rule. And so it proved to be.

The Mongol soldier fought and lived on the move. He could draw his bow from its saddle case and fire arrow after arrow with remarkable speed and accuracy while riding at full gallop. He could fire almost as well

to the rear as to the front or side.

He made up for his lighter armor by staying out of range of the heavy maces and lances of his enemy. He outmaneuvered the crossbowman.

The soldiers of Genghis thought nothing of retreating, but they only withdrew on order. In fact, the feint, retreat and counterattack was a favorite stratagem of the khans. And they were masters of the pursuit, often reopening an escape for forces under attack—then chopping them up as they fled, turning retreat into rout.

His name, too, calls up mistaken images—of a black-headed, yellow-skinned Asiatic pagan with black slant-eyes, leading a sea of fanatic, barbarian murderers.

Genghis was an Asiatic but his description departs from there. His eyes didn't slant, and they were gray-green. His hair was reddish-brown, his skin light tan. His forefathers were called the Gray-Eyed Men. They had Turkish and Iranian strains prominent in their blood.

They were the nomads who learned to tame and ride the wild, shaggy ponies of the central Asian steppes more than 3,000 years ago. They were kin to the Huns who ranged east and west in momentary raids 700 years before Genghis Khan.

#### **Tartars and Mongols**

One tribe was called Mongols. Another tribe was the Tartars. Both names were used in Europe to designate the unbeatable mobile hordes which came out of the east. This was before the various nomad tribes north of the Gobi Desert interbred to any degree with the Chinese.

All these horse nomads developed and used the short, curved horse bow and tactics of mobility and firepower which the horse and the bow made possible. Early they employed the "standard sweep," wherein the standard of the leader of one clan was carried in an enveloping movement to smash into the heart of the entourage of the leader of a rival clan.

Genghis molded these riders into units of 10s, 100s, 1,000s and divisions of 10,000. He organized their mobility into regular patterns of maneuver. He developed training programs and utilized month-long, organized hunts for game for this purpose. He armed his soldiers alike and had their arms inspected before an action,



even the needle and thread each must carry.

### Strength in Mass

The strength of a regiment or division or horde was not in its numbers, but in its organization and tactics, designed for mobile warfare. Experts generally agree that the largest army ever massed by Genghis was less than 250,000 including attached foreign troops and specialists.

But what they lacked in numbers they more than made up for in disciplined firepower and speed of maneuver.

Even more important to Genghis' unprecedented successes than tactical maneuver, however, was strategic maneuver. Marches of hundreds of miles by entire corps and lightning surprise attacks on an unsuspecting people were common, always in coordination with another corps which moved and attacked just as swiftly a thousand miles away.

The earlier nomads and generals like Baghdur about 200 B.C. and Attila in the 440s A.D. utilized tactical maneuver, the endurance of the steppe ponies and the ability of the nomad soldiers and ponies to live off almost nothing for months on end.

Genghis Khan gave the nomads strategic mobility while he clung steadfastly to the tactical mobility he inherited.

He developed regimental signal systems for soundless maneuver which confounded his enemies. Also used for signaling were long trumpets and saddle drums.

He knit together the caravan routes of Asia and organized the first pony express, with remount stations along the routes. His army corps were always in communication with the capital, a city of tents called Karakorum—or wherever Genghis was campaigning at the time.

He used scouting and spying systems to full advantage, along with "fifth columns" and "cold wars."

Genghis brought the "nomad peace" to Asia, which endured during most of the next 200 years. For he wasn't merely the destroyer his reputation would indicate. What he didn't need he destroyed. He destroyed for punishment or protection. But anything his armies could use or his people wanted, including conquered subjects, he preserved.

Unlike his Soviet successors of to-

day, he respected the merchants and protected their business to encourage trade. He realized that he could get more goods, recruits and support for his armies with sensible rule over a long period, than by occasional pillaging. The mild taxes of such rule brought ever-increasing luxury to his desert tribes.

It was said of the nomad peace that a virgin could ride with a fortune in gold from one end of the land to the other without fear of molestation.

Genghis disciplined his people, his armies, and the people he held subject. He allowed no fighting and killing and stealing in his lands.

Discipline in the army was severe. The army corps looted and sacked—but only after they were released by their commanders to do so. Each commander, whether of 10 or 10,000, was ordered to look after his men and he had to earn and retain their respect through his conduct in battle and his care of them before and after combat.

Complete destruction was famous—and seldom. Usually it was part of a "scorched earth" policy of Genghis. He taught his Mongols to leave a razed and barren area between the lands he wanted to rule and any potential invaders from outside.

After Europe was saved by the calling of the great council, the bickering kings continued their old ways, clinging to outworn feudal customs of warfare and social and military organization.

But in Asia, Genghis' son Ogadai was chosen to rule the Mongol empire. And with the settling of affairs at home, the Mongols looked again for conquest. Subodai, the general who had directed the first invasion of Europe, was anxious to look again at the strange barbarian country to the west. For at this time, Asia was far more civilized than Europe. Europe was too ignorant to realize the fact.

Genghis had tutored Subodai and made him the spearhead commander of his major campaigns. The Mongols called Subodai the Unfailing, the general without a fault.

Under the new great khan, Ogadai, Subodai began mobilizing a new army for this conquest. They made their preparations that summer of 1236 just as Genghis always had done. Then as winter approached, the Mongol divisions began to march to the west.

### Logistical Support Preceded the Army

Cattle and supplies and heavy equipment had been sent ahead over the hundreds of miles through their own territory. Among these specialists, which fell in behind beyond the frontiers, were slow-moving ox wagons carrying the knocked-down war engines and munitions for use when the Mongols couldn't draw their enemies out for open battle. With the wagons went a corps of Chinese engineers under command of a master of artillery. For the Mongols adopted the new and undependable gunpowder they found in their conquest of China. Like our atom bomb, it was a new and fearful thing. But the Mongols learned to cope with it, overcome their fear, and even adopt it for their own use. But, like other slow-moving and uncertain innovations they adopted, it was prevented from interfering with the mobility of the army corps.

The individual soldiers of the Mongol divisions carried complete personal equipment. Each had one or more remounts. He carried food and salt, a nosebag, cooking pot, wax, a file and needle and thread.

The army went equipped for a march of several years, never knowing the meaning of winter quarters. Expecting to operate in snow and cold, they took advantage of it.

Like the weapons, armor was light and serviceable—always light, utilizing much leather.

The soldier was expected to keep his metal equipment polished and oiled. His gear was planned for actual service, and for one purpose: swift movement while fighting.

The squads of 10 had been in service together for years. The first rule of the army was to bring the men in ranks back alive (the Soviets of today teach their soldiers that Americans care nothing for the lives of their individual soldiers).

This mobile force threaded through the Urals out onto the plains of eastern Europe, still Mongol territory. They were met and inspected by Subodai who had spent the winter on the frontier going over his intelligence reports on the lay of the land, the politics and defenses of the European nations facing him.

The army, at full strength now, moved on into the territory of the



Russian Slavs, stopping at the Volga that summer. Subodai rested and drilled his troops and got in a little "wet run" by thrashing the Bulgars on his north flank and sending another column to the south against Turkish tribesmen.

Then, with the first heavy snow, Subodai moved against the Russians. He herded the remnants of the Bulgars ahead of him as a screen for his Mongols. He sent envoys to demand surrender. And the Russians killed his ambassadors.

That was one sure way to bring the wrath of the Mongols down on the Russians' heads. The Mongols respected the rights of ambassadors in most cases, and always demanded respect for their own.

Ever doing the unexpected, Subodai turned away from the open plains and attacked the larger Russian cities through the forest regions. He attacked in the bitter cold of December, 1237.

The Mongols moved ahead, demanding the surrender of towns and villages as they came to them. The princes of the Slavs refused to help each other and the mobile divisions smashed them one by one.

The Russian Slavs fought hand to hand with heavy swords. They rode to battle but were too heavily equipped, and they were slowed by their following masses of armed peasantry on foot. The raids by Subodai 15 years before made no impression on their mode of fighting, and the mobile Mongols cut them to pieces.

Moscow, then only a small town, fell. A large Russian Army was destroyed on the Kolomenka River, and Vladimir, the largest stronghold in central Russia, was captured.

In the month of February, 12 walled cities fell and by the end of March the territory of the North Slavs became a vast concentration camp, and was to remain so for a long time.

One column was marching on Novgorod, a prosperous trading center, when unseasonal rains all spring and summer made Subodai decide to order the column to return. He moved his forces south to replenish the strength of the horses before the grass was gone. They followed the grass south, exploring the shores of the Black Sea and down into the Crimea. One column crossed the

Caucasus to link up with another Mongol army in Persia.

The nomad peace settled over the area, with its taxes and horse post routes.

Friction among Genghis' progeny delayed the Mongols at this point. Ogadai sent word to his sons to halt their disputes. He ordered one Kuyuk, with his son Bouri, to return to Asia. He censured Batu, nominal commander of the expedition, reminding his nephew that Subodai had won the victories, not Batu.

Batu then wanted to call off the invasion and return to the Volga with his men, but Subodai wouldn't return with him. The old general had vowed to water his horse in the Danube and intended to press on. So Batu remained with the old general.

The army was smaller now with Kuyuk's men gone and others out on occupation duty.

Some of the Turkish tribes in the south had escaped into Europe and the people would have warning of Subodai's coming.

With no more than 90,000 men, Subodai struck again that winter. Kiev was the target. These Slavs of the south made the same mistake as their northern brothers. They heard the summons to submit with its standard Mongol close, "If you do not submit, we know not what will happen. Only God knows." And the Kiev leaders killed the Mongol envoys.

The city was utterly destroyed.

The Mongols turned west, halting at the Carpathian mountains, which now divide southern Poland from Czechoslovakia and Hungary.

Across this barrier a vast army of Slavs, Poles, Croats, Magyars, Bohemians and Hungarians was slowly gathering. Teutonic Knights and French Templars were among the hosts. The Mongols indulged in a little "fifth column" work and started trouble between the Turks and the Hungarians, and stirred up a fight.

### **Mobility Was the Key to Success**

Now Subodai is ready. He knows his divisions can maneuver much faster than the Europeans. He divides his army into four columns, to move on a careful timetable.

He sends his right flank column off first, early in March, with 30,000 men under Kaidu, a daring and dependable leader, grandson of Genghis.

The column has a long arc to make around the Carpathians.

Kaidu, in accord with the custom of Genghis, is at liberty to maneuver and engage the enemy at his discretion. Kaidu sends a flanking force racing far to the north to cover his right. This column swings through the Lithuanians and Prussians almost within sight of the Baltic.

Kaidu moves carefully at first, feeling for the Poles and Slavs. After defeating this group, driving the Poles south and the Slavs west, he picks up speed and pursues to the west without delay. He storms Kracow on March 24. He strikes into German land, takes Breslau.

To his north, 30,000 Germans and their allies the Poles, strengthened by Teutonic Knights, have mustered. And a powerful Bohemian force is coming from the south by forced marches to join them.

In the tradition of great captains of mobile warfare, Kaidu somehow further increases his pace to reach the Germans before the Bohemians can come up.

By the morning of April 9, the German-Polish forces also begin to move, trying to close the gap, only to lock with the onrushing Mongols. The Germans take up position on level ground and their infantry moves forward against the Mongol formation, which pulls back. Other Mongol regiments begin to cut down the infantry with arrows from the flanks. Two divisions of Polish horsemen charge to relieve the infantry.

The Mongols throw up clouds of smoke to mask their maneuvers. The Polish horsemen become confused, and a Mongol charge starts them on the run.

The commander of the German-Polish forces charges with his reserve of armored knights and the Teutonic Crusaders. Kaidu throws his reserves into their flanks and it is soon finished. Few Germans survive.

The Bohemians, still a day away, hear of the rout. They turn back to the south, taking up a position in the defile of Glatz in the hills. The Mongols decide this is too strong to attack and feint into Bohemia, drawing the Bohemians out of the defile to defend their towns.

The Bohemians with their cumbersome array move slowly from place to place as the Mongols appear and dis-



appear. No wonder they think they are faced with a vast multitude of Mongols.

Kaidu turns back through the defile of Glatz unopposed and overruns the fertile valleys of Moravia, confounding the Bohemians and finally tricking them into marching north while the Mongols turn south to rejoin Subodai. In a month's time Kaidu's fast-striking column has covered more than 400 miles, destroyed four major cities and smashed all resistance from the Vistula to Liegnitz.

As Kaidu was starting this foray, Subodai had sent two other columns sweeping around the south flank and started with his main body of some 40,000. He set his timetable for the three columns to close at Pest on the Danube by March 17.

Subodai finds the pass across the Carpathians held by Hungarians and it takes time for his main body to clear the road. On March 12 he gets through and takes over command of the advance regiments in pursuit of the Hungarians. The pace would be tremendous for modern motorized divisions. In three days his Mongols gallop 180 miles! And by March 15, two days ahead of time, his patrols reach the Danube.

Two days later the main body comes up behind Subodai's advance regiments. It took them five days to make the 180 miles!

One of the flanking columns comes in on time and Subodai stands at the gates of Pest.

There, Bela is holding a council. The Hungarian king is discussing plans to halt the Mongols if they try to cross the Carpathians. And the Mongols already are at his gates!

#### **Mousetrap**

Subodai tries the usual Mongol tricks to draw the Hungarians out of their fortified city. Bela orders his forces to stay inside the fortifications. But one warrior-bishop, Ugolin, disobeys and attacks with his armored riders, heavily mailed men and horses.

The lightly armored Mongols drift back, putting on their feint of being frightened, across a marshy area. Ugolin charges after them and his heavy ranks bog down in the sticky earth where the Mongols rain arrows on them. Three get back with the bishop to safety.

Finally, when the bulk of his army

has crossed the Danube into Pest, the Hungarian king moves out on April 4 to challenge Subodai.

It is a huge and mighty array, 100,000 in all, facing the 60,000-odd Mongols, for the third column has now joined Subodai from the south. Subodai withdraws, leading Bela away from Pest.

After six days of slow retreat the Mongols turn. Despite a warning from an escaped prisoner, the Hungarians cannot cope with the situation. At dawn the Hungarians come out of their tents to find the Mongols encircling their camp after a swift pre-dawn march.

The Mongols move silently without attacking or firing on the camp. The Hungarian cavalry goes out against them and charges in mass. The Mongols drift away, closing in on the flanks, pouring arrows into the heavy cavalry. The horsemen retire in confusion as the circle of Mongols gets stronger. Again the Hungarians venture out, including all the Templars. Again they are slashed to ribbons and the Templars die fighting to the last man.

The masses of infantry in camp are restless and fearful now, and the Mongols move in on them, firing flaming arrows and naphtha into the close masses. At the same time the Mongols open a path through their ranks where the plain runs back west to the Danube.

Some of the Hungarians get through and the rest break for the hole.

The Mongols draw back and let them run. Then the Mongols take up the march, pacing the flanks of the fleeing 100,000. It lasted two days and 70,000 are said to have died, the retreat turning into the running fight the Mongols loved so well.

Pest tried to stand and was destroyed. Hungary was won. Kaidu closed from the north and the Mongols rested their horses on the plains of Hungary.

In four months Subodai had overrun middle Europe from the Dneiper to the Vistula near the Baltic. In two months more he had conquered to the Danube. Then in three days he destroyed the army which Poland, Hungary, Brandenburg, Saxony, Silesia and Bohemia had massed against him. His Mongols, though heavily outnumbered, had lost very few

men. Their divisions were still intact.

#### **Psychological Warfare Is Not New**

During the summer the Mongols found the Hungarian plains well suited for their needs. The Mongols resumed their fifth column and cold war operations as they rested through the summer preparing new assaults.

A forged letter in Hungarian, stamped with the captured royal seal, encouraged the Hungarians to sit tight in their towns so the Mongol patrols could round up supplies more easily.

Then came the winter and Subodai was ready to campaign again. But the bickering Europeans hadn't even raised an army against him. So the puzzled Subodai threw out two columns to try to draw out the European forces. He sent one column north and another toward Venice in the south. The northern column, under Batu, took Gran, where French and Lombard merchants tried to resist.

The Mongol advance guards circled Vienna and on as far as Neustadt, then turned south to join the other column. Subodai kept his main body at the Danube.

The northern column sent one detachment along the edge of the Tyrol as far as Udine, north of Venice. The southern column was raiding to the south along the Dalmatian coast, seeking the fleeing Bela of Hungary.

And the Mongols turned and marched back to Russia.

With Europe helpless before him, Subodai quit his campaign. For Ogdai, the Great Khan, was dead 4,000 miles away. And Subodai, ever the disciplined soldier, obeyed the law of Genghis Khan and turned back to the customary great council, always held at the death of a Great Khan.

Except for this custom, Europe would have surely fallen to the hordes of Subodai. For Europe refused to learn, refused to cooperate and refused to give up defensive-minded battle tactics. Their heavily armored, slow-moving "land battleships" with inadequate firepower bring to mind the later conception of infantry tanks, tied down by short operating range and supporting formations of foot soldiers and road-bound supplies.

Such tactics couldn't stand against the firepower and speed of mobile-minded nomad formations. And the feats of these mobile divisions weren't



matched until Guderian, Rommel and Patton showed the way, with the aid of the gasoline engine, in World War II.

It is a sad fact that America had so few who understood the strategy and tactics of mobility, after the traditions of J. E. B. Stuart, Sherman, Forrest and others had pointed the way.

Some like to say that mobility is temporary on the battlefields of history.

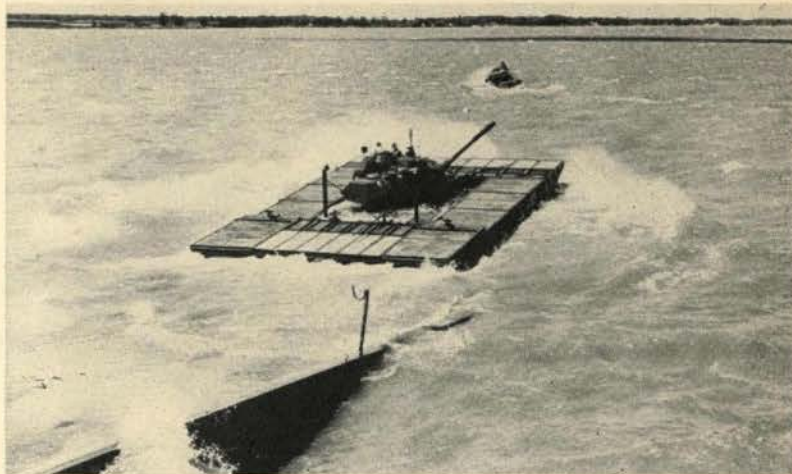
The truth is that the people willing and able to adopt mobile-mindedness have always conquered or overshadowed their reluctant neighbors. The Mongol empire lasted longer than we like to give it credit for. Mongol princes ruled the vast expanses of Asia most of the time from 1206 until 1350, almost a century and a half.

### History Would Serve Us Well

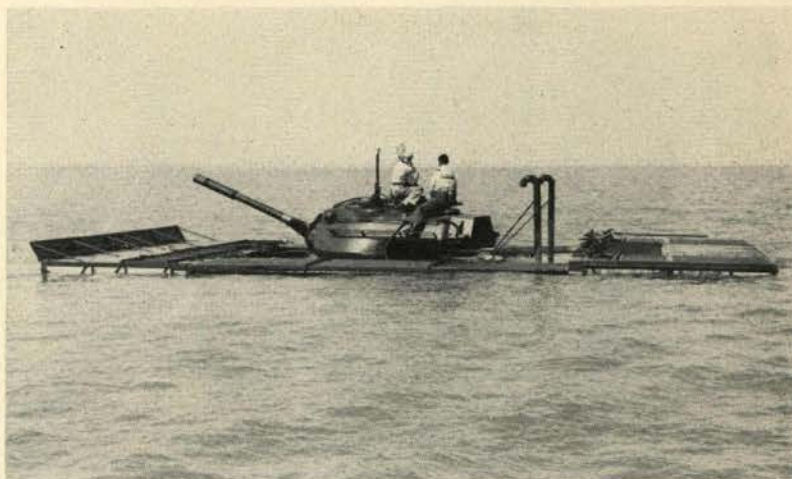
Individual chieftains and generals, from Baghdur, about 200 B.C., and the dreaded Attila in the 440s A.D., stretched the rule of mobility deep into the dawn of history. Even Genghis and his sons and grandsons were not the end. Another shadowy figure flamed up from the ashes and one last mighty emperor on horseback roared across the pages of history to rally and master one last time the mobile hordes of Tartary. Tamerlane he is called today and he lived always on the move, though his empire was far wealthier than even Rome ever dreamed of being.

Now another "horde" is marching from the steppes of Asia, vowing to conquer the world. These new hordes have their spies and "cold war" and the willingness to utilize, even steal, weapons devised by others. If they can find the modern equivalent of the horse bow and the "standard sweep," they will be able to resume where the khans left off. Indeed they have surpassed the conquests of the khans already and once again stand straddling the Danube, looking down on the bickering rulers of Western Europe who refuse to unite and refuse, as well, to adopt tactics and strategy of war that can win over larger, unwieldy forces.

The sands of time from Baghdur through Tamerlane spanned more than a thousand years. The West cannot afford another thousand years of defense-line, heavy-armor and slow-space psychology.



**A NEW FLOTATION DEVICE FOR ARMOR**—The Department of Defense recently released a new flotation device. In the top photo the floating



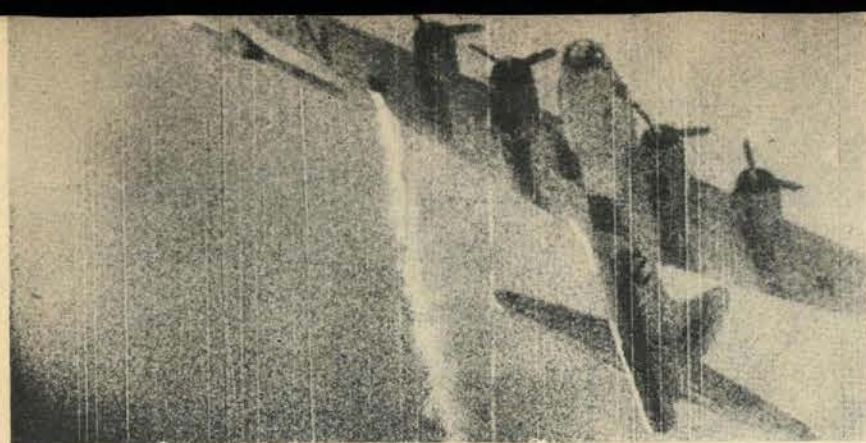
barge is shown entering the water, supporting an M-47 tank weighing approximately 48 tons. In the middle photo, the barge and tank are afloat



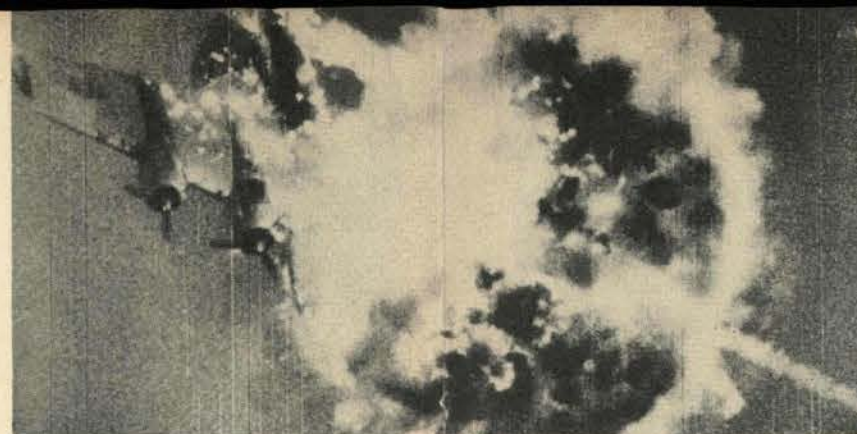
in deep water. The tank is capable of defending itself. In the lower photo, the floating device is shown on shore in position to jettison its pontoons.

U.S. Army Photos





*Here is the guided missile closing in for the kill*



*The Nike missile explodes at microsecond of intercept*



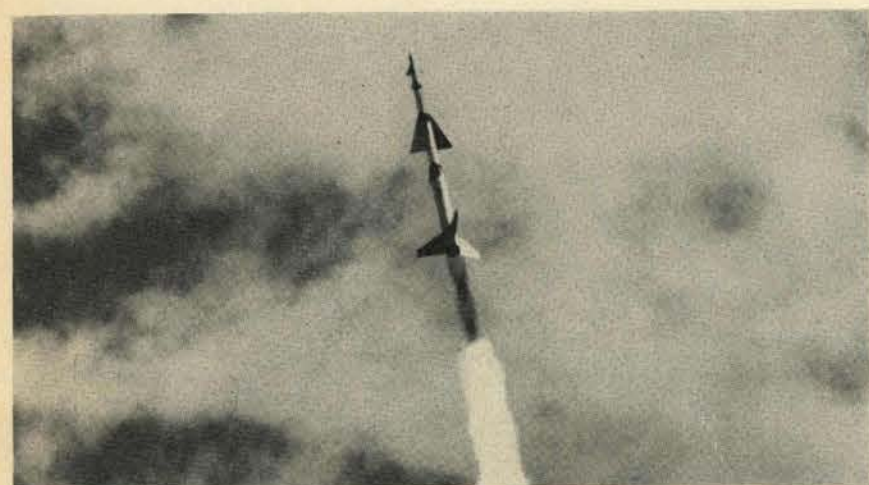
*The end as the motor tears from target and falls to earth*

CARDED

## THE NIKE

The Department of Defense recently released information on the Nike (pronounced like my key), the first supersonic guided missile to be put in use in the air defense system of the United States. Named for the winged goddess of victory in Greek mythology, this potent weapon can locate and destroy enemy aircraft by means of an electronic brain regardless of evasive action. The Nike is the nation's first combat ready surface-to-air guided missile system to be announced. It will supplement jet fighters and antiaircraft guns in the defense of our principal cities throughout the country. Initial firing tests of Nike missiles started in the fall of 1946. Throughout the intervening years, the Nike missile and its associated equipment progressed from one development stage to another, until finally, Nike was ready for production. Pencil shaped, the Nike is twenty feet in length and one foot in diameter, complete with rocket motor, explosive warhead and guidance equipment. Attached to it at the rear is a booster rocket which propels it through the sonic barrier. Controlled by radar from the ground the Nike has uncanny accuracy. Essentially a defensive weapon, the Nike system will provide defended areas with a far greater degree of antiaircraft protection than was ever before possible with the more limited ranges and altitudes of conventional antiaircraft guns. The Department of Defense in its release stated that the first unit would be stationed at Fort Meade, Maryland in defense of our Nation's Capital. The missile was developed for Army Ordnance under contract by the Western Electric Company, which manufactures the guidance and control system developed by the Bell Telephone Laboratories. The missile itself was designed and is now being manufactured by the Douglass Aircraft Company.

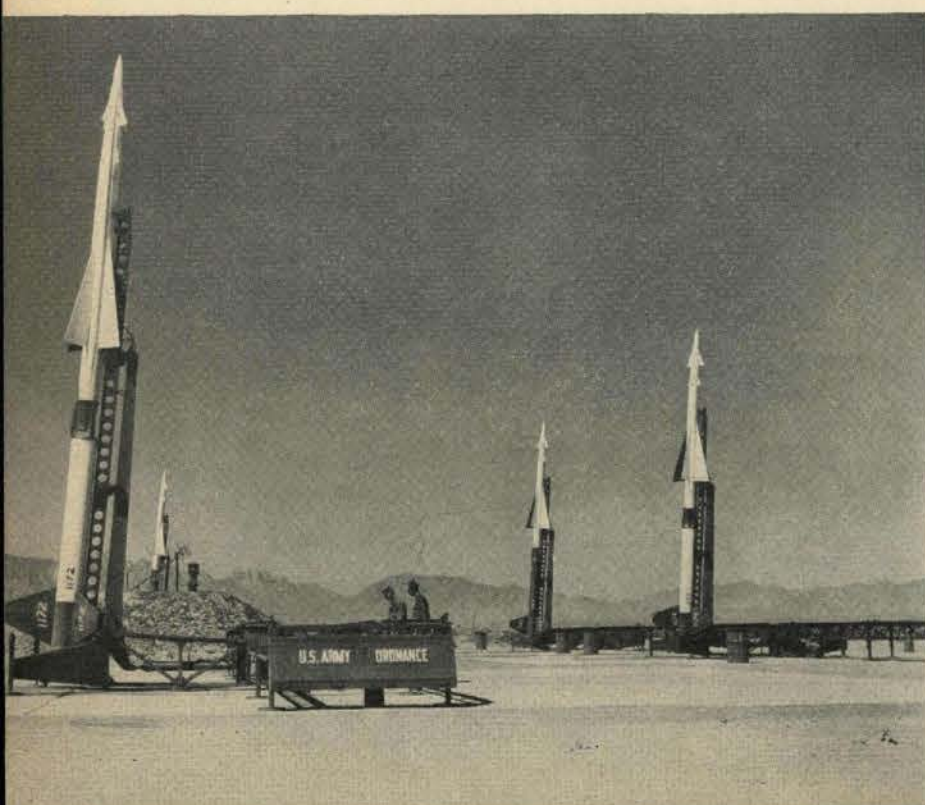
All photos credit to U.S. Army



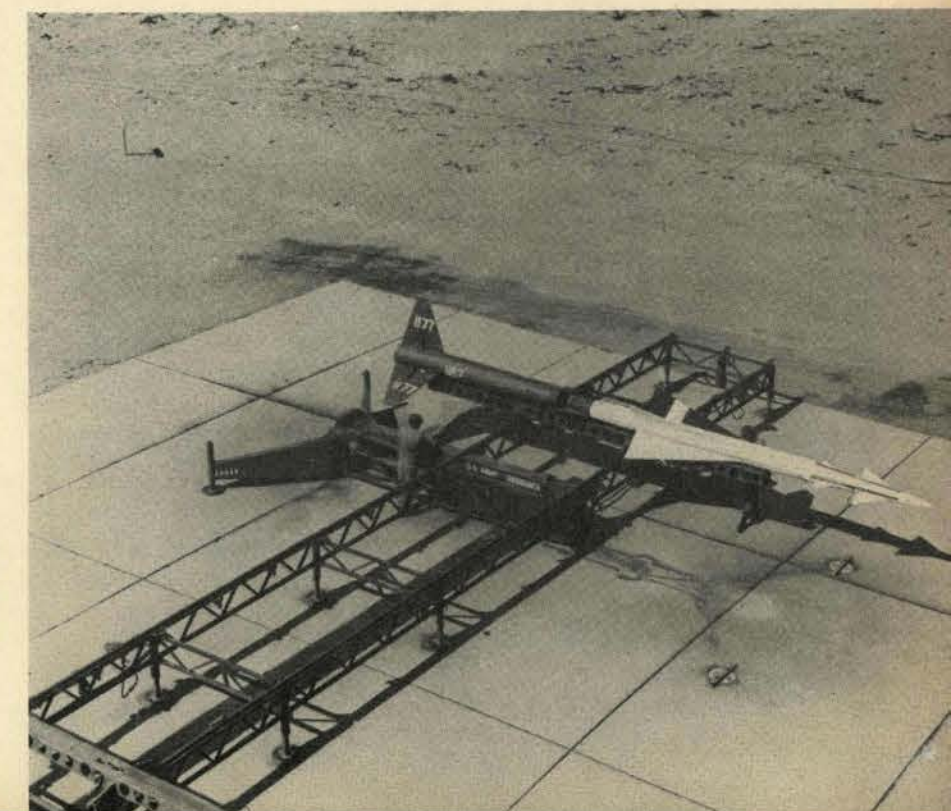
*The Nike on its supersonic quest for a flying enemy target*



*Radar is used in Nike system of tracing enemy targets*



*A Nike battery shown here in a ready position preparatory to firing*



*The Nike ground to air supersonic missile in horizontal battery position*



# NOTES ON THE TRAINING OF AN ARMORED DIVISION

by

BRIGADIER GENERAL HAMILTON H. HOWZE

## TRAINING PROCEDURES

**T**HE first article of this series, appearing in the November-December issue of *ARMOR*, dealt in some detail with battle drill, a drill in which competence is required by all units of the 2d Armored Division. Battle Drill is a combat procedure, in that it provides a means whereby the mechanics of small unit deployment and movement are very

rapidly accomplished, each component part of the unit understanding by virtue of practice not only its role in the drill, but also those of the other components. Battle Drill is also a valuable training procedure, inasmuch as it permits a large number of tactical exercises to be accomplished by a unit in a relatively short period of time, again with understanding and coordination throughout.

Certain other training procedures worthy of note have been worked out in the 2d Armored Division.

### Platoon Leader's Check List or Training Guide

A check list has been provided each tank platoon and each armored infantry platoon leader of the 2d Ar-

mored, and one is in process of formulation for reconnaissance platoon leaders.

The check list is published in a loose-leaf form similar to the battle drill manual. Its purpose is to enable the tank (or infantry) company commander and platoon leader to determine whether or not a given platoon is ready for combat service. It makes no attempt to prescribe the manner in which any of the various tasks pertaining to service in the field, or to battle, are accomplished, but each item listed does indicate the appropriate reference.

Both check lists have these sections: Minor Tactics, the Vehicle (Tank or Carrier), Firing, Maintenance, Marching, Signal Communi-

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**BRIGADIER GENERAL HAMILTON H. HOWZE**, a frequent contributor to *ARMOR*, served with the First Armored Division throughout World War II. Subsequent to the War he held important assignments at the Ground General School, Fort Riley, Kansas, and in the office of the Assistant Chief of Staff, G2, Department of the Army prior to his present assignment as the Assistant Division Commander of the Second Armored Division, Europe.



cation, Supply Procedure, Special Training, and Discipline; and the infantry check list has two additional subjects, Personal Gear and Physical Conditioning. In listing the subjects under the above headings, care is taken to indicate by a symbol *who* of the platoon must be proficient. So far as is known there is no other existing document which outlines for the small unit commander the whole of his training job.

And it is very desirable that an officer be able to comprehend that job. If a company commander or platoon leader can go through the manual and state for each item that his unit is qualified he may rest comfortably in the knowledge that it is combat ready. It is probable that although he finds a number of items in which his unit is qualified, he will also recognize a number in which it is not. The latter group, therefore, should be the subject of more training while not neglecting altogether the other items, on which concurrent practice may be had.

This is intended to give better direction to the formulation of training schedules and the conduct of training. Small unit commanders are directed to consult the manual for this purpose at least once weekly. Division Headquarters also specifies that the platoon leader be permitted a voice in the make-up of training schedules. He should be granted the privilege of saying, in effect, "My platoon is no good in (these subjects); I request necessary time and facilities so I can buck it up."

Under "Tactics," in the platoon leader's check list, the following comment appears: "These subjects . . . should be dealt with as follows. The platoon leader and the platoon sergeant should, through study of the cited references, become thoroughly familiar with the principles involved. Little if any classroom type instruction is necessary for the platoon itself; the subjects can be taught best through the medium of frequently repeated tactical exercises and through the exercise of the unit in Battle Drill."

And under "Discipline," the following:

"The leader must recognize what constitutes a properly disciplined platoon, and by periodic contemplation

of his platoon and the manner in which it performs its assigned tasks, must become thoroughly aware of its state of discipline.

"The platoon leaders should be able to answer, affirmatively, the following questions:

"Does my platoon observe the requirements of military courtesy? Does it present a smart appearance, both with respect to its vehicles and the persons and clothing of its members?

"Do I receive prompt, conscientious, and energetic response, on the part of the tank commanders, to my orders?

"Do the tank commanders receive prompt, conscientious, and energetic response, on the part of the crew members, to *their* orders?

"Given an instruction to perform an unpleasant, difficult, or dangerous task, independently and without possibility of supervision on my part, will the tank commanders loyally and efficiently tackle that job? Can they carry with them their crew members in support of that job?

"In the *absence* of specific orders, will my tank commanders recognize and loyally accomplish a job which manifestly has to be done?"

#### Who Learns What

A common failing of most training programs is the requirement that "all personnel" be qualified in this, that, and the other thing. This wording

satisfies the staff officer who writes the directive ("I told 'em!") but it imposes an unreasonable load on the company commander, and it gives many men instruction in subjects they don't need at the expense of those they do need.

In individual training we follow the general concept that a soldier cannot be expected to learn and retain all the information which may *possibly* be of interest and importance to him, and we therefore strive to teach him as thoroughly as possible the primary requirements of the job which he holds.

All members of a tank crew (to take an example) are essentially specialists. The tank commander functions in one manner, the gunner in another, and the driver, loader and bow gunner each in a distinct and separate role. Although it would be a good thing to have each man thoroughly trained in the duties of each of the others, we have found this quite beyond our capabilities to accomplish—because of the man's short term of service in a unit, because of the limited understanding of many of the recruits we get nowadays, because of the complexity of some of the duties, and because of the many demands of maintenance, guard, fatigue, leave of absence, etc., which cut the number of men present for training at any given time considerably below the assigned strength.

So we proceed as follows: a tank

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*This is the second of a series of articles on the general subject of the training of a modern armored division. The first article, entitled "Battle Drill," appeared in the November-December, 1953 issue of ARMOR. These articles are compiled on the basis of the experience, on the part of the author, in his present post as the Assistant Division Commander of the Second Armored Division. As stated before, this series does not purport to be a complete treatise on the training of armor, being in reality only an extension of the existing training doctrines as laid down in official manuals and publications.*

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Stars and Stripes

**Tanks of the Second Armored Division's 66th Tank Battalion in an assembly area.**

company commander places his tank crew members in training groups (tank commanders, gunners, drivers, etc.) by name. Any group may include men other than those presently occupying the position: e.g., a tank company may list in the gunners group not only the assigned gunners, but also the additional men selected to receive gunner's training in anticipation of assignment at a later date. Individual type instruction is presented to the groups which need it and not to the groups which don't need it.

Sometimes certain instruction is presented to more than a group at a time, but this is not done unless the subject is essential to both. The Platoon Leader's Check List is taken as the guide. If the subject, for example, is 90mm sighting procedure, the "class" is composed of the individuals in the gunner's and tank commander's groups with special effort made to have all *those* individuals present, avoiding absences due to passes, fatigue details, etc.

It is basically wrong to try to teach the gunner his job in the company of loaders and drivers and bow gunners who do not have the responsibility of learning 90mm gunnery, for this will only produce weak, watered-down instruction, not thorough enough for the gunner and too complicated for the understanding of the others, who are not much interested anyway.

When various members of the tank

crew reach a state of proficiency which makes the procedure practicable, instruction in the various specialties is widened to a limited extent: e.g., after the gunners become reasonably proficient in all subjects listed in the Platoon Leader's Check List, certain instructional periods may be scheduled wherein each gunner, under the supervision of the tank commander, will present the rudiments of tank gunnery to the other members of the tank crew.

### Training Inspections

The training inspection is a fairly arduous activity which will provide a new senior commander, or an inspector, with a first class idea of the standard of training of a unit in a very short period of time.

The requirements for a training inspection are these: the unit, mounted in its vehicles; a piece of ground on which the unit can be made to work through a number of tactical exercises; energy and imagination on the part of the inspector, who will also find it handy to have a little tactical wisdom of his own.

A training inspection should be administered, in the case of armored units, to a reinforced company, or at the very largest to a reinforced battalion. The company is by far the best sized unit. By the inspection of a sample company, in the presence of the battalion commander, a very real-

istic idea of the training of the battalion may be arrived at; by the inspection of one company in each battalion a valid idea of the small unit training of a combat command, or even of a division, may be achieved.

The inspection is announced only a short time before it is executed. A company is selected from the battalion at random by the inspector, perhaps two days before execution, to prevent special preparation.

A training inspection should be accomplished without benefit of much paper, and without benefit of any complicated tactical situations. The inspector needs (for a reinforced company) perhaps three officer assistants, and that's all. The inspection is conducted by the inspector getting into the field for a 24-hour period with the company, giving it a number of tactical tasks to perform, and observing closely its manner of performance.

In a series of training inspections conducted within the 2d Armored Division, the initial reinforced company problem was merely the rapid deployment of the company from march column on the road (no prior warning) into attack formation, and its movement against an assigned objective in coordinated attack. The exercise was stopped just as soon as the company was formed and moving. A good company could do the whole job in perhaps 15 minutes.

The next phase was a series of simple tactical or technical tasks given to individual platoons. For example, for the reinforced tank company, one platoon was given a job wherein each tank had to lay its main gun, with speed, on an assigned target with the proper range; a second tank platoon was required to place itself in a defensive fire position in a field containing some good firing positions and some very poor ones; a third tank platoon was required to move itself tactically over an obstacle; and the attached infantry platoon was required to outpost a small locality on four routes of possible enemy approach. Each platoon was given a grade on its performance of these simple tasks, and brief notes made of demonstrated deficiencies. Each platoon was then given another task: one platoon a



hasty attack on a suddenly surprised enemy, and pursuit by fire; a second platoon the formation and tactical operation of a night laager<sup>1</sup> (of which more later); a third platoon the hasty laying of a minefield to block a route; and the infantry platoon a hasty defense against an attack by an enemy suddenly appearing on the flank of the platoon in march.

In the first afternoon (the inspection starting at noon) each platoon was put through 5 separate tasks. By this time the company commander, who had been witnessing with horror the heretofore unsuspected ignorance of his platoons, was ready to be put to work. He was instructed to put his company in defense of a company sector in a battalion defensive position. His dispositions were carefully inspected and graded, with particular reference not only as to how the component parts of his force were disposed, but also as to the instruction of the noncommissioned officers, by the platoon leaders, as to *what* they were to do in any of a number of assumed actions by hostile forces.

At about midnight we found it desirable to cause the company to pull up stakes from its assigned defensive sector and move, blacked out, to a new one, organizing the latter in darkness without benefit of daylight reconnaissance. At daybreak the company commander was usually given orders to withdraw to a second position, with the company's actions in execution, and the positions taken, noted and graded. The withdrawal was continued with various situations presented (all without use of any actual or represented enemy) and again care taken to note the speed and facility with which the company and platoons handled themselves, and how artillery fires were planned and called for.

Altogether, in the 24-hour period, our tactical inspections required each platoon to go through five or six platoon situations, and the company to go through eight or ten. A critique was held at the end of the inspection,

and at the critique two questions were answered very plainly: Did the unit meet the minimum training standards of the 2d Armored Division? Was the unit ready for battle? If the answer to the questions were negative, corrective action took on a high tempo, with a good deal of attendant excitement all up and down the line.

The net result of a tactical inspection is a spanking good workout for the company, and a thorough understanding on the part of the company commander, his officers and non-commissioned officers, as to their abilities to handle their troops tactically. There is little doubt that a training inspection has a remarkable effect on a tactical unit, and on the several echelons of command.

### Jeeps for Tanks

The use of 5 jeeps to substitute for the normal vehicles of a tank platoon has been found to have several important advantages: it saves gasoline, it saves wear and tear on the tanks, it saves maintenance effort, and it permits the execution of tactical exercises over civilian terrain where tanks are not permitted to go.

Tank battalions are encouraged to use this device. The battalion commander gathers up jeeps from all sources within the battalion, fitting them with radios to give them the same inter-vehicle communication facilities as a tank platoon.

Only four men can ride in a jeep, but this is not an important matter because it is rare that we turn out more than four men per tank on a normal drill day.

The jeep platoon is an admirable device for teaching battle drill and most of the other tactical instruction for the tank platoon. It may be added that the crews greatly enjoy this sort of instruction.

A tactical exercise known as "Jeep-er" was run by every tank platoon in the 2d Armored Division. The platoon, in jeeps, was accompanied by a sixth jeep containing a forward observer. The platoon moved over a set course, laid out on a map but in no way marked on the ground, perhaps 40 miles long. Until the last problem, no umpires, no control personnel were provided: the platoon leader was entirely on his own.

The following problems were presented: (1) Platoon in attack against an enemy tank and infantry which has held up friendly infantry; (2) Emplacement of the platoon in position to defend the left flank of a reinforced battalion (assumed); (3) Action of the platoon in cutting (by fire) enemy rail and road communications through a canyon bottom; (4) Emplacement of the platoon to protect the flank of an assumed battalion as it makes a right turn; (5) Emplacement of the platoon to delay an enemy crossing over a bridge, plus the



U.S. Army

A rifle platoon assaults an enemy position after the tanks have softened it up.

<sup>1</sup>Defined in the preceding article as "a formation for all-round defense."



displacement of the platoon and the establishment of successive additional delaying positions; (6) Action of the platoon in seizing and securing another small bridge; (7) Action of the platoon as an advance guard for a reinforced tank company marching through territory recently evacuated by hostile troops; (8) Emplacement of the platoon in bivouac, and defense against an enemy patrol seeking to penetrate the bivouac; (9) (executed on a firing range) Attack (in tanks, not jeeps) with live fire and live artillery on an enemy infantry and antitank gun position.

For the first seven problems there were no props, no signs, no targets, and no enemy. In the eighth problem, in which the platoon went into bivouac, a squad from an armored infantry company attempted to penetrate the bivouac. The ninth problem involved live firing and therefore required a control officer and a range officer.

The problems were designed to be interesting, and the platoon leader was adjured to exert his own initiative and imagination to the end that the platoon would find the exercise enjoyable as well as instructive. Foolishness and sloppiness of execution were of course not to be condoned. The platoon actions were to be executed promptly, the platoon leader to make up his mind quickly as to what he wanted done, and to order

it by carefully chosen words, as briefly as possible, and with the reference to battle drill where applicable.

A prime purpose of the exercise was to develop the platoon leader and his non-commissioned officers in the proper procedures of command, and a second objective was to develop control and speed and precision of execution by the platoon as a whole.

Each of the seven problems involved an initial point, selected and numbered on the map, at which the platoon leader was required to halt and assemble his platoon. At this time he would explain the situation for the forthcoming problem and the mission; orient the platoon as necessary on the ground; and then explain his plan for accomplishing the mission.

In execution, the platoon handled itself tactically according to the situation. All movement from the initial point to the completion of the problem was tactical. Stress was laid on the use of brief *commands*, as distinguished from long instructional conversation.

At the completion of each problem a critique was held by the platoon leader. This included a description of the solution of the platoon as executed, a statement of errors, a statement of how successful the solution would have been in accomplishing the mission, a consideration of the written "satisfactory solution" which

was provided the platoon leader to be opened at the critique, an explanation by the forward observer as to how he executed the artillery fires in support of the platoon's action, and comments and suggestions by non-commissioned officers and men.

Platoons were not required to agree to the "satisfactory solution." All that was necessary was that the platoon leader and his platoon arrive at a solution which they themselves considered satisfactory.

Much stress was laid on the use of artillery. The solution to each problem was required to include, with respect to artillery, what fires should be contemplated, which of these fires should be registered in, by what means the platoon leader would ask for the fires, and where the forward observer should be in the course of each problem.

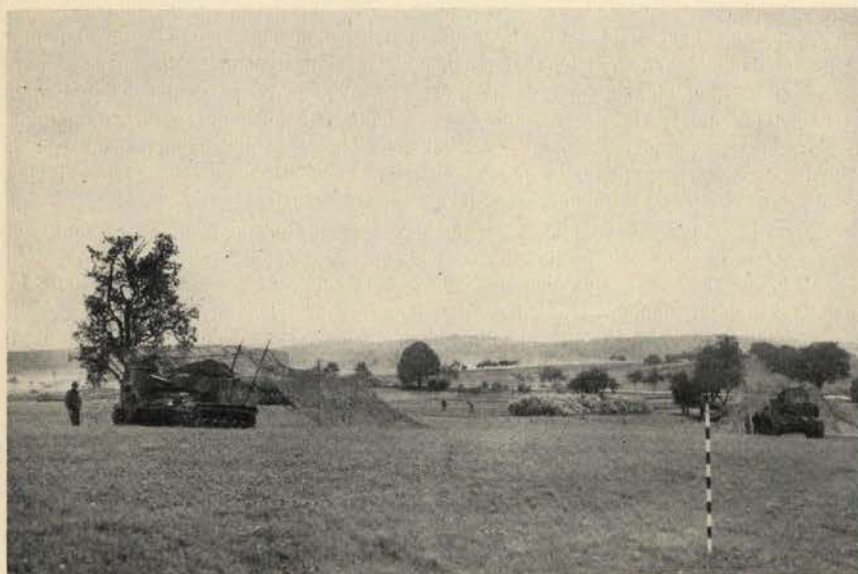
Exercise Jeoper had excellent effect, in that it put the platoon leader on his own for a 24 hour period of intensive tactical instruction, and thereby did much to develop the platoon leader's confidence in his own judgment. Inasmuch as each problem was a good one, it improved the tactical understanding of the platoon. And as a final dividend it taught the platoon leader how simple it is to conceive and present a good tactical problem, even though the facilities available are only the unit and the terrain.

Each platoon leader was required to submit a brief report on the exercise, and without exception each reported that his platoon benefited materially, and what's more, enjoyed the experience.

Similar exercises continue, in this division.

### Tactical Rides

Combat commanders and battalion commanders are encouraged to conduct tactical rides, for a company (officers and platoon sergeants) or a battalion periodically. The tactical rides normally include not less than 8 or 10 different tactical situations. One jeep is normally assigned to each platoon, and one per company, all equipped with radios so that radio traffic may proceed as if in tanks. Ar-



Stars and Stripes

A 2d Armored Division Armored Artillery Battery in typical Battery position.



tillery forward observers always attend.

Rides properly conducted develop interest, quick thinking and general tactical competence. Great stress is placed on the principles of simple terrain appreciation on the part of junior officers and non-commissioned officers, in order that we may develop the technique of utilizing terrain to our own maximum advantage.

In the tactical rides we follow the procedure of mentally "attacking" our own defensive position, and conversely, of "defending" against our own attack. By contemplating the possible enemy lines of action—with special attention to how he might utilize terrain in positioning his weapons and moving his troops—we aid ourselves in working out our own scheme of attack or defense.

### Cross-Country Drills

Infantry company commanders are encouraged to take their entire companies, all dismounted, on cross-country movement drills for the purpose of developing the procedures for rapid and coordinated deployment. Provided the company commander has imagination, these drills are generally good fun, simple, and very instructive. They may be executed over ordinary farm land without damage to property.

The company commander merely selects a point perhaps eight miles away, across varied terrain, from the point at which he intends to start. The company being assembled dismounted at the starting point, the company commander presents verbally to his platoon leaders a very simple tactical situation and a simple plan of attack on an objective perhaps one mile away; he selects and points out intermediate objectives, and assigns to each of his platoons appropriate tasks in connection with the attack; and having used not more than about five minutes for this entire procedure, he moves his company out. He employs radio as his primary means of communication to the platoon leaders, and platoon leaders use battle drill signals, supplemented as necessary by radio, for the control of the several squads.



U.S. Army

**Tanks and Armored Personnel Carriers in the attack during a training exercise.**

When the company gains the first major objective, it is generally desirable to call a short halt while the company commander assembles the platoon leaders, conducts a brief critique, points out the next major objective and the intermediate objectives, and assigns platoon tasks, as before. The platoon leaders thereupon return to their platoons and use an additional few minutes to orient their platoons, and the exercise is started again.

By this means multiple situations may be met and solved in the course of a single morning. If time permits it may be desirable to feed lunch on the final objective, to which the kitchen truck has been dispatched, and work back over the same ground, or over new ground, in the afternoon.

It is an important principle in connection with this exercise that the commander cannot expect to achieve perfection in each phase of it. He therefore does not attempt to discuss every possible mistake in his critiques—it is by going through many successive attacks over different terrain that the company achieves speed and coordination.

### Skeletonizing

Certain measures have enabled us to improve our training under the handicaps normal to any unit during peacetime conditions. One of these is the system of skeletonizing, to achieve the best possible training with a

considerably reduced strength.

To illustrate, the armored infantry company is used as an example. For tactical exercises and drill, certain platoons may be turned out on a skeletonized basis. A squad of such a platoon, for training, may be represented only by its key personnel: for a rifle or machine gun squad, the squad leader, assistant squad leader, and driver; for a mortar squad, the squad leader, assistant squad leader, gunner, and driver. Thus a company commander may turn out his company for a training exercise with the first and second platoons built up to close to full strength, the third and mortar platoons at "skeletonized" strength<sup>2</sup>.

A company thus organized will provide the platoon leaders and squad leaders of the first and second platoons with enough men to run through the problems presented on a fairly realistic basis. The third platoon and mortar platoon, though skeletonized, should participate on precisely the same basis as the platoons which have been fleshed out at their expense: that is, these platoons may go through

<sup>2</sup>The mortar platoon of the armored infantry company is particularly susceptible to skeletonizing in favor of the other platoons. The key personnel of the mortar platoon are the platoon leader, the platoon sergeant, the squad leaders, gunners, and drivers. If these few personnel are thoroughly trained we believe they will be entirely capable of taking a group of fresh recruits who perhaps never before laid hands on a mortar and in one week's training build the platoon to complete battle readiness.



all of the normal maneuvers, with the squad leader and one or two men representing the entire squad.

The same principle may be applied to a tank company: for example, the first and second platoons may be fleshed out for a given exercise at the expense of the third, the third platoon tank commanders all riding in a single tank representing the entire platoon.

### Organization of the Job

We have found that our junior officers must be taught how to do more than one thing simultaneously. Combat is a conglomeration of small difficulties and problems; some are tactical, some technical, and some defy description altogether—but the secret of solution of *all* of them is primarily that of organization.

To cite a simple example which occurred on one of our tactical exercises: When an infantry company with its tanks encountered mines, a long delay ensued because the company commander permitted only one thing to happen at a time. A fairly realistic job of probing for and removing the mines was done by the infantry, but a delay occurred for lack of necessary orders, before the disabled tank was towed out of the way. The forward movement of the force was also improperly delayed because no one sought a by-pass around the mines until told to do so by a visiting officer.

The point is that each such situation should have an officer or a non-commissioned officer present who is impatient and (preferably) angry; this individual should look about him, see *all* the things that might be done to improve the situation, and get as many of them as possible in process *simultaneously*. This is a very important matter, and one which must be solved if we are to become as efficient as we must be.

### Gunnery Practice on Field Exercises

We believe that the crews of tanks should be given training tasks to perform in the course of all tactical operations. After all the money and effort



U.S. Army

A demonstration of a night attack with Armored Infantry and Tank teamwork.

have been expended to get a platoon deployed in the field, it is a shameful waste to permit the crews to sit idly in their tanks with nothing to divert their attention from the comic books.

Platoon leaders should therefore practice, on their own initiative, certain fire direction and fire control exercises. Thus, the platoon being at a temporary halt in a tactical situation, the platoon leader should assign to each of his sections a target area; then he and his platoon sergeant should assign subordinate tanks specific subdivisions of those target areas to cover; individual tank commanders should then give a succession of fire orders to their gunners, requiring the gunners to go through the complete process of ranging and firing on various targets.

This is a difficult thing to achieve, people being as lazy as they are, but it is valuable exercise.

### Non-Supervision

The 2d Armored Division subscribes to the general principle that training should be properly supervised by senior officers. On the other hand we believe it highly desirable

that a junior officer periodically should be given the opportunity to boss his own unit without the necessity for looking back over his shoulder to see what a hovering superior thinks about his performance.

The present system of army training gives the average lieutenant really very little opportunity for the exercise of independent judgment. Many a platoon leader feels that this is indicative of a distrust, by his superiors, of his (the platoon leader's) ability to do his job. He has a right to this belief—and yet while we give him very limited responsibility in the routine chores of peacetime, come the wars we pat him on the back and tell him, "Laddie, just take this little ol' platoon up the road a piece and clean out that patch of woods, which happens to be full of antitank guns and infantry. Just let me know later if you come out all right."

To relieve the situation a bit, during certain periods of the training year we require each platoon leader (officer or NCO) to take his platoon into the field for a 24 hour period of training entirely on his own. His company or battalion commander may specify in general the nature of the training which he is to conduct, which always includes a platoon tactical bivouac. But they don't go with him.

And from all reports he doesn't miss 'em much.

Should an armored unit desire a copy either of the Tank or the Infantry Platoon Leader's Check List, single copies of the document applicable to the unit may be obtained by writing the Adjutant General, 2d Armored Division, APO 42, Postmaster, New York, N. Y.



# Armor and the New Look

Whenever changes pertaining to National Defense are announced by high authorities of a government, such as we in the United States are most fortunate to have, much speculation comes forth through the media of television, radio, and press.

The new "atomic airpower concept" approved by the President should cause all those in the various services to don their thinking caps and look into the future. What changes will this make in our present-day tactics? What will be the "new look" as it pertains to the Army?

The President's proposals regarding national defense made to Congress in his State of the Union message are worthy of reiteration. Built around increased nuclear power and reduced manpower he proposed:

1. Increase strength in the air,
2. share with our allies certain knowledge of the tactical use of nuclear weapons,
3. improve manpower and reserve policies to regain "maximum mobility of action,"
4. increase benefits to keep well-trained, long-term career men in the service, and
5. improve our continental defenses.

With the stress on economy for the so-called "long pull" we believe that it is appropriate to take another look at the structure of the Army. At the conclusion of World War II sixteen (16) Armor Divisions were in existence out of ninety (90) Army Divisions, giving us an Armor Division ratio of nearly 18%. Presently we have twenty (20) combat divisions of which only two (2) are Armor Divisions; thus the armor ratio is a flat 10%.

The Army's peacetime mission is to be prepared to win our land battles in case of war. In addition the land combat forces carry a major responsibility for the defense of this nation and the assistance of its allies abroad. The Army provides for antiaircraft protection of this continent and, in collaboration with the Air Force, maintains our defenses against air attack. The Army must be organized—and its leaders trained and experienced—to develop and employ land combat forces in the most effective efficient manner possible.

With the future cutbacks of manpower staring at us the Army will be required to trim as much fat as possible without touching the lean. It might even be necessary to cut to the bone. To achieve this end and still maintain "maximum mobility of action" the preponderance of Armor Divisions should be greater than it is at present.

Armor Divisions do not mushroom overnight. Training of personnel to maintain and operate Armored equipment is a long tedious process.

In a small professional army the emphasis must be on those type units that give the greatest return. Surely no one doubts that an Armor Division will provide a greater mobile striking force than any other type. At the same time there is a savings of manpower of more than 2300 soldiers compared to an Airborne Infantry Division and more than 2700 men compared to the strength of an Infantry Division.

To support more Armor Divisions does not require an excessive amount of additional equipment but rather the massing of existing equipment into divisional size units. Thus, we could gain a massed striking force which could be employed as the occasion may demand. This highly mobile force could strike back immediately with greater shock action and greater decisiveness than could a similar force with the emphasis on other type formations.



**T**HERE are many important aspects to an Army officer's career but perhaps the one which raises the most questions today concerns his next overseas assignment. And why not? It affects his career, his family life and his finances. Each officer wants to know and should know the basic policies and selection procedures governing overseas assignments. This article will attempt to answer a few of the questions individuals most often ask in letters to or personal interviews with members of the Career Management Division of The Adjutant General's Office.

*"What about my overseas service? I've built up forty-eight months overseas time since World War II and returned from Korea in December 1951 after fourteen months of combat duty. Today I received orders for shipment to Europe and yet, there are other officers of my grade who have been enjoying the same ZI assignment for years."*

The Army's fundamental policy in making overseas assignments is that all officers will share equitably in foreign service. It is obvious, however, that some deviations from this policy must occur from time to time. Certain CONUS assignments require either specialized training and indoctrination, a relatively long period of on-the-job familiarization, or extended continuity of effort. Examples of such assignments are: Special projects, technical specialization, high level staff positions, civilian component duty, service school instructors and Army Field Forces boards. It would not be efficient or economical to assign officers to these duties for relatively short periods of time in order to impose strict adherence to the fundamental policy. Therefore, it is necessary that such assignments be "stabilized" and thus constitute an exception to the basic policy. That is, the man in a stabilized spot completes a full assignment even though by length of time since his last overseas duty he may be immediately due for foreign service. He will be shipped in turn when his tour is ended. This situation is under scrutiny by the G-1, Department of the Army, in an effort to provide longer stays in the CONUS for a greater number of officers.

*"There doesn't seem to be too much rhyme or reason to the manner of*

## HOW ABOUT SELECTIONS FOR OVERSEAS SERVICE?

*selection of the individuals. Do they really have a system?"*

Each career branch maintains a vulnerability roster, divided by grade, from which selections are made for foreign service. Each grade is arranged according to the actual or adjusted date of arrival from foreign service and those officers with the earliest date of return are listed first.

Before an officer is selected for foreign service, however, he must be eligible under established criteria and POR qualified in accordance with the minimum training requirements contained in paragraph 17, SR 600-175-20. In the latter instance, the Chief, Career Management Division, has authority to waive certain of these minimum training requirements. Current eligibility criteria are summarized as follows:

- (a) Nine months minimum period of active service remaining as of scheduled date of arrival at the port of embarkation or Army Personnel Center.
- (b) Officers due for statutory retirement must have twelve months or more remaining service.
- (c) Officers and Warrant Officers who return from any overseas theater, except FECOM, will not be sent overseas again until they have served in CONUS or territory of residence at least six months.
- (d) Officers and Warrant Officers who return from FECOM will not be sent overseas again until they have served in the CONUS or territory of residence at least nine months.

There is a possibility of change in the current regulations to increase the minimum tour in the CONUS to twelve months.

The main considerations in selections for overseas shipment are grade, MOS, date of return from last overseas assignment, theater from which returned, and existing overseas requirements.

*"Well, I'm a commander and want troop duty. How do they pick my MOS and will any attention be paid to it when I get overseas?"*

The MOS assigned in overseas orders is understandably of importance and concern to the individual and may, in some cases, not be in accord with his desires. However, it is necessary to meet the requirements of the overseas commander so that he can adequately handle his mission. Since the outbreak of hostilities in Korea, the use of the directed and recommended MOS has been suspended and no assurance can be given that the MOS which appears in Department of the Army orders will be that in which the individual will serve after arrival in the overseas theater. It is the prerogative of the theater commander to make assignments consistent with his requirements. However, when selection is made in Career Management Division, a careful evaluation of the individual's abilities, skills, and physical capabilities is made in order that he can be assigned to a particular position which utilizes his qualifications to the maximum extent.

*"What is the reason for my overseas selection when other officers who returned with me from the last overseas assignment are not on orders and not stabilized?"*

It must be understood that overseas criteria differ by branch, as well as by grade, as a result of a differential in requirements. It is entirely possible that a Combat Arms officer who returned from foreign service during June 1952 might be selected for a new foreign service tour before a Quartermaster or Ordnance Corps officer, who returned from his last assignment sometime during 1951. Criteria are established in each branch and service and are based entirely on overseas demand.

The fighting in Korea has had a decided influence on criteria. It is Department of the Army policy that, to



*This is the fourth article of a series, prepared by personnel of the Career Management Division. Assignment of Overseas Returnees will be forthcoming.*

the maximum extent possible, everyone will have an opportunity to serve in Korea in order to avoid, or at least delay, sending individuals back to Korea for the second time. Therefore, in effect, two pools of officers have been established—

- (1) Those officers who have served a tour in Korea subsequent to 25 June 1950 to be utilized to fill other theater requirements, and,
- (2) Those officers without Korean combat experience to be utilized to meet the Far East requirements. This explains why officers who have served one tour in FECOM prior to 25 June 1950, or even in Japan or Okinawa since 25 June 1950, are being ordered back for another tour.

This system is fair to all officers and will provide the desired rotation support to all theaters. In some cases, however, it will result in overseas movement of officers who are less vulnerable for overseas assignment than are other officers who remain in the CONUS. For example, returnees from a non-combatant theater may expect less time in CONUS assignments than may returnees from a combatant theater. This results from the heavier officer requirements of the combatant theater and from the policy, as stated above, of not returning an individual to a combatant theater. Exceptions to this policy will be made because of compassionate reasons and interests of the service but each case will be treated on a basis of individual merit. It may also be expected that the Korean Truce will affect requirements of FECOM to the extent that returnees from non-combatant theaters will have more stability in CONUS than that experienced in the past.

*"We are going to have an increase in the family. Will they let me stay until the baby is born?"*

Normally an expected increase in

the family will not be sufficient reason for deferment. However, if an overseas assignment will provide undue hardship on an officer due to illness in the family, financial difficulty, complicated pregnancy, etc., he may make application, through channels, for deferment. Various periods of deferment can be requested. CONUS Army Commanders have authority to approve deferments for ninety days or less and requests in excess of ninety days are forwarded to the Department of the Army for approval. All applications forwarded to Department of the Army are processed in a central agency of The Adjutant General's Office so that all cases will receive uniform treatment. After the central agency has considered all evidence and has made a determination based on established policies, each case is forwarded to the pertinent career branch for final decision. This system of centralized processing insures fair and impartial handling of cases submitted by officers from different branches of the service.

*"I'd certainly like to go back to Trieste."*

As provided in AR 600-175, individuals may volunteer for foreign service in writing through channels. Volunteers may state a preference for a particular overseas command, several overseas commands in order of preference, or for any overseas command without stating preference. Insofar as practicable assignments will be made according to stated preferences if there is a requirement which the volunteer can fill at that time. However, it would be patently unfair to assign officers repeatedly to the most desirable area simply on the basis of individual preference. Here again the general policy of equitable foreign service must be tempered by the needs of the Army and justice to the individual. Officers on the volunteer list who are not assigned according to their choice prior to becoming available for foreign service in their nor-

mal turn automatically lose their volunteer status and are placed on the regular roster for an overseas assignment.

*"I speak Spanish and desire an assignment in the Attaché System or a Mission."*

Requirements for officers in the Attaché System are published periodically in Department of the Army Circulars. Such assignments are highly competitive and are made on an individual basis. Officers desiring consideration must apply in writing in accordance with SR 600-147-1. Assignments to Military Missions and Military Assistance Advisory Groups are made as vacancies occur. Officers are selected according to their qualifications by the branches concerned.

*"When can I expect my next overseas assignment?"*

It is difficult to predict with any exactitude when any particular individual might be selected for an overseas assignment. The date is determined by overseas requirements and eligibility of the individual officer concerned. Requirements are received from overseas commanders five months in advance of expected month of shipment and, insofar as possible, orders are issued three months in advance of the port reporting date.

Career Management Division recognizes the undesirable effects of frequent assignment changes and constantly strives to improve the situation so that each officer can be assured of more stability in CONUS assignments. It must be emphasized here, however, that Career Management Division has direct assignment control over Combat Arms officers only. The Chiefs of the Technical and Administrative Services control the assignments of their officers. Each branch and service, however, is guided by Department of the Army assignment policies. Specific queries or requests concerning assignments should be addressed to the Chief of the Technical or Administrative service concerned for T&A officers; and, to the Chief of the \_\_\_\_\_ Branch, Career Management Division, TAGO, Washington 25, D. C. for combat arms officers.

Colonel Richard P. Ovenshine—

Infantry Branch

Colonel Darwin D. Martin—

Artillery Branch

Colonel George G. Lowe—

Armor Branch



# SOME NEW ARMY ENGINEER BRIDGE DEVELOPMENTS

**T**HE statement "The Army travels on its belly" is still true. However, our modern army is not supported solely by the Quartermaster Corps. It is dependent upon all the technical services for support in order to keep it moving.

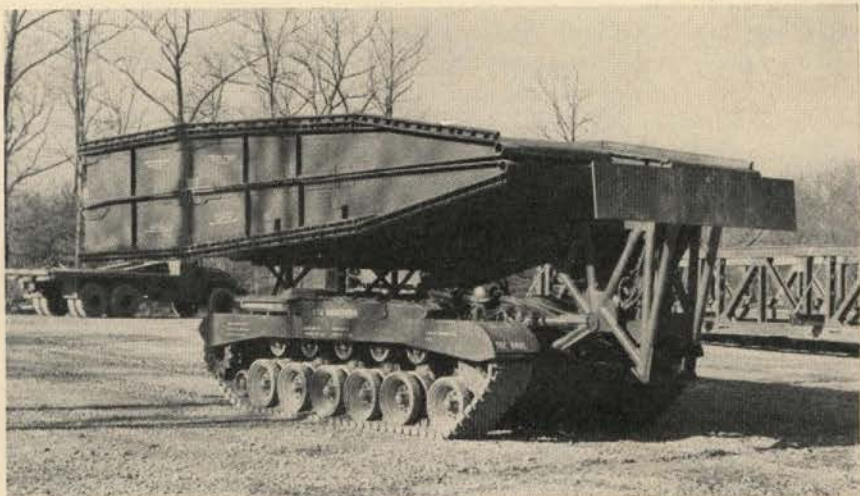
Recently the Department of Defense unveiled three new Engineer bridges. All of these new developments are capable of supporting up to sixty tons.

The Scissors-type bridge, made chiefly of aluminum, is carried and launched by a modified turret-less tank. In the past it has been virtually impossible to build a bridge, even for short gap crossings, in the face of heavy enemy fire. This may be overcome by this hydraulically operated bridge without ever exposing soldiers to enemy fire.

The Assault-type bridge is a portable bridge which sits on two rubber tires and can be towed to the site of a launching easily by attaching it to the back of a truck. It can then be pushed into position by a tank. It has a 13 and a half foot roadway width and is 43 feet long.

The T-6 bridge is the modern version of the famed Bailey bridge of World War II. Made of aluminum, it weighs approximately sixty percent of a comparable steel bridge. A 75-foot length of the bridge can be manually erected in approximately one-third the time required for the World War II model. It can span approximately 180 feet. After the bulldozer pushes it into position ramps are laid on the bridge which will then be ready for use.

U.S. Army photos



The Scissors-type bridge, shown in carrying position, is hydraulically operated.

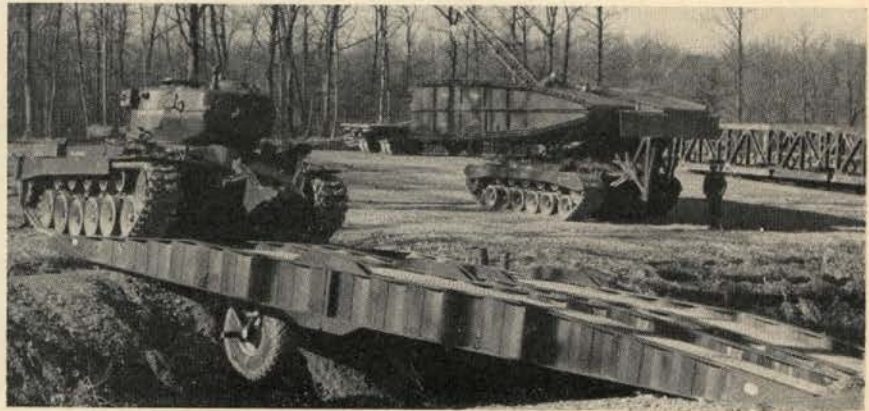


The Scissors-type, made of aluminum, commences unfurling at the launching site.





The Assault type bridge, being pushed into position by an M47 tank at ten miles per hour.



After releasing the linkage between the tank and the bridge the vehicle crosses the gap.



The T-6 bridge reaches the far end of the gap after being pushed into position by a bulldozer.



The launching nose is placed on rollers and removed for further use after being pushed 60 feet.



## 65 Years Ago

The difficulties to be overcome in shooting a pistol correctly, are directing it properly at the object the instant the trigger is pulled, and preventing the pull of the trigger, the blow of the hammer and recoil of the pistol from deranging this direction till after the bullet has left the muzzle. Any one with ordinary nerves can, if allowed to take deliberate aim—that is, occupy two or three seconds in pointing the pistol after it is raised—soon become a fair shot by paying close attention to a few points.

One great trouble to beginners is pulling too much on the right or left side of the trigger, causing the bullet to deviate to the right or left. Another is flinching the instant the trigger is pulled. Others find they hold the pistol so loosely that the recoil throws the muzzle up before the bullet gets out, causing an upward deviation, while some allow the biceps and triceps to remain so relaxed that the recoil swerves the pistol to the right or left before the bullet clears the muzzle. An ordinary observer, by giving close attention to these points, noting and correcting the deviations peculiar to himself, will soon become a shot sufficiently skillful to compete, with more or less success, in the pistol matches frequently occurring in different parts of this country.

CAPTAIN W. P. HALL  
Fifth Cavalry

*Revolver Shooting*

## 50 Years Ago

European tactics and discipline are not applicable to Americans. They will not fight after the European plan. They are too original and self-assertive to follow in the footsteps of any other nation. On the contrary, for more than two hundred years the world has adopted American methods both on land and sea.

Since the Puritans landed from the *Mayflower* until now the extended order has been their own particular way of fighting. All their fighting on this continent against the Indian has been in extended order, lying behind stumps, rocks or any other convenient cover, and in the American Civil War, when the European system failed, the American soldier improvised a system of his own, and succeeded—notably Forrest in the use of cavalry.

The power of the rifle has been developed by the American. In point of fact it is the American weapon, as is the "six-shooter." We all know what occurred at Lexington, Massachusetts, one hundred years ago, when the American minuteman with this rifle, in extended order, behind logs, fences or other cover, forced the best troops of Europe (the British Grenadiers, infantry) to retire. We see the result of this at Austerlitz, when Napoleon, for the first time, had his troops fire from the shoulder, and to aim in the American manner at individual soldiers of the enemy. The great soldier was so astonished at the repulse of England's splendid veterans by an American "rabble," so-called, who, behind cotton bales for cover, at New Orleans (present tactics), with their favorite rifle picked off the enemy coolly and deliberately, until they were completely cowed by the cool, murderous fire.

MAJOR C. G. AYRES  
Eighth Cavalry

*The American Cavalryman*

## 25 Years Ago

A professional man must practice constantly in order to be prepared to compete with others in his line of work. Not only must he practice what he has learned, but he must also study everything obtainable on the subject in order to put to his use newly discovered facts. He must be an unbiased critic of his own work, studying every phase of his task so that former mistakes may be avoided and new ideas incorporated. Analysing and observing methods of others; recognizing and finding cause for our own errors are positive avenues leading to perfection in any line of endeavor.

You will perhaps be saying "What has this sermon to do with Riding and Shooting?" Everything. The principles stated apply to all forms of human effort.

A cavalryman is a soldier who can "Ride and Shoot." He can ride anywhere a gallant thoroughbred can carry him and ride until that same horse falls from exhaustion; furthermore he can shoot when he arrives on the spot he intends to reach and he can hit what he is shooting at. If opportunity presents he can ride down interference, hurdle obstructions, and hit from the back of a speeding mount anything the size of a man within twenty-five yards.

CAPTAIN A. H. NORTON  
Eighth Cavalry

*"Ride and Shoot": A Partnership*

## 10 Years Ago

At the beginning of the war, the Red Army tank troops were organized into divisions. Battle experience has shown, however, that these units were unwieldy and inconvenient for managing. The tank divisions have since been broken up into smaller units and reformed into brigades that are more pliable on the battlefields.

On one of the sections of the Western Front, the 10th German Tank Division had succeeded in wedging into the defensive units of the Red Army, and the high command ordered a small tank unit to wipe out the enemy wedge—no easy job, since the Germans had had time to entrench themselves firmly in this position.

Two villages, situated at the edges of the wedge, had been turned into strongholds by the Germans, who had constructed pill boxes, dug tanks into the ground, fitted out blindages, set up barbed wire fences, and laid mines around the approaches to these villages.

According to the plan of the high command, seventeen tanks were to take part in the attack on the entrenched German line, and the whole attacking group was to form in four sections.

Three tanks were to advance forward for purposes of reconnaissance and bear the brunt of all the enemy fire in order to establish the location of the German guns.

The next two tanks, maneuvering all the while, were to support the first three with their guns.

The third section of six tanks was to crush the enemy's antitank defense.

Following them would come the fourth group of six tanks, whose job it was to insure the advance of the attacking infantry that would follow right after the tanks.

MAJOR GENERAL MIKHAIL KATUKOV  
Red Army

*Soviet Tank Fighting*



# **The Revolution: American Military Policy Emerges from the Crucible of War\***

by C. J. BERNARDO, Ph.D. and EUGENE H. BACON, Ph.D.

## **Increased Problems of Enlistment**

Whatever the merits or demerits of the bounty system, the recruitment policy was dependent upon the grant of land and money, and as time wore on, it became progressively more difficult to induce men to serve in the Continental Army. Early in 1777, the New England States provided for an increase of \$33½ to the \$20 offered by the Government; and within a short time, Massachusetts and New Hampshire increased their allotments to \$86⅔ for each recruit. This tempting increase called a halt to re-enlistment in the older regiments whose men naturally went home to take advantage of the larger sums offered.<sup>81</sup> Desertions had become so numerous that Washington, on April 6, 1777, was forced to issue a proclamation granting a general pardon to all deserters if they would rejoin their regiments by May 15, or surrender to any officer of the Continental Army.<sup>82</sup>

In this contingency each State adopted its own measures to meet the quotas set by Congress. To meet her quota of 2,000 men, Maryland experimented with volunteers who were offered an equitable bounty together with exemption from all taxation during the time they remained on duty as well as a choice of regiments. And, when even such liberal terms were disregarded by her citizens, Maryland resorted to the dubious practice of granting a free pardon "to all such disaffected persons charged with any crime against the state, who may voluntarily enlist for three years as aforesaid, such persons to be entitled to the bounty and all privileges. . . ."<sup>83</sup>

When finally it became evident that voluntary enlistments, even when stimulated by generous offers, failed to procure the Continental quotas, Congress was forced to recommend a draft of the militia.<sup>84</sup> On February 6, 1777, the States were called upon to draft men for nine months to be discharged before that time in proportion as they would be replaced by the three year men. Even this brought little assurance of a successful recruitment policy. The States used it as an excuse to enlist criminals,

neer-do-wells, and vagabonds of every description. In Maryland, every idle person who was able-bodied and with neither fixed domicile nor family, was made eligible for service with a choice of enlisting for nine months or for three years.<sup>85</sup>

In administering these draft calls the States demonstrated a laxity which emphasized the apprehensions of the general officers especially in the northern theater where it was reported that Massachusetts was drafting men lately deserted from Burgoyne's Army. Fearful of the consequences of such a procedure, Washington memorialized the Massachusetts Council of Safety on "the danger of substituting, as Soldiers, men who have given glaring proof of a treacherous disposition, and who are bound to us by no motives of attachment. . . ."<sup>86</sup> In the South, Congress recommended raising battalions of regular troops to be engaged for one year, for the defense of the Southern States, but not to be compelled to serve in any enterprise or in any State north of Virginia.<sup>87</sup>

In the meanwhile, the British Government had dispatched a Commission to America to discuss the pos-

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sibility of settling the difficulties by conciliation. But by this time all hope of settling the issue upon peaceful grounds had vanished. Burgoyne's magnificent Army had been defeated and captured, and the French had made last minute preparations to intervene, by force of arms, in America's behalf. Having tasted the fruits of victory, and encouraged by the prospect of French and Spanish aid, the patriot leaders were in no mood to talk peace. Complete independence was the only solution. Any concessions made now by the British, Washington was sure, were merely "specious allurements of Peace" and the only manner in which to counter whatever sympathies Americans would entertain for ending the war on this note was "to strengthen the army, and place it upon a substantial footing." This would "conduce to inspire the Country with confidence, [and] enable those at the head of affairs to consult the public honour and interest. . . ."<sup>88</sup>

In answer to those who taunted him with the familiar bogey of militarism, Washington wisely called attention to the illogical reasoning which prompted such fears. The "jealousy which Congress unhappily" felt for the Army was based upon the prejudices of Europeans for armies of mercenaries who possessed none of the ties "or interests of Citizens or any other dependence, than what flowed from their Military employ"; and, while Europeans were so disposed against standing armies in peacetime,

it is our policy to be prejudiced against them in time of war; and though they are Citizens having all the ties, and interests of Citizens, and in most cases property totally unconnected with the Military Line. If we pursue a right System of policy, in my Opinion, there should be none of these distinctions. We should all be considered, Congress, Army, &c. as one people, embarked in one Cause, in one interest; acting on the same principle and the same End. . . .<sup>89</sup>

Furthermore, this "jealousy" demonstrated a weak tendency to disregard the terrible suffering endured by the men thus far. No history, he concluded, "now extant, can furnish an instance of an Army's suffering such

uncommon hardships as ours have done, and bearing them with the same patience and fortitude."<sup>90</sup>

Because these strong inclinations against a strong army threatened to undermine all his plans as well as to alienate the support of "our recent" allies, Washington poured forth a veritable flood of letters upon Congress, his friends, and the various governors in a desperate effort to bring the armed forces to some respectable size.<sup>91</sup> With the defeat of Burgoyne, and the expected intervention of France and Spain, it was idle fancy to think the British would not step up the crescendo of the war. Against this possibility, Washington laid his plans, and to meet this ominous situation, more men, not less, were needed. And, if it proved difficult to recruit men for the Continental Army, regardless of the increased bounty, then stronger measures were in order.

Mounting problems, together with the failure of the recruitment policy, led Congress once more to grant Washington a measure of increased power. Each State was asked to meet the quota set up by the Commander-in-chief,<sup>92</sup> who again administered his authority with wisdom and justice. While it was necessary to fill the quotas, it was also equally important to avoid any disturbance of the economic equilibrium of the various States. Food was an essential item of war material, just as munitions and clothing. Therefore the farmer, as well as the artisan and the soldier, played equal parts of significance in the war effort.<sup>93</sup> This Washington had to study, with the weak aid of a Congressional Committee, for the purpose of coordinating the various parts of the young nation's economy; but it was a task he had to perform alone, and all major decisions had to be made by him.

Left to his own devices, he made the most of the opportunities thrust into his hands. As the new recruits came into the ranks time began to play an important role in the strategy to come. With little time to train large bodies of militia in the ways of war, he boldly divided them among the regular troops, who, "being divided in this manner to the Militia, will serve to give them confidence and probably make them act better than they would alone."<sup>94</sup> After

three years of war, the Commander-in-chief had learned to make the most of his inferior resources. This experiment served him well and paid large dividends two years later when General Daniel Morgan at Cowpens with his militia bayonets routed the superior cavalry forces under Colonel Tarleton.

This increased effectiveness of the militia troops, however, did not tempt them to remain in the service beyond their enlistments, so that by the end of the year 1778 the perennial problem of enlistments reappeared to plague Washington. By this time, he had conclusively made up his mind that the only salvation lay in a vigorous prosecution of the draft by State quotas. This, together with the voluntary enlistments in the Continental Army, he felt, would yield a larger return, although he admitted, "both modes in all probability will not produce near as many as may be found necessary."<sup>95</sup> In Maryland a spirited effort was made to meet the assigned quotas but the men thus drafted were permitted to accept service for nine months, three years, or for the duration.<sup>96</sup> Moreover, the draftees were to be subject to the laws of the State; they were not to be turned into companies with regular troops, and for every 25 men there was to be at least one commissioned officer chosen from among their own number.<sup>97</sup> Similar experiments were conducted by the other States with each granting large bounties, and leaving to their own discretion the alternative of service in the Continental or State organizations. This active competition between the local and central authorities had by now become so keen that it was difficult to guarantee any enlistment in the Continental Army.

Again Washington called the attention of Congress to the necessity for improving this condition with special emphasis upon the coming campaign of 1779. While urging that body to either enlist the men already in the Army for the duration of the War, or some other similar plan, he made it clear that recruitment would be contingent upon the plan of operations to be determined by the Board of War with reference to offense or defense. Since offensive operations required a larger force, the requirements of the Army would



naturally hinge upon the decision of Congress; but in any event something had to be done to correct the inequality resulting from the desire of the States to recruit for their own purposes first. Moreover, sober reflection upon the enormous bounties granted by them made it difficult to stimulate interest in the Continental Army, and almost impossible for the Congress to grant equal sums. But, if the State bounties were to be abolished by act of Congress, then it would be wise to raise the Continental bounty "as high as a hundred and fifty dollars or perhaps higher."

Acting upon this recommendation, Congress on January 23, 1779, authorized Washington to take the most effectual methods to reenlist for the continuation of the war, "all such of the continental troops as are not expressly engaged for that period," as well as "raising new recruits . . . to complete the battalions to their proper complement. . . ."<sup>98</sup> Whatever Washington might have achieved by the promise of these resolves was negated by the failure of Congress to abolish the State bounties. Instead of limiting the bounty system, the States proceeded to increase them to excessively high figures.

By the Summer of 1779, New Jersey offered \$250 to each recruit in addition to the clothing, land, and the \$200 offered by Congress. Virginia on May 3, offered \$750, a suit of clothes once a year, and 100 acres of land to each recruit enlisting for the duration.<sup>100</sup> But despite these manifestations of generosity, the Virginia battalions were only one third complete and little hope could be held out for bringing them up to strength.<sup>101</sup> Other States followed suit placing the Congress at a serious disadvantage; and while the former interfered in this manner, no general system for regulating the bounty could be adopted.<sup>102</sup> Not to mention the discontent that arose in such a contingency among those men who had volunteered for smaller sums. Alarmed over the growing discontent among the veteran soldiers, growing out of this iniquitous system, Washington urged the Board of War to make some adjustment for those men who had undergone "a long service, and who engaged for the War in the

first instance on a very moderate bounty." A gratuity at this time, in recognition of the services rendered by the older men would serve a dual purpose: It would put an end to desertions and while "operating as a reward might have a good effect and quiet their discontent."<sup>103</sup> Within two weeks, Congress resolved to grant the \$100 gratuity as a reward for the "services of those faithful and zealous soldiers who at an early period engaged in the armies of the States during the war. . . ."<sup>104</sup>

Even all these lucrative gifts failed to inspire the men to volunteer their services for the duration of the war, and by the end of this year, Washington again repeated his remonstrances for an adequate military force to achieve success. For five years, the system of recruitment had failed miserably, and because he could not count with any degree of certainty upon the number of men needed for any campaign, Washington was forced to go on the defensive, resorting to the offensive only when the enemy would leave an opening. This condition was well known, but little regard was expressed for the dangers to which such a system exposed the nation. And, while the men were not forthcoming as they were needed to fill the battalions, each of these units remained understrength while the number of officers remained fairly constant.

#### **Failure of the Military Policy Calls for a Reorientation of Ideas**

By January, 1778, Washington could count 87 battalions in the field, all understrength, but all with the required complement of officers. This could be corrected, he was sure, by temporarily reducing the number of battalions and sending the supernumerary officers "back to the state, to collect such men, as on various pretenses were left behind and deserters"; and aided by "the whole efficiency of the State . . . to exert all their endeavors towards completing the . . . other regiments or such of them as Congress shall direct."<sup>105</sup>

Voluntary enlistments being what they were, Washington reaffirmed the necessity for an annual draft of the militia,<sup>106</sup> a proposal he had made early in 1777. This, he felt, was more practical than a draft for the duration or for a number of years, either

of which might be looked upon as "disgusting and dangerous"; and, although even this might not be desirable it was

the best our circumstances will allow; and we shall always have an established corps of experienced officers . . . It is the only mode, I can think of, for completing our battalions in time . . . and it has this advantage, that the minds of the people being once reconciled to the experiment, it would prove a source of continual supplies hereafter.<sup>107</sup>

Within a month, Congress resolved to instruct the States according to the letter of Washington's recommendations, "to fill up by drafts from their militia . . . their respective battalions of continental troops." The men so drafted were to serve for a period of nine months, and under no circumstances were prisoners of war or deserters from the enemy to be counted among the draftees.<sup>108</sup>

As the troops recruited in this manner made their way to Washington's headquarters at Valley Forge, without arms, accoutrements, and clothing, he began to grow apprehensive, not only for himself, but also for his generals because of the difficulties of properly arming and clothing these men. Even the genius of Von Steuben for turning raw recruits into disciplined soldiers was not enough to arm these men. He could drill them, but he could not arm and clothe them. While making final preparations for the campaign of 1778, Washington was constrained to urge upon the States the necessity for drawing supplies and arms from their own magazines.<sup>109</sup>

Notwithstanding the earnest efforts of Congress to follow the advice of the Commander-in-chief, the personnel procurement problem remained as acute as it had been. And now that France had actively engaged to dispatch troops as well as supplies in support of the cause, the situation became embarrassing as well as dangerous. The year drew to a close and Washington went into winter quarters perhaps with some misgivings and a longing for his own hearthstone. But there was little time to dwell upon such luxuries; the job was yet to be done. The Army was understrength, few men were enlisting for long pe-



riods, and it was almost certain that the British effort would be stepped up.

Something had to be done to counteract the cause of this condition. Something had to be done to offset the effect of the increased State bounties and the only alternative seemed to be an increase in the Continental bounty. After much debate and more dissension, Congress on January 23, 1779, allowed Washington the added authority to offer a bounty of \$200 to all enlistees for the duration of the war.<sup>110</sup> But within five weeks of this decision, he was relieved of this responsibility when Congress decided, in the interest of economy, to reduce the number of State battalions to 80, and requested each State to complete its quota by draft upon the militia or "in any other manner they shall think proper. . . ."<sup>111</sup>

In November, anticipating the need for the campaign of the coming year, Washington pushed this plan a little further by recommending the adoption of a proposal whereby each State would be informed of the "real deficiency of its troops and called upon to make it up . . . by a draft; that the men drafted join the Army by the 1st of January in the succeeding year. . . ." The advantage of such a system whereby the levies would be brought to the Army at a particular time to serve a fixed period was obvious. Only then could he make "plans of operation with some degree of certainty, and determine with more propriety and exactness on what we may not be able to do. . . ."<sup>112</sup>

In Congress where the legislative mills ground slowly, this latest appeal for fixing the military establishment made but a small impression,<sup>113</sup> and in fact, was bitterly criticized. Many felt that "the Number of Men enlisted for the War is already sufficient and that reinforcements are not necessary. . . ." This feeling was brought to the attention of Washington by Elbridge Gerry who implored him to renew his recommendations in order to set the matter straight, and also because of the uneasiness this Congressional apathy was creating in the French Court "who last year remonstrated in very friendly, but expressive Terms, against the Delays of our military preparations for that Campaign."<sup>114</sup>

But no number of letters or remonstrances from the Commanding Gen-

eral could change the situation in Congress. Being powerless to do more than recommend a policy procedure, and prone to reflect the tendencies of their constituencies, the Congress spent a great deal of time in debate and examination, while the States were disposed to find every excuse for evading the issues brought to their attention. Washington could assign ten thousand reasons why this condition was dangerous even in the least extreme, and unless Congress could be vested "with a controuling power in matters of common concern, and for the great purposes of War," he gave it as his honest opinion "that it will be impossible to prosecute it to any good effect."<sup>115</sup>

This Congressional debility was sharply emphasized on February 9, 1780, when it was resolved to raise the number of men in the service to 35,211, leaving to the States the discretion as to the manner in which the men would be enlisted as well as the period of such enlistments. Furthermore, in following the dictates of the States, Congress neutralized any hope of expediency by directing Washington to furnish the States with accurate returns of the troops belonging or accredited to their respective quotas. In effect, this meant that the States could refuse to meet any quota until they were informed of the exact number of men they had in service.<sup>116</sup> As a result, the State authorities made little effort to meet the quotas set for them, and by June, Washington in despair, penned a letter to James Bowdoin describing the consequences the country would face if the men were not recruited immediately. If this were not done "we cannot cooperate with . . . our Ally on any large scale, and may . . . easily become a ruined and undone people."<sup>117</sup>

While the States were ill-disposed to support the idea of a large army recruited for the duration of the war, under the control of Congress, the only alternative was to rely upon whatever new levies could be brought in for shorter terms. This meant a continued fluctuation in manpower which made it impossible to consider offensive operations, and which threatened to reduce Americans "to the humiliating condition of seeing the cause of America, in America, upheld by foreign arms."<sup>118</sup> Worse

than this perhaps, was the financial condition of the nation which was aggravated by each successive attempt to engage men for the service. Short-term enlistments gave the Army two sets of men to feed and pay, "the discharged Men going home, and the Levies coming in." This situation doubled the consumption of provisions, arms, accoutrements, and military stores of every description despite every precaution taken by the Commander-in-chief to avoid such a financial burden.<sup>119</sup>

While this policy accelerated the inflationary spiral by forcing the Congress to increase their paper emissions, it also undermined the economic structure of the land. The frequent calls upon the militia interrupted cultivation, decreased the quantity of production, and occasioned a scarcity in food commodities with an attendant increase in prices. In an Army "so unstable as ours," wrote Washington,

order and oeconomy have been impracticable. No person who has been a close observer of the progress of our Affairs can doubt; that our currency has depreciated without comparison more rapidly from the system of short inlistments, than it would have done otherwise.<sup>120</sup>

Furthermore, he continued, there was every reason to believe the war had been protracted on this account, for "had we kept a permanent Army on foot, the enemy would have had nothing to hope for, and would, in all probability, have listened to terms long since." Military, political, and economic considerations dictated the need for a more permanent army, and after five years of experimentation, even the people could be brought to see the wisdom of such a move. Many incentives of immediate interest could be held up to them as an inducement to submit to a draft for three years or for the duration, among which were the repeated bounties they had to pay and the frequent economic interruptions occasioned by the necessity for calling out the militia periodically.<sup>121</sup>

The advantage of a long-term army or at least one sufficiently strong to serve for the duration, had already been brought to the attention of the several governors by



Washington and his close friends. Few could doubt that it would be less costly to make every exertion for a more permanent military establishment, and many in and out of Congress began to display a sympathetic regard for the advice so often tendered, but so sadly neglected. After a close examination of the status of the organizations in being, Congress concluded that what was needed was not more men, but rather a regrouping and consolidation of the units in existence. This would correct the ratio of officers to men with a resultant efficiency of organization as well as order and economy.<sup>122</sup>

Guided by these objectives, Congress on October 3, 1780, resolved to reorganize the Army and at the same time strongly recommended that the length of service be for the duration of the war. The Regular Army was fixed to date January 1, 1781, at 4 Regiments of Cavalry, 4 Regiments of Artillery, 49 Regiments of Infantry, Moses Hazen's Regiments, and 1 Regiment of Artificers; or approximately 36,000 men. These were apportioned among the States who were to furnish not men, but Regiments in full strength, enlisted for the war.<sup>123</sup> If the quotas could not be filled with recruits for the duration, then the States were urged to

supply the deficiency with men engaged to serve for not less than one year, unless sooner relieved by recruits inlisted for the war, which they are requested to exert their utmost endeavours to obtain, as speedily as possible; and in order thereto, it is further recommended that the officers at camp be empowered and directed to use every prudent measure, and improve every favourable opportunity, to inlist, for the continuance of the war such of the men belonging to their respective states, as are not engaged for that period. . . .<sup>124</sup>

By this Act, Congress lopped off many of the regiments which were understrength and consolidated those remaining for added efficiency and economy; and it gave Congress the opportunity of separating the wheat from the chaff in the selection and retention of officers, many of whom now faced the prospect of immediate separation as surplus officers. To

avoid giving offense to those who became jobless, and also to soothe the feelings of those who remained on duty, the supernumeraries were granted, beginning January 1, "half pay for seven years, in specie, or other current money equivalent, and also to grants of land at the close of the war, agreeably to the resolution of the 16 September 1776."<sup>125</sup>

In general, the merits of this reform were met with genuine approval. But the summary dismissal of the supernumerary officers left something to be desired. Looking beyond the existing state of emergency, Washington warned Congress that this method of solving the problem of excess officers was filled with "the most mischievous consequences." The solution lay not in separating them in such a manner, but rather in providing a policy which would lay the foundation of a sound preparedness program for future contingencies. The half-pay provision as envisioned in the Congressional plan would leave those separated dissatisfied and unwilling to commit their services at any future date; and would leave those remaining in the service suspicious of the intention of Congress toward them. But half-pay for life would provide the prospect of a permanent independence and keep the officers closely associated with the Army in return for which they would unhesitatingly "submit to many privations and to the inconveniences which the situation of public affairs makes unavoidable. . . ."<sup>126</sup>

With reference to the 49 Regiments of Infantry, Washington expressed himself with some misgivings. Even if the regiments could be completely enrolled, the aggregate number of men, after deductions for casualties, sick, and absent, would still remain too small; and fully aware of the temper of the States with reference to recruitment, his goal of 30,000 effectives could not possibly be attained. For this reason, he deplored the conduct of Congress in proposing an alternative term of service and in leaving the reduction and incorporation of the regiments to the discretion of the States. Reliance upon them to fill the quotas of men and supplies, was contrary to his sentiments and policy because it was an "adherence to the State system," and

also because it would be "productive of great confusion and discontent. . . ."<sup>127</sup> "In the present humours of the States," he continued,

I should entertain the most flattering hopes that they would enter upon vigorous measures to raise an army for the War, if Congress appeared decided on the point; but if they hold up a different idea as admissible, it would again be concluded, [by the States] that they [Congress] do not consider an Army for the War as essential. . . .<sup>128</sup>

Congress promptly executed these observations into a set of resolutions ten days later,<sup>129</sup> and Washington, gratified by this turn of heart, unburdened himself to his friend: "Congress, at length, have resolved to do that, which an adoption of four years ago, would 'ere this have put an end to the war . . . I mean the raising of an Army for the War. . . ."<sup>130</sup>

More than an exchange of felicitations, however, was necessary to detach the States from their habitual laxity in filling their quotas of men. During the first three months of 1781, Washington exhorted his friends and the various governors to fill the requisitions for men, but by the 1st of April, the Adjutant General could only make a partial report on the total number of men in the Army at that time.<sup>131</sup> By mid-July, the rank and file of the Continental Army, computed by brigades, regiments, and detachments, totaled 5,835.<sup>132</sup> In the meantime, the campaign against Cornwallis in Virginia had already begun. With such meager resources, and with small prospect of improvement, the campaign was carried on to a successful conclusion. For this victory the American people are indebted not so much to the valuable material aid of the French as to the militia organizations<sup>133</sup> which sprang to the defense of that State and to a benevolent Providence, Who, despite all their shortcomings, approvingly guided their destinies.

Thus, on the eve of the Battle of Yorktown, with Congress exerting its authority to an unprecedented degree, with the Army organized on an efficient basis, and with the States inclined to be more sympathetic to



the resolutions of Congress for recruiting men,<sup>184</sup> the Army dwindled to less than 6,000 men. What manner of circumstance was responsible for this situation? The answer was

six years in the making. While the interests of the States dictated the policy of the Government, the central authority was rendered impotent to deal with the many problems cre-

ated by the war, which the States individually could not solve, and not the least among which was the depreciation of the currency and its attendant evils.

<sup>184</sup>On March 14, 1777, Washington reported to Congress that the Army in New Jersey numbered 3,000. "These, 981 excepted, are militia and stand engaged only till the last of this month." See *ltr Washington to President of Congress*, March 14, 1777, 7 *WW*, 288.

<sup>185</sup>Washington's proclamation, April 6, 1777, *ibid.*, p. 364.

<sup>186</sup>Maryland, *Votes and Proceedings*, *op. cit.*, p. 12. Tax exemption was extended to include all bounty lands offered by the Congress since September 16, 1776, *ibid.*, July Session, 1779, p. 137 (August 5, 1779).

<sup>187</sup>Freeman, *op. cit.*, p. 387.

<sup>188</sup>Maryland, *Votes and Proceedings*, March Session, 1778, p. 86.

<sup>189</sup>Washington to James Bowdoin, March 17, 1778, 11 *WW*, 98-99.

<sup>190</sup>Congress also authorized the payment of a bounty not to exceed \$200 for these recruits. See *Resolve*, March 29, 1779, 13 *JCC*, 388.

<sup>191</sup>Washington to John Bannister, April 21, 1778, 11 *WW*, 287.

<sup>192</sup>*Ibid.*, pp. 290-291.

<sup>193</sup>*Ibid.* See also Miller, *Triumph*, p. 483. The suffering of the men at Valley Forge was well known in the country and in Congress; and it contributed in no small degree to deter others from enlisting lest they share the same fate. On the other hand, these "ragged Continentals" served to inspire their countrymen by their fortitude. John Laurens cherished "those dear ragged Continentals, whose patience will be the envy of future ages"; and Von Steuben recognized in them a soldierly talent superior to any he had ever seen. See John McAuley Palmer, *General Von Steuben*, New Haven, Yale University Press, 1937, p. 137.

<sup>194</sup>Washington to Thomas Wharton, Jr., April 11, 1778, 11 *WW*, 248; Washington to Thomas Johnson, May 17, *ibid.*, pp. 404-405; Washington to R. H. Lee, May 25, *ibid.*, p. 452; Washington to Patrick Henry, May 23, *ibid.*, p. 438; Washington to General Charles Scott, May 22, *ibid.*, pp. 433-434.

<sup>195</sup>See Upton, *op. cit.*, p. 30.

<sup>196</sup>Washington to President Thomas Wharton, Jr., April 11, 1778, 11 *WW*, 369-370.

<sup>197</sup>Washington to Lafayette, July 27, 1778, 12 *WW*, 237.

<sup>198</sup>Maryland, *Votes and Proceedings*, 1778, March Session, pp. 87-91.

<sup>199</sup>*Ibid.*

<sup>200</sup>*Ibid.*, p. 97.

<sup>201</sup>Washington to Committee of Congress, January 13, 1779, 14 *WW*, 4.

<sup>202</sup>13 *JCC*, 108; 298-299.

<sup>203</sup>Upton, *op. cit.*, p. 41. See also Montross, *op. cit.*, p. 331. This author cites a figure of \$400 and 300 acres of land for each recruit in Virginia. In December, 1779, Rhode Island offered \$300 to each non-commissioned officer and soldier "who has enlisted to serve during the War, as One of this State's Quota of Continental Troops. . . ." See Rhode Island, *Laws of the General Assembly*, December Session, 1779, p. 20. North Carolina in January of that year offered \$300 to all volunteers who agreed to serve three months for the

defense of that State and neighboring territories. See North Carolina, *General Assembly*, 1778, January 19, 1779, Chap. 2. In April 1780, the same provisions were made for Volunteers to go to the aid of South Carolina, *ibid.*, *General Assembly*, 1780, April 17, 1780, Chap. 26; on the same date the sum of \$500 plus \$500 at the expiration of each year's service for three years in addition to a prime slave and 200 acres of land to all those who enlisted in the State's continental quotas. See *ibid.*, Chap. 25; *ibid.*, January 18, 1781, Chap. 2.

<sup>204</sup>Palmer, *op. cit.*, p. 209.

<sup>205</sup>It is only fair to say that by this time the continental currency was in such a sad state of depreciation that money values had spiraled downward.

<sup>206</sup>Washington to Board of War, June 9, 1779, 15 *WW*, 252-253.

<sup>207</sup>14 *JCC*, 758.

<sup>208</sup>Washington to Committee of Congress With the Army, January 29, 1778, 10 *WW*, 371.

<sup>209</sup>Washington urged the draft of enlisted men only—there being a sufficient number of officers on duty.

<sup>210</sup>Washington to the Committee of Congress with the Army, January 28, 1778, 10 *WW*, 366-367.

<sup>211</sup>*Resolve* of February 26, 1778, 10 *JCC*, 199-203.

<sup>212</sup>Washington to Board of War, March 6, 1778, 11 *WW*, 33-34; Washington to Governor William Livingston, April 26, 1778, *ibid.*, p. 310.

<sup>213</sup>13 *JCC*, 108.

<sup>214</sup>*Ibid.*, pp. 298-299. The bounty of \$200 was continued.

<sup>215</sup>Washington to President of Congress, November 18, 1779, 17 *WW*, 128-130.

<sup>216</sup>One authority shows that Congress sometimes spent as much as three months in framing a recommendation to the States; and they in turn, might take six months more in approving or rejecting the proposal. See Miller, *Triumph*, p. 434.

<sup>217</sup>Gerry to Washington, January 12, 1780, quoted in Edmund C. Burnett (ed), *Letters of Members of the Continental Congress*, Washington, Carnegie Institute of Washington, 1931, Vol. 5, p. 7. For the attitude of Congress in this regard see 16 *JCC*, 81 ff. On February 9, 1780, Congress fixed the size of the Army at 35,211 men and urged the States to fill their "respective deficiencies" for the service of the present year. In other words, these deficiencies were to be filled by men who would serve only to the end of the year. *Ibid.*, pp. 150-151.

<sup>218</sup>Washington to John Armstrong, March 26, 1781, 21 *WW*, 379.

<sup>219</sup>16 *JCC*, 150-151. This was an almost impossible task for Washington had no way of ascertaining the exact number of men from each State in the service especially when it is understood that the Army was scattered over the country.

<sup>220</sup>Washington to Bowdoin, June 14, 1780, 19 *WW*, 10.

<sup>221</sup>Washington to President of Congress, August 20, 1780, 19 *WW*, 404.

<sup>222</sup>*Ibid.*, p. 409.

<sup>223</sup>*Ibid.*, p. 410.

<sup>224</sup>*Ibid.*, p. 411. Nathanael Greene called the attention of Congress to the dangers of

any plan for calling out large bodies of militia: "the resources of the country cannot support it. . . ." See Greene to Reed, September 19, 1780, Greene, *op. cit.*, Vol. 2, p. 222.

<sup>225</sup>Congress tried to correct this situation as early as December, 1777, when the number of officers was "out of proportion to that of the privates," by urging the States to suspend "filling up any vacancies in their respective regiments until they shall hear further from Congress on the subject." *Resolve* of December 31, 1777, 9 *JCC*, 1037.

<sup>226</sup>On October 11, Washington objected to the incorporation of 4 Regiments of Cavalry, urging instead 4 legionary corps each consisting of four troops of mounted dragoons and two of dismounted dragoons. In addition to this he recommended also 2 partisan corps consisting of mounted and dismounted dragoons. These were approved by Congress on October 11. 18 *JCC*, 960.

<sup>227</sup>*Ibid.*, pp. 893-895.

<sup>228</sup>*Ibid.*, pp. 896-897. On October 21, the rank and file of the infantry regiments was fixed at 612 men each.

<sup>229</sup>Washington to President of Congress, October 11, 1780, 20 *WW*, 158-159. In this regard, Washington no doubt had in mind a system of reserve officers who could be called to duty in any emergency.

<sup>230</sup>*Ibid.*, p. 165.

<sup>231</sup>*Ibid.*, p. 164.

<sup>232</sup>18 *JCC*, 958-960.

<sup>233</sup>Washington to Edmund Randolph, November 7, 1780, 20 *WW*, 317. The Congressional Resolves of October 21, were executed into General Orders by Washington and published for the Army on November 1. See *ibid.*, pp. 277-281.

<sup>234</sup>For the four States of Connecticut, Rhode Island, Massachusetts, and New York, General Hand could report a total of only 527 men.

<sup>235</sup>Washington to Benjamin Lincoln, February 21, 1781, 21 *WW*, 264-265; Washington to John Armstrong, March 26, *ibid.*, p. 379; Report of T.A.G. on Recruitment, April 1, *The Manuscript Collection of George Washington*, Washington, Library of Congress, Vol. 169, No. 93; Memo Tench Tilghman, July 15, 22 *WW* 388 note.

<sup>236</sup>Washington was fearful that the resort to short enlistments, despite the *Resolves* of October 21, 1780, would weaken the campaign. See Washington to Col. Fitzhugh, August 8, 1781, *ibid.*, p. 481.

<sup>237</sup>The conclusion cannot be avoided that the delegates to Congress, after six years of service in that deliberative body, must have influenced their States to a degree sufficient to permit the grant of larger discretion of power for Congress. Some evidence of this may be ascertained from a cursory glance over the *Journals*. More specifically, some time in the latter part of 1780, a Committee selected to study the increase of powers for Congress made its report. The prosecution of war, said the report, "renders it highly important to the interests of these United States that at this crisis the common council of America [Congress] should be vested with sufficient power to call forth from time to time the military resources of the said States." See 18 *JCC*, 897.



## NEWS NOTES

### M47 Final Drive Failures

In commenting on reports from Europe that failures in the final drive mechanism of M47 medium tanks are beginning to show up, officials of Army Ordnance state that the difficulty is believed near solution.

Since the unit has consistently passed both the engineering and user tests satisfactorily the corrective measures will be improvement of manufacturing procedures and techniques.

The final drive of the tank is essentially a pair of gears transmitting, in a given ratio, the power from the cross-drive transmission, immediately ahead, to the rear shaft which drives the two track sprockets. Though there is no complication, as with other components having numerous parts, the key position of this final drive unit makes the problem one of primary importance.

These failures apparently occurred because in the early period of the M47, in order to speed up production and overcome certain critical shortages of materials, the manufacturers made some production changes. These at first resulted in shortening the life of the final drive but manufacturers immediately made corrections to improve the life of this part. The recent stoppage of production has been the result of a combined effort on the part of the manufacturers and Ordnance to improve manufacturing procedures. In every possible way, efforts have been made to assure continuing improvement in the life of the final drive by a tighter control of materials and tolerances than was possible during the very early period of production.

Ordnance officials are confident that the voluntary temporary stoppage of work at American Locomotive Company will result in the manufacture of a final drive giving twice the life of those previously manufactured.

### 7th Annual Reunion for Old Ironsides

The 1st Armored Division Association will hold its 7th Annual Reunion in Louisville, Kentucky, on August 27th, 28th and 29th, 1954 at the Kentucky Hotel.

ARMOR—January-February, 1954

Hotel Reservations may be made by writing or wiring the Kentucky Hotel, Louisville, Kentucky, direct. For further information regarding the convention, contact either W/O Andrew N. Kiddey, 1411 Lynnhurst Avenue, Louisville, Kentucky, or, Russell L. Anderson, 2240 Alta Avenue, New Albany, Indiana.

*Editor's note. Meetings of the various Armored Division Associations will be published in News Notes if they are received in time. Last year several notices were received too late.*

### Army Service Schools to Give Special Courses for Civilian Component Officers

Selected National Guard and Army Reserve officers will attend a number of two-week special refresher courses at various Army service schools during the first six months of 1954, the Department of the Army announced recently.

About 1,200 company and field grade officers of National Guard and Reserve Infantry and Armored divisions, Armored Cavalry regiments, non-divisional Antiaircraft Artillery and Field Artillery battalions will take appropriate special refresher courses at The Infantry School, Fort Benning, Georgia; The Armored School, Fort Knox, Kentucky; The Antiaircraft and Guided Missile Branch of The Artillery School, Fort Bliss, Texas, and The Artillery School, Fort Sill, Oklahoma.

The courses, which are under the direction of Lieutenant General John E. Dahlquist, Chief of Army Field Forces, are scheduled to start late in February and end about the middle of June. They are intended to keep the professional readiness of civilian component combat leaders at the highest possible level.

Field Artillery, Antiaircraft Artillery and Infantry division refresher courses are being made available to National Guard and Reserve officers for the first time under the contemplated program.

### National Guard Strength Increased

The National Guard, including both Army and Air, had a net total gain in

strength of more than 61,000 in the past year.

More than 313,000 officers and men were in training in over 5,300 Army and Air National Guard units located in the 48 States, the District of Columbia, Hawaii, Puerto Rico and Alaska as of November 30, 1953, according to Major General Edgar C. Erickson, Chief of the National Guard Bureau.

### Lower Truck and Trailer Expenditures

Reductions in expenditures for new trucks and trailers, caused principally by the adjustment in Army strength and made possible by the improved production base, were announced by the Department of the Army recently.

Six prime contractors are involved in this action, which will result in reduced expenditure of approximately \$140,000,000. It appears at the present time that the quantities of 5-ton trucks and tanks remaining on contract will not be affected.

Affected are the following truck manufacturers who will all produce less than 50 percent of the vehicles remaining to be delivered:

General Motors Corporation, Pontiac, and the Reo Motors Corporation, Lansing, formerly scheduled to produce 2½-ton trucks until March 1955; Willys Motors, Inc., Toledo, formerly scheduled to produce ¾-ton trucks until March 1955; and the Dodge Division of Chrysler Corporation, producer of ¾-ton trucks, also formerly scheduled to produce until March 1955. These four will close down production near the middle of 1954.

Two companies, Checker Cab Company, Kalamazoo, producing the 1½-ton Cargo trailer and Fruehauf Trailer Company, Cleveland, producing the 1½-ton water trailer, were formerly scheduled to remain in production until late fall of 1954. Under the new program their schedules will be reduced approximately one-third, and production on these items will also cease near the mid-year point.

This action is in accordance with present policy to bring procurement schedules in line with the reduced strength of the Armed Forces.



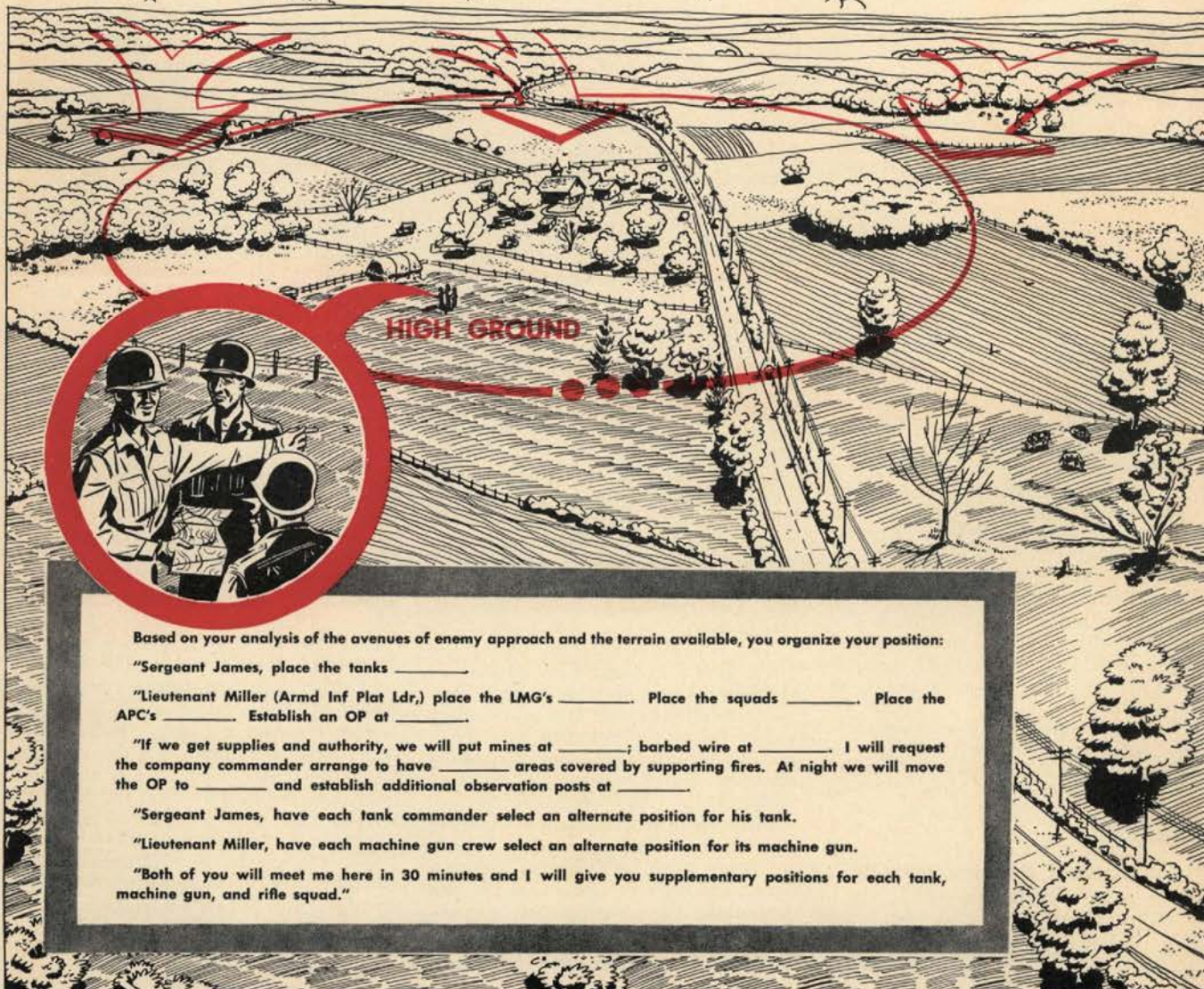
# How would you do it?

## SITUATION NR 1

You are the platoon leader of the first platoon of Co A, 1st Tk Bn. The 301st Armored Division, of which you are a part, has seized an important communications center deep in the enemy rear. The division has been ordered to consolidate its gains and to resupply before continuing the attack. The division has pushed out from its objective and has occupied terrain which favors employment of the mobile defense.

Company A, 1st Tank Bn, has been attached to the 101st Armd Inf Bn. The battalion commander has ordered your company commander to occupy a company strong point. Your company commander has attached the first platoon of Co A, 101st Armd Inf Bn, to you and has ordered you to occupy and defend the position shown on the sketch. The second platoon is on high ground 1000 yards from your left flank. A platoon from the adjacent company is on high ground 1200 yards from your right flank.

You study the terrain on both the map and the ground. You find there are three avenues of enemy approach.



Based on your analysis of the avenues of enemy approach and the terrain available, you organize your position:

"Sergeant James, place the tanks \_\_\_\_\_.

"Lieutenant Miller (Armd Inf Plat Ldr,) place the LMG's \_\_\_\_\_. Place the squads \_\_\_\_\_. Place the APC's \_\_\_\_\_. Establish an OP at \_\_\_\_\_.

"If we get supplies and authority, we will put mines at \_\_\_\_\_; barbed wire at \_\_\_\_\_. I will request the company commander arrange to have \_\_\_\_\_ areas covered by supporting fires. At night we will move the OP to \_\_\_\_\_ and establish additional observation posts at \_\_\_\_\_.

"Sergeant James, have each tank commander select an alternate position for his tank.

"Lieutenant Miller, have each machine gun crew select an alternate position for its machine gun.

"Both of you will meet me here in 30 minutes and I will give you supplementary positions for each tank, machine gun, and rifle squad."





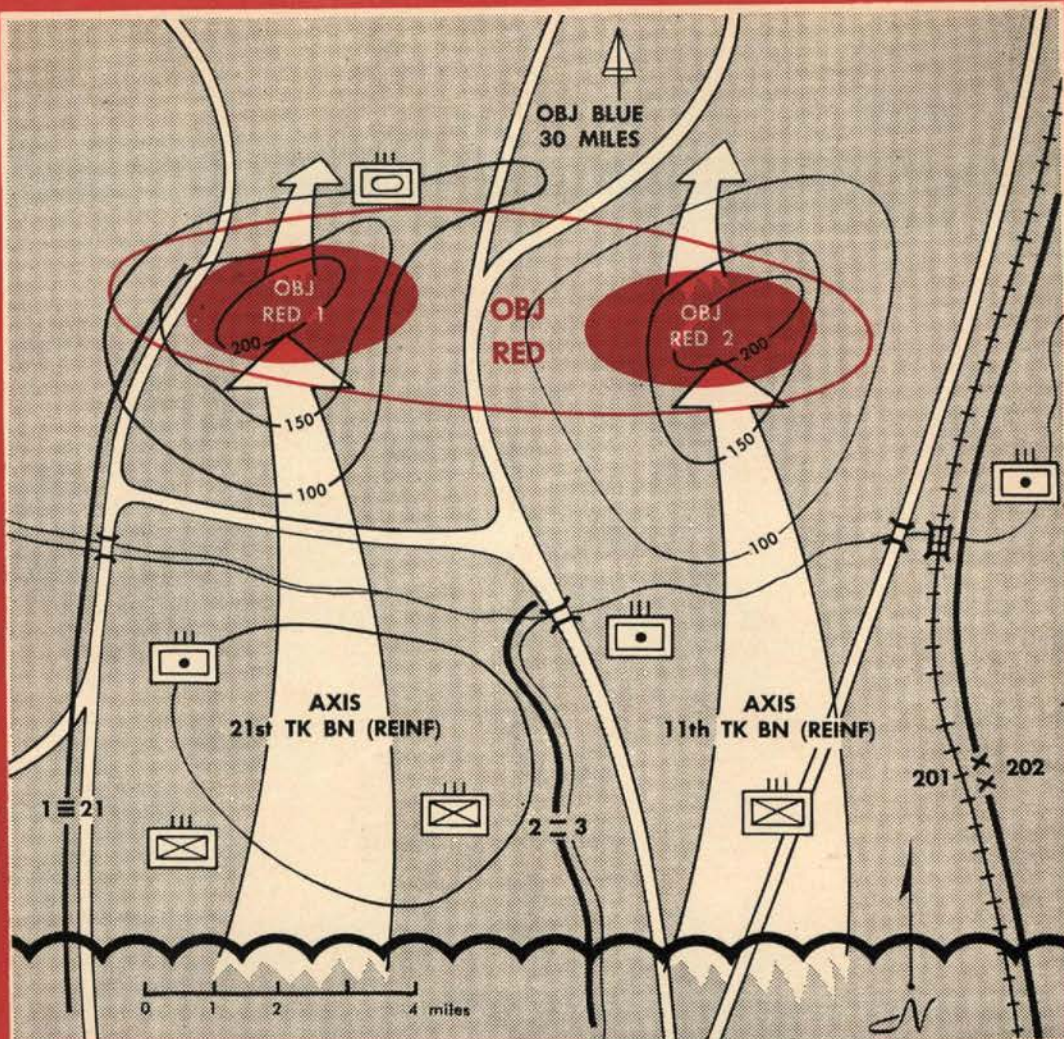
301ST ARMORED  
DIVISION



21ST INFANTRY  
DIVISION



11TH TANK BATTALION  
COMMANDER



## SITUATION NR 2



AGGRESSOR MORTAR  
SUPPORT



AGGRESSOR RIFLEMEN

The 301st Armored Division will attack through the 201st Infantry Division with Combat Command A and Combat Command B abreast to seize penetration objectives RED and WHITE (Objective WHITE is off sketch to the left). It will then continue the attack to seize crossings over the Black River, vicinity Objective BLUE, thirty miles north of Objective RED. CCA will attack through the 21st Infantry with two reinforced tank battalions, the 11th and 21st, abreast. You are the commander of the 11th Tank Battalion. Your battalion, less Company D, is reinforced with Company A and Company B, 101st Armored Infantry Battalion.

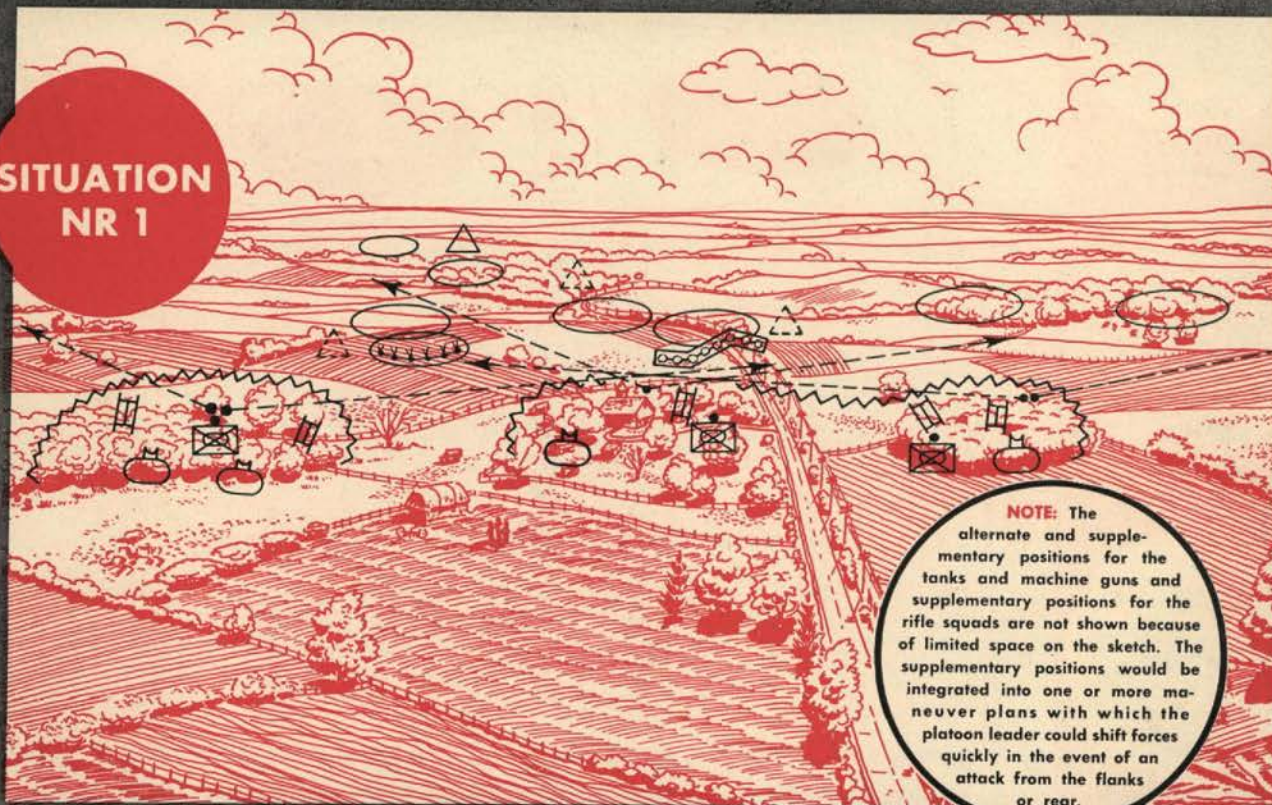
The 21st Infantry is presently opposed by elements of three Aggressor rifle battalions in hastily prepared positions. These battalions are supported by three artillery battalions and have normal mortar support. A medium tank regiment (58 tanks) is known to be located just north of Objective RED 1. Rolling terrain exists along the entire CCA axis to Objective BLUE. The ground is dry and no major obstacles exist. Roads throughout the area are two-lane, hard-surfaced roads. Axes and objectives designated by CCA are as shown.

**AS COMMANDER OF THE 11TH TANK BATTALION, REINFORCED, WHAT FORMATION AND TASK ORGANIZATION WOULD YOU ADOPT? WHAT FACTORS WOULD YOU CONSIDER IN MAKING UP YOUR TASK ORGANIZATION?**



# "How would you do it.?" solutions

## SITUATION NR 1



## SITUATION NR 2

### TASK ORGANIZATION

**Team ABLE**  
Company A, 11th Tank Battalion  
Platoon, Company A, 101st Armored  
Infantry Battalion

**Team CHARLIE**  
Company C, 11th Tank Battalion  
Platoon, Company A, 101st Armored  
Infantry Battalion

**Team BAKER**  
Company B, 11th Tank Battalion  
Platoon, Company A, 101st Armored  
Infantry Battalion

**Team DOG**  
Company B, 101st Armored Infantry  
Battalion

**Battalion Control**  
Company A, 101st Armored Infantry Battalion  
(minus three platoons and mortar platoon)  
Mortar Platoon, 11th Tank Battalion (reinforced with Mortar  
Platoon, Company A)  
Reconnaissance Platoon, 11th Tank Battalion

The commander's estimate of the situation resulted in his decision to attack with two reinforced tank companies abreast to seize Objective RED 2. Anticipating little or no dismounted action short of the river crossing sites for the armored infantry, he attaches only a platoon of armored infantry to each of his tank companies. The enemy's strength and disposition, the terrain, and the missions are made to order for tank employment, so he provides for the employment of the three tank companies intact. The armored infantry's big job will be at the river line; consequently, he attaches only a platoon to each tank company

to cope with possible tank-killer teams or to assist in overcoming small delaying elements short of the river line. To attach more armored infantry to the tank companies would increase their control problems yet not increase their effectiveness in view of the existing terrain conditions and enemy situation. The 81-mm mortar platoon of Company A is attached to the battalion's 4.2-inch mortar platoon to take advantage of that platoon's fire direction center and to facilitate control and massing of supporting fires.



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**"HOW THE GREAT DEMOCRACIES TRIUMPHED, AND SO WERE ABLE TO  
RESUME THE FOLLIES WHICH HAD SO NEARLY COST THEM THEIR LIFE"**

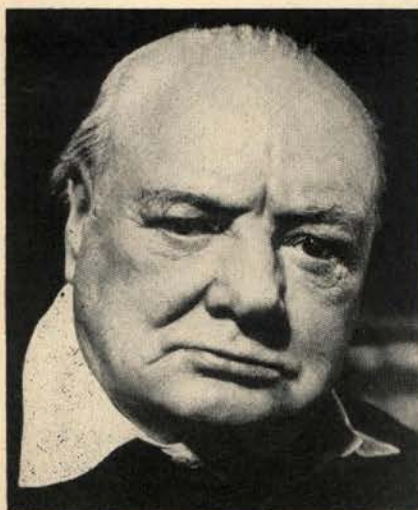
"On July 1 (1945) the United States and British Armies began their withdrawal to their allotted zones, followed by masses of refugees. Soviet Russia was established in the heart of Europe. This was the fateful milestone for mankind."

**TRIUMPH AND TRAGEDY. By Winston Churchill. Vol. 6, 800 pp. Houghton Mifflin. \$6.**

Reviewed by  
**CONSTANTINE BROWN**

The last hundred years have produced only two statesmen, in the real meaning of the word, in Europe. One was Otto Prince Bismarck, Duke of Lauenburg; the other was Winston Spencer Churchill. Both men were the products of the upper class. Both

—The Author—



Sir Winston Churchill, probably the outstanding living international statesman of our time, concludes his series of writings on World War II with this book. With four score years of experience behind him, decisions which he had intimately influenced in shaping World history, are recorded for posterity within these six volumes.

ARMOR—January-February, 1954

This reviewer has picked up this paragraph from the sixth and last volume of Sir Winston Churchill's memoirs as the most pungent and most meaningful of all that he has written.

The British statesman calls his last work "Triumph and Tragedy," but unfortunately tragedy rather than triumph permeates throughout the more than 700 pages of his last historical effort—tragedy for himself and for the western world.

Spectacularly successful as the career of Churchill has been, there is unquestionable sadness in it.

U.S. Army Photos

*A Feature Review  
Exclusive with  
**ARMOR***

—The Reviewer—



Fabian Bachrach  
Constantine Brown received his Doctorate in Political Science from the University of Berlin, Germany in 1912. He was on the staff of the London Times when World War I broke out. He next worked as a reporter on the Chicago Daily News where he became Foreign Service Bureau Chief. Mr. Brown has been Foreign Affairs Editor of the Washington Star since 1930.





Plans for "Overlord" were made firm and the Soviets were to push to the West.

men had one thing strongly in common: their unmitigated love for Country and King in whose services they placed their genius in a one-sided ruthless manner.

But here the parallel ends. Bismarck died when Churchill was 16 years old. Although dismissed by a jealous Kaiser, he lived to see the work he had undertaken for his fatherland fully accomplished. He had

placed the foundations of the German Empire in that of unequalled power and prestige.

Bismarck mercifully died before Kaiser William II smashed his gigantic work.

Sir Winston has passed his 79th birthday, still highly honored and still in the center of the world stage. But during his political days he saw the great British Empire established by

Queen Elizabeth I and her successors, rapidly disintegrate before his eyes. During the last war Sir Winston used the sentence; "I have not become His Majesty's Prime Minister to preside over the dissolution of the British Empire." He did not realize how prophetically true these words would become a few years later. It is in this light of a situation resembling a Greek Tragedy that we must read his antics and his not always generous moves in the pages of "Triumph and Tragedy."

There is no doubt that with an eye to the preservation of Britain's power the prestige in the postwar period, Mr. Churchill made compromises unbecoming to a political Sir Galahad.

His action of putting the small Balkan Nations on the block and making a compromise with Stalin about their division into spheres of influence, made him blush as soon as he had made it. But it did not cause him to change his mind.

In October 1944 Mr. Churchill met Stalin in Moscow. The main topic of conversation was supposed to be the future of Poland. However, the atmosphere of cordiality, which developed at the interview, offered opportunity for settling other problems. "The moment was apt for business, so I said: 'Let us settle about our affairs in the Balkans. Your armies are in Bulgaria and Rumania. We have interests, missions and agents there. Don't let us get at cross purposes in small ways. So far as Britain and Russia are concerned, how would it do for you to have ninety percent predominance in Rumania, for us to have ninety percent of the say in Greece and go fifty-fifty about Yugoslavia.'" Mr. Churchill then proceeded to put his "bargain" on paper and pushed it across to Stalin. "There was a slight pause. Then he took his blue pencil and made a large tick upon it, and passed it back to us. It was all settled in no more time than it takes to set down." That Churchill himself felt remorseful immediately after the bargain was sealed is obvious from the following passage (page 227): "After this there was a long silence. The pen-



Yes—"The enemy expected us but they did not know where or when or how."



cilled paper lay in the center of the table. At length I said, 'Might it not be thought rather cynical if it seemed that we had disposed of these issues SO FATEFUL TO MILLIONS OF PEOPLE, IN SUCH AN OFF-HAND MANNER? Let us burn the paper.' 'No, you keep it,' said Stalin." The cynics at the Congress of Vienna who settled the Napoleonic wars did similar things but less crudely.

The high hopes for an old-fashioned victory and an old-fashioned peace with the inevitable balance of power which was so noticeable in the previous volumes of the European statesman's memoirs have faded away almost entirely. They are being replaced by a deep glum over the future of mankind when he reviews the situation in Europe and in Asia at the end of the war. "Only the atomic bomb stretches its sinister shield before us. The danger of a third World War, under conditions at the outset of grave disadvantage except in this new terrible weapon, casts its lurid shadow over the free nations of the world."

He alerted Harry S. Truman, the successor of his friend Franklin Delano Roosevelt, to these dangers which he recognized so clearly but did not have the courage to bring out before his hopeful fellow citizens.

Unfortunately the American-British friendship had begun to cool off somewhat during the war, after the first meeting between Roosevelt and Stalin had undergone a further dip.

Churchill realized even before VE day that "the Soviet menace had already replaced the Nazi foe." But Britain was exhausted, and so was continental Europe. The only hope was that America with its enormous might should realize it too. His hope that President Truman would stop in London on the way to the Potsdam conference for a heart-to-heart talk, and also to demonstrate the close ties between the two English speaking countries, was not possible any longer. "As will be seen," writes Mr. Churchill, "very different ideas were being pressed upon the new President from influential quarters in Washington.



June 6, 1944—"There was no doubt that we had achieved a tactical surprise."

The sort of mood and outlook which had been noticed at Yalta had been strengthened. The United States, it was argued, must be careful not to let herself be drawn into any antagonism with Soviet Russia. \* \* \* The right policy should, on the other hand, be for the United States to stand between Britain and Russia as

a friendly mediator or even arbiter \* \* \*. These pressures must have been very strong upon Mr. Truman. His natural instinct \* \* \* may well have been different. I could not of course measure the forces at work in the brain center of our closest Ally, though I was soon conscious of them. I could only feel the vast manifesta-



From the sea and the air our ground troops moved into the European continent.



# PREPARATION FOR LEADERSHIP IN AMERICA

By

Brig. Gen. Paul M. Robinett

This book is presented in the hope that it will clarify and facilitate the development of character and leadership in the young men of the nation who must guide our future destiny. In preparing the work, Brigadier General Paul M. Robinett, USA, Ret., has drawn upon the writings of outstanding men of the Western World for source material. He has also drawn upon his own experience as a troop leader in World Wars I and II, as Commandant of The Armored School, and as a staff officer in important assignments which brought him into contact with some of the most eminent men of our time.

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Piercing the Siegfried Line was a prelude to entering the heart of the homeland.

tions of Soviet and Russian imperialism rolling forward towards helpless lands."

Had Mr. Churchill had a more alert Embassy in Washington he might have been able to measure those "forces at work in the brain center" of America. These were the Hisses, the Harry Dexter Whites and the rest of the "cell" leaders inside

and outside the White House entourage. But that is a different story, which is being developed in the United States at this time.

With his dogged tenacity Mr. Churchill urged President Truman to come to London before the meeting between the Big Three began. But all he got was Ambassador Joseph Davies. On May 13 he cabled the



As the "Ring" closed in Europe the tempo of Pacific planning was stepped up.



President: "F. D. R. promised me he would visit England before he went to France or, as it has now become, Germany. We would feel disappointed if you did not come to us." On May 22nd Mr. Truman cabled back that he had asked Mr. Joseph E. Davies to come to me before the triple conference about a number of matters he preferred not to handle by cable. \* \* \* Mr. Davies was known to be most sympathetic to the (Soviet) regime."

The visit was a flop as far as Mr. Churchill was concerned. "The crux of what he had to propose was that the President should meet Stalin first

somewhere in Europe before he saw me. I was indeed astonished at the suggestion. \* \* \* I would not agree in any circumstances to what seemed to be an affront, however unintentional, to our country after its faithful service in the cause of freedom from the first day of the war."

During the 60 years of his political career Mr. Churchill has done everything—including political compromises of which he cannot be proud—for the sake of his country and incidentally for our way of life. He could well have left out from his last volume of the series, *Triumph and Tragedy*, the word *Triumph*.

# THE NONCOM'S GUIDE

Ninth Edition



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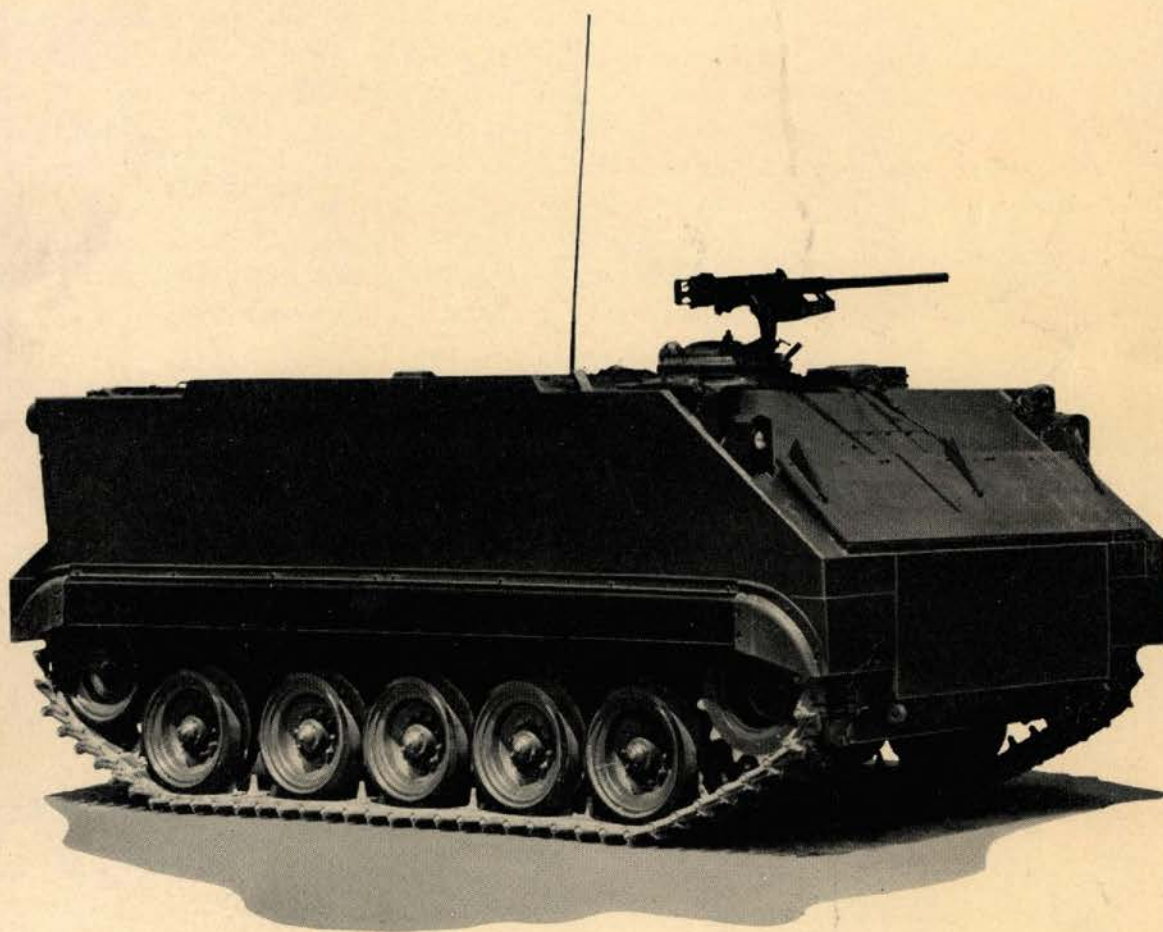
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# ARMOR

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(See Page 21)



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Continuation of THE CAVALRY JOURNAL

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# LETTERS to the EDITOR

## A Lesson in Mobile History

Dear Sir:

Many splendid articles in *ARMOR* correctly refer to our branch as a continuation of Cavalry. Your appropriate editorial in the Jan-Feb issue is a case in point. This letter concerns a paragraph from that editorial which I quote: "The transition from horse to mechanized cavalry actually began in 1933 when the task of developing an armored force was turned over to the Cavalry." In the same issue, on page 15, Col. Brown states: "The Armored School, the Armored Force and all the armored units that were created during the war were founded upon the devotion, the skill, the knowledge and the loyalty of a small group of 'homesteaders' who created the 'Spirit of Armor' at Camp Meade, Maryland, moved it to Fort Benning and finally ended their long march at Fort Knox, Kentucky, in time to create the greatest mobile military force the world has ever known."

Both of the above quotations contain inaccuracies which are not important in themselves but which indicate incomplete knowledge covering the period of transition and the evolution of thinking that brought forth *Armor*. I had the great good fortune to be present and to take a small part in the development and from my records I believe that I can throw some light on the subject. This appears to me to be particularly timely as there is a tendency to ascribe all advances in *Armor* to such men as Fuller, Hart, Guderian, Rommel and other Europeans. Without detracting in the least from their contributions it would be most unfair to ourselves to picture us as plagiarists when in fact our thinking and our experiments were as original and far-sighted as any. When Majors Philipps and Von Greiffenberg of the German General Staff visited Fort Knox in June 1933 the discussions and observations of equipment and tactics clearly indicated our advanced thought as compared with the German. This was particularly true with respect to combined action (mounted and dismounted) and with the close cooperation of cavalry (then called the Covering Squadron and later to become Armored Infantry) and combat cars (as our tanks were then called). Later the same year the French attaché, General Pilon, accompanied the 1st Cavalry (Mecz) on field exercises in Kentucky where he was greatly impressed with our application of cavalry principles and our visualization of a much heavier fighting fire power than current French thought.

To go back to the quotations and the early transition days. It is true, as Col. Brown states, that an early attempt at mechanization was made at Fort (then Camp) Meade. In 1928 an experimental mechanized unit was assembled at that post and made a march to Gettysburg and return. It included some ar-

mored cars, Renault tanks and trucks. I have no direct knowledge of the details but it was very short lived and did not attain formal organization. The first serious attempt at formal organization was made by General Summerall, the then Chief of Staff, in the Fall of 1930 when he directed the formation of the Mechanized Force at Fort Eustis, Va. The report of the Chief of Staff for 1930 includes the following: "The fast tank will require its separation in part from immediate attachment to infantry, in order that advantage may be taken of its superior mobility . . . from being an immediate auxiliary of the infantry, the tank will become a weapon exercising offensive power in its own right. . . . All of the foregoing leads to the conception of a mechanized force of which tanks form the backbone." This was followed by a War Department directive dated 3 Nov 1930 which stated in part: "It (the Mechanized Force) has been organized on the theory that modern tanks through their armament, speed, marching radius and mechanical reliability, are now capable of extended maneuver beyond the immediate support of divisional infantry, and may be so employed. It is believed that its principal role will be the execution of those tactical missions presenting an opportunity for a force capable of tactical and strategic mobility and quick hard striking power. . . . Its ability to crush its way forward over highly organized ground in the face of stabilized resistance is secondary. Its employment nowise diminishes the role of infantry tanks."

What could be more foresighted than this early conception of the role of *Armor*! The Mechanized Force organized at Fort Eustis, Va., under the above directive under command of Lieut. Gen. (then Col.) Van Voorhis consisted of the following units:

Hq and Hq Co (DEML, QM and Sig secs)

1st Plat, Btry E, 69th CAC (AA)  
Tr A, 2d Armd Car Sq  
Btry A, 6th FA  
Det, 1st Chem Regt.  
Co C, 13th Engrs.  
Co H, 34th Inf.  
Co A, 1st Tank Regt.  
19th Ord Co.  
28th Mob Rpr Sec, QMC

Thus all arms and services were represented. A War Department press release early in Jan 1931 described the Fort Eustis command in part as follows: "Altho the United States has kept abreast and even ahead of the world in the development of mechanized weapons, tanks, armored cars, movable guns, etc., these fighting units have always been operated as auxiliary to Infantry. Several European nations, especially Great Britain, have created independent organizations composed of those mechanized weapons and designed to take the place formerly allotted to Cavalry of dealing quick and hard hitting blows away from base. For the first time the United States Army has collected the many mechanized features now serving as auxiliaries and has formed an experimental Mechanized Force which will operate as a unit. When more is known about its possibilities and limitations the organization will form the basis for a permanent mechanized force which will make up a division of the Army. . . . During the period Jan 1-June 30 the new force . . . will participate in ten field exercises and marches." On Jan 9, 1931 the press carried a description of a test of the Christie tank, four of which were soon to make their appearance at Eustis and later at Knox. Although we never adopted the Christie there is no doubt but that it contributed in great measure to technical and tactical thought both here and abroad. One only has to see the Russian T-34 to realize this.

But the independent development of mechanization was not to be. Even before we completed our program of exercises in tests planned for the first half of

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1931, before our consolidated report of operations dated 1 July 1931 was written containing detailed recommendations and tables for a Mechanized Brigade, the War Department had decided to abandon the Mechanized Force and turn back the problem to the basic arms and services. General MacArthur, now Chief of Staff, released a new policy dated 1 May 1931, which, with few changes, governed until 1940. Some extracts follow: "Few classes of equipment belong exclusively to one arm . . . when the tank had only the speed of the foot soldier, its use was confined generally to close support of the Infantry in attack. . . . Today, tanks possessing great strategic mobility are being developed, and it follows that certain types of these tanks may appear in organizations having missions far beyond the normal missions assigned to the Infantry. . . . It is not difficult to visualize a reserve of the future moving out in column from front to rear—Cavalry (mechanized), units of the Tank Corps, Infantry temporarily embussed, all elements being able to move at a uniform speed without noise. . . . The Cavalry will undergo such general reorganization and re-equipment as will enable it to best perform the missions enumerated. . . . The Infantry mission is to close with the enemy. . . . This makes Infantry the decisive Arm. . . . As one of the principal duties of the tank will be to support the Infantry it should be trained with it. . . . In war, tank organizations may be assigned to corps and army troops to be employed where opportunity offers. . . ."

Although the decision to break up the Mechanized Force had been made in May 1931, experimentation and training continued actively all summer and many basic tactical principles were tested which later formed the basis of tactical doctrine in mechanized cavalry and finally in the Armored Force.

On Oct 31, 1931, the Mechanized Force ceased to exist and the burden for development of highly mobile armored ground troops fell upon the De-

tachment for Mechanized Cavalry Regiment consisting of: Hq & Hq Det and Arm'd Car Tr with Co C, 13th Engrs, 19th Ord Co and 28th MRS attached. This force marched from Fort Eustis to Camp (now Fort) Knox Nov 2-5, 1931, and there established the beginnings of the present Armored Center.

The "step backward" from the auspicious beginning of a year earlier had some compensations. Although Cavalry, as an Arm, was too poor to provide the funds, and too many experienced and well qualified horsemen resented the change, the determination of the small group from Eustis together with the support of a few War Department enthusiasts gradually attracted increasing support. In mid-Dec 1932 the Detachment marched with empty trucks from Fort Knox to Marfa, Texas, and on Jan 2, 1933 began the return march with the now horseless 1st Cavalry riding the trucks. The 1st Cavalry celebrated its 100th birthday as the first cavalry regiment to be mechanized.

On April 5, 1935 the War Department brought up to date its mechanization policy in a memorandum which included the following: "The modern program for the development of mechanization was inaugurated in 1931. . . . [This was the policy which abandoned the idea of a Mechanized Force and charged development to the several Arms and Services.] During the first phase of the modern program . . . no supporting units were organized with the 1st Cavalry (Mecz) as it was desired not to complicate the problem. The primary aim during this phase was to organize and develop a mechanized cavalry regiment proficient in the tactics and technique of its arm. The standard . . . reached . . . has been very satisfactory. As a result . . . the mechanized field artillery unit was recently organized. . . . The responsibilities of the commander of this Mechanized Force and of the Chiefs of the interested Arms and Services will be the same as now obtaining in the 1st Cavalry Division.

The 1935 report of the Chief of Staff contains the following: "In our Army each of the combat arms has been charged with the responsibility of so adapting the characteristics of combat vehicles to its own uses as to produce maximum efficiency in the performance of its own particular missions. . . . The definite objectives in mechanization toward which the Army is now working involve a specific number of infantry, cavalry and artillery units. These objectives do not indicate the ultimate possibilities in the use of combat vehicles and certainly they should not, in the slightest degree, limit the development of theory and doctrine pertaining to this class of weapon. . . ."

Fine words, but results were dependent upon funds and personnel which none of the older Arms were willing to furnish at the expense of cutting down the orthodox establishment. Progress was agonizingly slow. In the meantime European powers had their peculiar problems. The British, with a big head start after World War I, began on an extravagant scale with large tank units. The greatest weakness of their organization initially was a failure to appreciate that battles could not be won by combat vehicles alone. By 1935 British thought was changing to closer coordination between tanks and the older Arms. France, faced with a paucity of funds, depended more on motorization and light mechanization. In contrast to the groping and fumbling of the British, French and ourselves, the Germans at this time (early 1936) announced the appointment of a General of the Armored Forces.

Our thought and our experiments had not lagged since the birth of the Mechanized Force but our implementation was divided and weak during the "ten lean years" until June 1940 when the Armored Force was born. Finally those basic elements which had first been brought together at Fort Eustis, then dissipated, were again assembled as a combat Arm. It took World War II and another ten years (until June 1950) before Armor became officially an Arm of the service although it had been so in fact since the creation of the Armored Force.

Returning to your statement on page 5 of the Jan-Feb issue, I believe it would be more accurate to state: "The transition from horse to mechanized cavalry actually began in 1931 when the task of developing mechanization was charged to the several Arms and Services upon the breakup of the Mechanized Force at Fort Eustis, Va."

Perusal of my old records has been very interesting and I uncovered a great deal that I had forgotten concerning the trials and tribulations during the period 1931-40 when I was a part of the transition team. I may be able to help answer a number of questions concerning that period as well as later if they arise.

R. W. GROW  
Maj. Gen. (Ret.)

Washington, D. C.

## ARMOR

REPORT ON THE 65TH ANNUAL  
U. S. ARMOR ASSOCIATION MEETING



A NEW ARMORED PERSONNEL CARRIER  
The M59 Armored Personnel Carrier is a new development of the M54 Armored Personnel Carrier.  
Photo: Army, 1954

## THE COVER

The development of the M59 Armored Personnel Carrier is a tribute to The Armored Center, Ft. Knox, and its Commanding General, Major General John H. Collier. Searching for a cheaper vehicle, and at the same time profiting by the experience gained in the development and testing of the M75, General Collier led the way to give the Armored Infantryman a versatile vehicle.



## The Armor-Engineer Team

Dear Sir:

I have read with interest the article in the November-December issue of ARMOR written by General Robinett, "Armor's Engineer Problem." General Robinett's article should stimulate and provoke constructive thought among army engineers. What have we accomplished and what are we doing to keep abreast of modern war developments? Since General Robinett's article deals only with the challenge of Armor to engineer support, I should like to confine my ideas in this letter to only that part of the total engineer problem.

Perhaps it may be appropriate for someone to write an article entitled "The Engineers' Armor Problem." I am endeavoring to have a suitable article written which I will submit for your consideration. Staying abreast of the heavier, wider, longer and faster armored vehicles developed since World War II has been and will probably continue to be a guiding principle in engineer research, development, supply, training and organization. As General Robinett points out, the rather narrow limits in size and weight to which our ordnance development used to be restricted were set in large measure by the capacity of our engineers to build roads, bridges and hardstands. That was in the early post World War I era. Since that time, better and more efficient heavy trucks and construction equipment, as well as the capacity for large-scale logistic support, have enabled us to broaden those limits considerably. Our road-building equipment can keep up with anything as long as there are fuel and maintenance support behind it. The new and heavier class 60 floating bridge, developed and standardized since World War II, is in production. Modern versions of an engineer armored vehicle and a short-span assault bridge are well along in development. Our newest mine detectors, although not foolproof, give improved aid to the probing sapper in the increasingly difficult problem of mine detection.

In the field of training doctrine, our traditionally mobile and offensive-minded army in the past few years has given a new examination to lesser known military tactics and techniques which contribute indirectly to a successful campaign. In order when necessary to regroup, to resupply, or to recoup, and from thence to carry onward with the successful offensive, we have to know how to organize the defensive ground, how to build field fortifications, how to camouflage and how to lay mine fields and other obstacles. These techniques assume tremendous importance when they can be used to supplement precious manpower or to provide strong shoulders for irrepressible armor. They must be taught and understood among all branches of our army, and in particular among our engineers. At the same time, the offense, as General Robinett states, must continue to be regarded as

a potent weapon in itself, nourished by initiative, decisive in its outcome, and foremost in the minds of our aggressive and progressive military men. In courses of instruction at The Engineer School, as well as in recently promulgated training literature prepared by the Engineers, we have striven to reinstate thinking in these fields to the proper balance.

It has been refreshing to read such evidence as General Robinett's article that thoughtful officers of all branches are concerned vitally with the part on the team which our army engineers must play. It is of great importance to us as engineers to hear and use their ideas in our work.

G. J. ZIMMERMAN  
Colonel, CE  
Chief, Technical Liaison Division  
Office of the Chief of Engineers

Washington, D. C.

## An Adjunct to Training

Dear Sir:

I have not received the ARMOR issue for Jan-Feb 1954.

The delay may have been caused by the change of address sent to you about a month ago. . . .

Your "Notes on the Training of an Armored Division" have been very helpful in developing a specific training program which covers the basic principles of fire and maneuver. They have been used successfully and have played a great part in the further development of interest shown by all the men.

Here's hoping for your continued success and a bigger and better magazine.

JORGE A. DIAZ  
1st Lt., Inf.

Laredo, Texas

## Reminiscence

Dear Sir:

As a reader of ARMOR Magazine for a period of several years and as a former member of the Mechanized Cavalry and the Armored Force, the many articles by distinguished writers appearing in the magazine are very instructive to me.

I recently received a copy of the book "Forge The Thunderbolt" and its contents brought back many fond memories to me as I was at Fort Knox that dreary day in January 1933 when the 1st Cavalry arrived from Fort Marfa, Texas. At that time Lt. Col. Adna R. Chaffee (later General) was Executive Officer of the Post and Colonel Daniel Van Voorhis was in command of the unit with Brigadier General Julian R. Lindsey as Post Commander.

I remember well when Lt. Gen. Willis Crittenger was a Major in the 1st Mechanized Cavalry, as was General Robert W. Grow. Other names like Baird, Scott, Hasbrouck, etc., are plain in my memory. The former Chief of Cavalry (Maj. Gen. Guy V. Henry) signed my Sergeant's warrant in March 1933 and later on Captain Isaac D. White (now Lt. Gen. White) administered to me the oath of office as a 2d Lt.

The first brick buildings at Fort Knox were those now on 7th Avenue and Old Ironsides and were completed in November 1934 as was the Armored Center Headquarters. Later on the 13th Cavalry came to Fort Knox in 1936 under Colonel Charles L. Scott and with the 68th Field Artillery Battalion formed the 7th Cavalry Brigade (Mecz) and that can be truly said to be the forerunner of the mighty Armored Divisions of World War II. Although I am at present in an Infantry organization I hope to return to Fort Knox and shall always look forward to reading ARMOR.

CORPORAL GEORGE M. CHANCELLOR  
Hq Co, 2d Bn, 8th Inf Regt

APO 39

## A PREVIEW OF OUR NEXT ISSUE

Read in the  
May-June Number  
of ARMOR . . .

The Axis Offensive in Central  
Tunisia, February 1943,  
by Brig. Gen. P. M. Robinett

Combat Firing Drills  
(Part IV, Notes on Armored  
Division Training)  
by Brig. Gen. H. H. Howze

Class of 1954  
Armor Graduates of the  
U. S. Military Academy

Outstanding Senior Armor  
ROTC Cadets for 1954



## Confirming Our Views

To many newspapermen who "pound" the Pentagon "beat" it was just a routine press release.

To us who pick up the press distribution for ARMOR, the headline hit us in the face like the neon lights flashing in New York's famous Times Square: "ARMORED DIVISION TO BE ACTIVATED BY ARMY AT FORT HOOD, TEXAS."

Many speculative statements had been published recently but here is the official announcement, quoted in its entirety:

"The Department of the Army announced [recently] that an armored division will be activated at Fort Hood, Texas, on June 15.

"As yet, no numerical designation has been given to the division, which will be maintained slightly below the normal Armored division strength of 14,756.

"Division cadre, composed of officers and enlisted men obtained from Army units and installations throughout the United States, will report to Fort Hood prior to the date of activation.

"During the month following activation, the cadre will train and prepare for receipt of equipment and filler personnel. The fillers will be received between July 15 and October 1, at the rate of about 4,000 per month.

"The new division's commander and his principal assistants will be announced later.

"At the same time, the Army announced that Headquarters, III Corps with its present commander, Major General Hobart R. Gay, and a minimum of key personnel, will move permanently from Fort MacArthur, California, to Fort Hood about April 15. Five days later Headquarters and Headquarters Battery of III Corps Artillery will be activated at the new station.

"It is expected that III Corps headquarters will be operationally ready by June 1, and will supervise activation of the new Armored Division.

"Among units already stationed at Fort Hood is the 1st Armored Division."

To proponents of the concept of mobile warfare, this should be welcome news.

Since the close of World War II, many Armor greats have been advocating employment of Armor in larger formations, increasing the Armored division to Infantry division ratio, and emphasizing the proved theory that you get more firepower with less manpower. Despite reported cutbacks in the Army, the fact that we are to increase our proportion of Armored divisions is indeed encouraging and reassuring.

In addition, the moving of a Corps Headquarters to Fort Hood should give realistically ample opportunity for the development of Armor training, tactics, and logistics at a Corps level which is a higher level than the U. S. Army has ever enjoyed. Although four Armored Corps Headquarters were formed in the early days of World War II, they never saw action as such. Three of these headquarters were converted to standard type corps before they left the United States. The other headquarters (I Corps) served as the Western Task Force Headquarters under General Patton in the invasion of North Africa. This Headquarters later formed a nucleus of the Seventh Army Headquarters.

III Corps Headquarters, commanded by General Gay, who served as General Patton's Chief-of-Staff throughout the entire war, except for a short period when he was Deputy Chief-of-Staff, is confronted with a huge task. For, in this economy-minded period, this corps and its two armored divisions must develop new concepts, new tactical doctrine, and new logistical problems on a larger scale than ever before.

As our Chief of Staff, General Matthew B. Ridgway, stated in a recent message: "Tanks and armored vehicles can be expected to play a highly important role on any future battlefield because they are well suited to warfare characterized by quick concentration and dispersion, high mobility, and firepower. . . ."

We subscribe to this statement and also subscribe to the additional Armor organizations—confirming our beliefs over the past years.





U.S. Army

**GUARDED**

# THE M59

by

**CAPTAIN GLENWOOD W. FLINT**

and

**CAPTAIN LEWIS B. TIXIER**

**S**INCE the earliest days of warfare, commanders have searched for a means to rapidly seize an objective with a minimum of casualties. The Assyrians, infamous conquerors of the period before Christ, used large protected chariots to transport their archers. Then in the first century B.C., Ulstermen invaded Connaught with "three strong, stout, battleproof towers, on wheels." Each of these towers was

propelled by 30 Danish stallions. In 1456 the Scots invented a wooden war cart which encased its crew and protected them from the weapons of the day. Leonardo da Vinci, Count Richelieu, Voltaire, and James Cowan all tried their hand at fashioning vehicles to protect the fighting man and to place him on the objective fresh and ready to close with the enemy. Most of these efforts were destined to fail because the motive power of the time was inadequate. Not until the advent of the internal combustion engine did the armored fighting vehicle become a practical weapon.

Although World War I saw the tank emerge victorious on the battle-

field, the infantry was destined to remain afoot until the Germans organized the Panzergrenadiers, and mounted the rifle elements in the panzerwagen or half-track. The German blitzkrieg in Poland stimulated U.S. development of an armored infantry carrier. The final result, and the vehicle with which we finished World War II, was the M3 series half-track.

Although the half-track did yeoman service and afforded protection from small arms ground fire, often it did not enable its occupants to accompany tanks closely on the battlefield; consequently Armor was often denied its infantry element at critical moments.

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**CAPTAIN GLENWOOD W. FLINT**, a graduate of the Military Academy, is presently assigned to AFF Board Number 2. He was the Project Test Officer for the M59. **CAPTAIN LEWIS B. TIXIER** is also stationed at Fort Knox.



Following World War II, Armor officers advocated a full-track, completely armored infantry carrier that could accompany tanks, even when subjected to overhead artillery bursts. The first vehicle of this type was the M44, built on a medium-gun tank chassis carrying a total of 27 men including crew. Extensive tests revealed that, in addition to the usual development deficiencies, the M44 was too large and cumbersome. Tactical flexibility of the infantry was lost, and undue casualties were invited, due to the fact that a platoon was carried in this vehicle. In short, the M44 was too big a basket carrying too many eggs.

The next try produced the T18, now standardized as the M75, Armored Infantry Carrier. Built on a light-tank chassis and utilizing a maximum number of parts common to the M41 Light Tank, the M75 has proved to be an excellent squad carrier. Reports from Korea attest its versatility and relative immunity to enemy fire.

Searching for a cheaper armored infantry vehicle and capitalizing on the experience gained in the development, production and test of the M75, the Army went to work on a new version, the T59. To aid in the development and production of the T59, Army Field Forces assigned Lieutenant Colonel John S. Sandiland, an experienced Armored Infantry officer, to work directly with the manufacturer. Thus the user was in a position to offer advice, backed by experience, directly to the civilian designers and manufacturer. Now the T59 has become standard, and is designated the M59.

Essentially the M59 is an armed, watertight, self-propelled, armored box. It utilizes the suspension components of the light tank family. A power operated ramp covers the entire rear of the vehicle. Emergency exit on failure of the ramp is provided by an escape door. The M59 normally carries an armored infantry squad plus driver. Because of the clean interior, the M59 is well suited for other missions which will be discussed later. A measure of economy is achieved through the use of two standard truck engines and transmissions mounted in the sponsons. In an emergency the vehicle can be operated on one en-

gine. The commander's cupola, driver's hatch, and two large hatches over the squad compartment have been built into the top of the vehicle. The M59 mounts a commander-operated dual purpose machine gun. An anti-surge or fording vane is located on the front of the vehicle and can be operated by either the vehicle commander or driver.

The performance of the M59 to date has been extremely gratifying. In almost every instance it has equalled or bettered the performance of vehicles of equal weight and horsepower. Low engine and track noise makes it especially adaptable to its role in reconnaissance units. The nature of the ramp and squad compartment makes rapid entry and exit a matter of two or three seconds. No other armored vehicle can boast of the crew comforts that the M59 affords. Vibration and noise are less existent. Due to new engineering design, very little dust, compared to similar type vehicles, can enter the squad compartment when the vehicle is buttoned up.

Something unique for full-track armored vehicles was built into the M59 at no extra cost. That something is the ability of the M59 to negotiate,

under its own power and without any special preparation or equipment, calm inland waterways. Picture an armored vehicle weighing several tons nosing down into rivers and lakes, practically disappearing under the water, swimming the water obstacle at creditable speed, and emerging on the far side to accomplish its mission. No doubt the above raises a question in your mind. As has been stated, nothing has been sacrificed to obtain this tactically desirable characteristic. The vehicle remains a mobile, rugged, reliable, easy to maintain and service, armored infantry carrier.

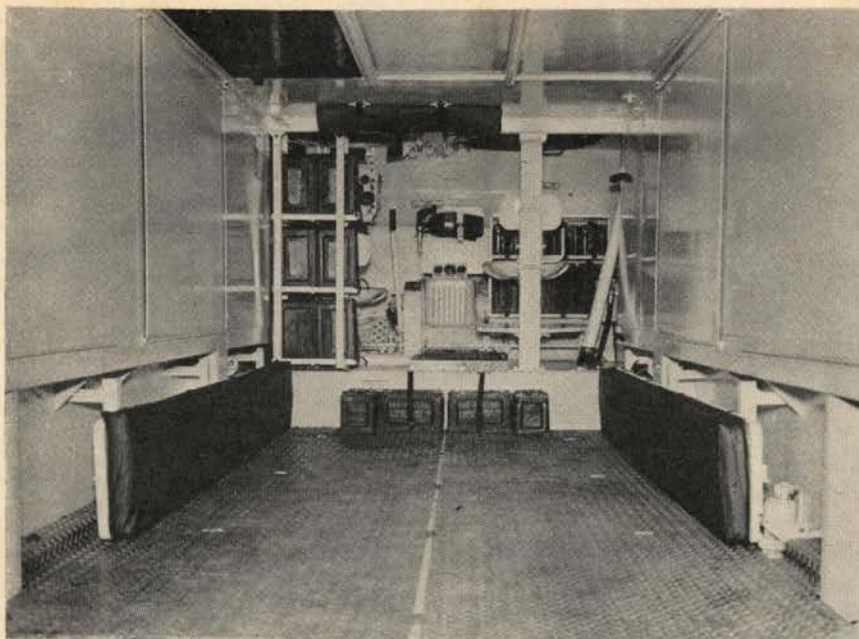
One should not overlook the ease of maintenance features that were purposely built into the M59. To obtain vehicle balance and economy of components, it was decided to use two standard engines and transmissions that are now in the supply line. The engines and transmissions are easily accessible, and the squad compartment is of such size that mechanics may work on either or both engines simultaneously. Mounting one engine in each sponson makes for easy removal and replacement. Because proven standard light tank suspension components were used on the M59, no unusual maintenance problems



A 1456 Scottish version of an APC protects its crew from weapons of the day.

U.S. Army





U.S. Army

The unobstructed interior of the M59 APC makes it adaptable for many uses.

can be expected in that area.

Perhaps the question of driver training has occurred to you. If the M59 is to go swimming, as well as operate on land, do not the driver and the vehicle commander need special training? To prepare for a river crossing the driver or vehicle commander should be trained to estimate the rate of flow of streams and gradability of near and far banks. The problem of controlling the M59 in the water is no different from control

on land—throttle, transmission and steering lever action are identical. Training the driver and vehicle commander to operate the M59 on land is the same as for other type full-track armored vehicles.

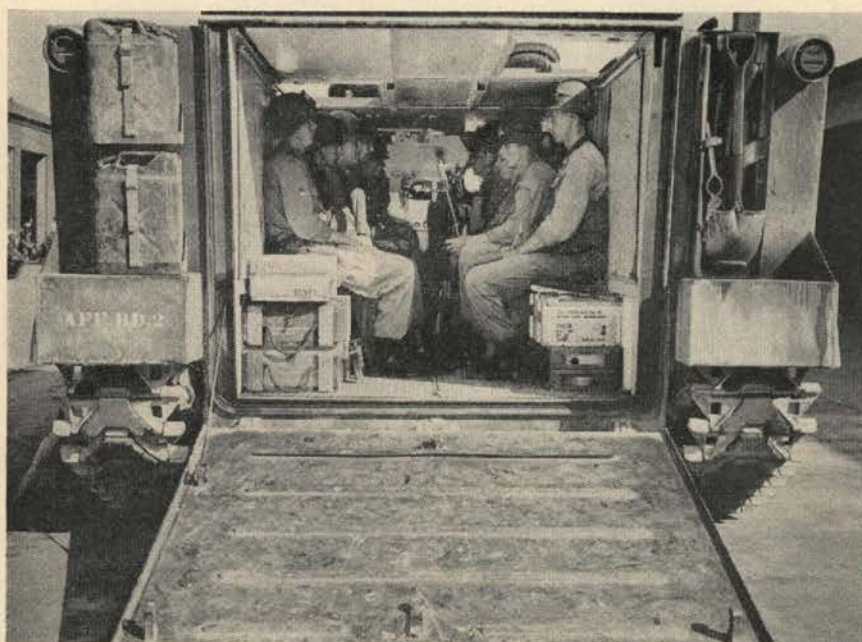
It is readily apparent that the M59 is a versatile vehicle that can be adapted for a number of military uses. As has already been proven in combat in Korea, the M75 can be used not only as an Armored Infantry Carrier but also for command, cargo and

evacuation missions. These missions the M59 can likewise fulfill. Due to design of the squad compartment and the rear ramp, the M59 offers many additional capabilities. For example, necessary webbing to secure six litters with patients will be standard equipment on all M59's. This webbing will be neatly stowed in the compartment until needed. Inasmuch as all litters are suspended above the floor of the vehicle, vibration and road shock are cushioned.

Still another mission that the M59 can successfully accomplish is that of a mobile Armored Artillery Fire Direction Center. Sufficient unobstructed working space is available for maps, plotting boards and personnel. In addition, the blackout capability of the M59 is unexcelled. Just as the M59 can be used as the focal point of artillery fire direction, it can also serve admirably as a mobile command post for other combat arms. The advantage of such a carrier with its payload capacity for carrying ammunition cannot be overemphasized. Studies and tests have now been completed on an M59 mortar carrier capable of firing without dismounting the mortar. Still other uses of the M59 are as an armored utility vehicle for the maintenance sections of Armored units, an armored signal repair vehicle, and an armored carrier for gasoline.

What effect will the M59 have on our tactical concept of the employment of Armor? It is yet too early to fully realize the end result; however, certain evident advantages have accrued from small scale tests. The ability of this vehicle to ford or swim inland water obstacles has been discussed. The application of that ability greatly enhances the mobility and speed of an Armored command. The cross-country agility of the M59 coupled with its limited amphibious characteristic permit immediate establishment of many bridgeheads. This vehicle also provides the means of rapidly reinforcing the bridgehead. No longer will it be necessary for the Armored Infantry to brave the enemy's intense fire, protected only by an armored vest, as they paddle assault boats across a river.

Before the advent of the M59, Armor could not fully exploit its characteristics of armor protected firepower, mobility, shock action, and speed. The old half-tracks were unable to



U.S. Army

The Armored Infantry Rifle Squad in the M59 Armored Personnel Carrier.



accompany tanks under artillery fire. With the M59 type vehicle the Armored Infantry, maintenance and supply crews can accompany the tanks on Armor's most decisive missions.

What effect will atomic warfare have on such vehicles as the M59? Perhaps it would be better to reverse the last sentence and ask what effect will the M59 have on atomic warfare? Such a question can best be answered with a hypothetical example.

Task Force Able, part of a larger armored force, consists of a Medium Tank Battalion reinforced with two companies of Armored Infantry mounted on M59's. The remainder of the armored force is in reserve several miles behind the line of contact, but alerted to attack to exploit an atomic weapon that is to be placed on the enemy position at H hour. Capitalizing on the protection and mobility inherent in Armor, the commander plans to start his movement from the assembly area to arrive at the minimum safe distance from ground zero at H hour. He plans to take full advantage of the shock generated by the atomic explosion before the hos-

tile forces on the fringe of the damage area can recover. Detonation of atomic devices just ahead of aggressive Armor formations will permit fantastic advances.

Just as the M59 has improved Armor's offensive capability in atomic warfare, so has it improved Armor's chances for survival under atomic attack. An armored infantry company or battalion with its built-in mobility and armor protection can disperse over extended areas, thus offering small and unprofitable targets. By the same reasoning, this M59 equipped Armored Infantry can from its dispersed formations quickly concentrate in time and/or space to meet an enemy attack.

Now consider the role of the M59 on the opposite side of the fence—defensive operations—specifically, retrograde movements. Heretofore, we have advocated leaving our completely armored vehicles in position while personnel and vehicles with less protection move to the rear. Then, in order to extricate the tanks, time fire was placed on the position. Such tactics, of necessity, separated the tanks

from the infantry. With the M59 type vehicle, infantry can remain with the tanks until the position is evacuated, maintaining the tank-infantry team throughout.

Has the M59 enhanced Armor's conduct of the mobile defense? Definitely yes, because Armor's conduct of a mobile defense is offensive in nature. Its defense which is organized in lightly held strong points backed up by a large Armor-heavy reserve capable of counter-attacking rapidly anywhere in the zone, makes the M59 ideally suited for this role. If strong points must be shifted or reinforced, the M59 supported by tanks and artillery can redeploy the infantry with a minimum of casualties.

Doubtless there are many other advantages inherent in a vehicle such as the M59. The next few years will reveal many other uses. Presently the M59 satisfies the majority of the requirements so necessary to help accomplish Armor's mission. The M59 is a relatively inexpensive Armor vehicle—rugged—simple—reliable—easy to maintain—mobile—and most important, ready now for the atomic age.



U.S. Army

M59's swimming Ohio River during service testing prove their versatility. A bridgehead can be reinforced immediately.

**ARMOR—March-April, 1954**





Captured German Photo

## CARDED MASS EMPLOYMENT OF ARMOR

*This well documented story was first written in December 1952 but was not available for publication at that time. Despite the fact that we have already accomplished some of the conclusions arrived at by the author we still have a long way to go. Worthy of note is the conclusive recommendation that we have a greater proportion of Armored Divisions within the Field Army, but there is actually a reduction in the total number of tanks.*

by COLONEL WM. DARIEN DUNCAN

**O**NCE again, as after World War I, there is a growing impression among many United States military men of all ranks and among the American public that the day of the tank is over. This impression is largely a result of two conditions. First, great publicity has been given our recoilless weapons as the ultimate in tank killers

and secondly, the limited employment of armor in Korea.

As a warning it should be pointed out that during World War II the Germans developed and were using two types of recoilless anti-tank weapons.<sup>1</sup>

"Although there are many areas in the World where terrain will not permit the employment of armor in large quantities, nevertheless the critical areas of the World are located where modern methods of warfare can be employed. Armor will play an even more decisive part in any future war than it did in World War II."<sup>2</sup>

"Since 1945, despite the large scale

demobilization of the infantry, armored formations have been increased, absolutely as well as relatively" in the Soviet Army. "From a war-time ratio of roughly ten infantry divisions to one armored division (tank or mechanized) the ratio has fallen to almost three or two to one."<sup>3</sup> These armored divisions have been organized into armored armies.

The history of armor has been a history of stunning victories. These victories have been achieved in a minimum of time, with a minimum of killed and wounded, and with a minimum of destruction to the countryside. They have resulted in a com-

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COLONEL WM. DARIEN DUNCAN served in Europe during World War II. He commanded the 743d Tank Battalion, 30th Infantry Division. Since the War he returned to Europe and served in EUCOM headquarters. He is presently assigned to the Inspector General, Department of the Army.



plete breakdown in the enemy's willingness to resist. (Figure 1.)

In World War I the mass tank attacks at Cambrai and Amiens broke the stalemate of trench warfare. The Germans claimed that the massive tank attacks of November 1917 and of August and October 1918 changed the course of the war.<sup>4</sup>

In World War II the Panzer forces were instrumental in the German victories in Poland, in the West, in the Balkans, and in Russia. It was the United States armor that led the exploitation of the breakthrough made by the infantry and their supporting tanks at St. Lo in July 1944. It was United States armor that, penetrating the Ardennes to the Rhine, north of the Moselle, swung south and encircled the German Palatinate and the Saar. It was the German panzer armies with their panzer corps and divisions that blew open the American lines to create the "Bulge" in December 1944. These were actions where the greatest tactical gains were made in the shortest time and with the least casualties to the attacking troops.

As a result of these lessons the Russians are increasing the proportion of

their tank and mechanized divisions and their armored armies as fast as the equipment becomes available. The British are increasing the proportion of armored divisions to infantry as a result of their experiences in World War II. Yet, in spite of the lessons of World War II which the Russians and the British appear to have learned so well, certain elements in the American Army are questioning the need of the armored division in the American Army. In a future war will we bury the flesh of American Youth in the mud of the battlefield or will we bury the steel of American tanks?

The problem then is to show how best armor can be utilized in any major war so as to bring an early victory and a great savings in the lives of the heroic American infantrymen. God bless them!

The author has studied unclassified materials, of which there is a wealth, and as a result presents a proposed doctrine for mass employment of armor for adoption by the United States Army. The doctrine is based upon the conclusions and recommendations reached by the author in his study of the facts. The conclusions and recom-

mendations reached by the author are not necessarily the conclusions and recommendations that might be arrived at by another studying the same facts.

### A BRIEF HISTORY OF THE EMPLOYMENT OF ARMOR TO 1939

In 1916 the French produced and used light tanks in small numbers against the Germans, and the British produced and employed a few heavy tanks. The results proved promising and both countries began to produce tanks in quantity. On September 14, 1917, General Pershing requested the War Department to procure for shipment to France in the summer of 1918 the following armored vehicles:

- 350 Mark VI heavy British tanks
- 20 similar tanks for signal purposes
- 40 similar tanks for supply of gasoline and oil
- 140 tanks arranged to carry 25 soldiers or 5 tons
- 50 similar tanks to mount a field gun
- 1,030 French Renault light fighting tanks

**FIGURE 1—The Comparison of Typical American Infantry Divisions With Typical American Armored Divisions In the European Theater In World War II**

	Days in Combat in ETO	Killed	Wounded	Misc	Captured	Total Battle	Non Battle	Casualties		Enemy Prisoners of War Captured
								Total	% of T/O&E	
1st Inf Div	292	1,973	11,448	951	631	15,003	14,002	29,005	205.9	188,382
2d Inf Div	303	2,999	10,924	109	1,034	15,066	10,818	25,884	183.7	51,055
4th Inf Div	299	4,488	16,985	860	121	22,454	13,091	35,545	252.3	75,377
29th Inf Div	242	3,720	15,403	462	526	20,111	8,665	28,776	204.2	38,912
30th Inf Div	282	3,435	12,960	753	543	17,691	8,347	26,038	184.8	50,146
2d Armd Div	223	1,102	5,331	253	65	6,751	7,116	13,867	95.9	76,963
3d Armd Div	231	2,540	7,331	95	139	10,105	6,017	16,122	111.5	76,720
4th Armd Div	230	1,238	4,246	503	1	5,988	4,508	10,496	98.4	90,364
5th Armd Div	161	547	2,768	177	62	3,544	3,592	7,146	67	42,756
6th Armd Div	226	1,169	4,198	152	7	5,526	7,290	12,816	120	61,864
7th Armd Div	172	887	4,147	1,050	39	6,150	4,352	10,502	98.4	113,041

T/O&E Inf Div 14,089; 2d & 3d Armd Divs 14,454; other Armd Divs 10,670.

(Extracted from D/A After Action Reports ETO)



130 French Renault tanks for supply

40 French Renault tanks for signal purposes

300 six-ton autos with trailers to transport the Renault tank.<sup>5</sup>

This order indicated that General Pershing had accepted the concept of mass employment of armor.

On November 20, 1917, the British, employing 473 tanks in mass for the first time, penetrated the German line at Cambrai, France, for 10,000 yards on a 13,000-yard front. This penetration resulted in the capture of 8,000 prisoners and 100 guns with a minimum loss in the British infantry which were following the tanks. It would have taken several weeks of bombardment, many thousands of tons of ammunition, and many infantry lives to do what these 473 tanks did on that one day.<sup>6</sup>

As a result, planning for future use of the tank increased. On December 6, 1917 the United States and Great Britain agreed to produce jointly 1,500 Mark-VIII heavy tanks by October 1918. On December 23, 1917 Major General S. D. Rockenbach was appointed Chief of Tank Corps, American Expeditionary Force.<sup>7</sup>

In the St. Mihiel and Argonne offensive the First United States Army was supported by the 1st and 3d US Tank Brigades with a total of 144 borrowed French Renault tanks, and four French tank battalions with 300 tanks. Instead of using the British method of mass employment of armor that had proved so successful, the First United States Army assigned tanks by companies and platoons to the infantry regiments and battalions. The tanks were not nearly as effective when dispersed for this offensive as they had been when the same number were employed in mass in earlier operations.<sup>8</sup>

In October 1918, the British again utilized tanks in mass at Cambrai and at St. Quentin with greater success than the previous year at Cambrai. These tank attacks, followed by supporting infantry, broke the stalemate of trench warfare and resulted in the armistice of November 11, 1918.<sup>9</sup>

In 1918 General Fuller, then Colonel and Chief of Staff of the British Tank Corps, conceived the idea of deep tactical penetrations by fleets of these mobile tanks. This was embodied in his "Plan 1919," an operation to be

executed by some 10,000 tanks. The war ended before the plan could be put into effect by Marshal Foch. This plan of mass employment of armor remained the doctrine of the British Tank Corps.<sup>10</sup>

In the post World War I period the French maintained the greatest army and the largest tank force in the world. The French theory of tank employment—the allotment of tank battalions to the infantry divisions for sub-allotment to the infantry regiment and battalion—was adopted by Italy, Japan, Poland, Russia, and the United States. Only the British and the Germans failed to accept this doctrine.

As a result of the US acceptance of this doctrine, the wartime United States Tank Corps was abolished by an Act of Congress in 1920.

During this same period the British infantry attempted to assimilate the British Royal Tank Corps. The Tank Corps, championed by such men as Winston Churchill, Liddell Hart, General Fuller, and General Martel, was able to remain a separate entity but was reduced to four tank battalions. The continued existence of the British Royal Tank Corps provided an organization for the assignment of the officers who believed in the future of the tank. These officers were aggressive, imaginative, and far-sighted, but were limited by funds and by the lack of support by the British infantry and cavalry.

During the 'twenties and 'thirties the British Royal Tank Corps sponsored and carried out experiments in tank employment in mass. These trials verified the wartime experiences of mass employment of armor, and again demonstrated the many potentialities of a fully mechanized force. Military men from all major countries of the world, including Germany, observed these trials. The trials resulted in an instantaneous new interest in armor in all countries.

In the United States the first of several similar trials was carried out at Fort Meade, Maryland, in 1928. This was followed by one at Fort Eustis in 1931. From 1933 to 1940 General Chaffee carried on additional trials at Fort Knox, Kentucky. However, these trials resulted in a division of the tanks, the light tanks to the cavalry for utilization as mechanized cavalry, and the heavy tanks to the

infantry as an infantry support weapon.<sup>11</sup>

During this same period the Germans, remembering the method of tank employment most effective against their forces in World War I, accepted the doctrine of mass employment of tanks. The Germans realized the effect of antitank fire against tanks moving slowly in small numbers with the infantry, and condemned the tendency to subordinate tanks to the infantry. Inspired by General Heinz Guderian, the Germans organized the first panzer division in October 1935, thereby combining the tanks, infantry, and artillery into a single organization. Only the British, among all the nations, reacted immediately to this new creation. They established their first British Mobile Division, later redesignated Armoured Division, in 1937.<sup>12</sup>

By June 1939, the Germans had developed several armored divisions and armored corps. The Italians had approximately two light armored divisions; the British one; and the French were hurriedly organizing their first. Only the United States and Russia had not accepted the concept envisaged by the Germans in the employment of the armored division and armored corps, and consequently their tanks were still divided between the cavalry and the infantry and were organized into brigades, regiments, or battalions.

## THE GERMAN DOCTRINE ON ARMOR EMPLOYMENT

General Heinz Guderian, the man most responsible for the German doctrine on employment of armor, briefly and effectively describes the German doctrine by his expression "Klotzen, nicht Kleckern" (Boot them, don't splatter them). In 1936 Guderian wrote "The attack must . . . , penetrate deep into enemy lines, to prevent reserves from intervening, and to extend the tactical success into a strategical victory."

We "believe that a successful, rapid tank attack, in sufficient *width* and *depth* to penetrate all the way through the opposing defense system, can achieve more towards ensuring victory than the system of limited advances" as practiced by the infantry.<sup>13</sup>

The question that faced the German High Command in 1936 was whether the massing of all the tank



strength in one striking force was a sound basic idea, or whether the allotting of tanks to the infantry to enable it to attack with tank support, was not worthy of equally serious consideration. The German High Command adopted its doctrine on the employment of armor based on the oft-quoted example "Red and Blue are at war . . . Red has split its tanks among the infantry divisions. Blue has massed them in panzer divisions . . ." Which method of employment has the most offensive power at the critical spot at a given time, which is the most flexible, and which can employ the greatest mass in a counter-attack?<sup>14</sup>

In 1936 the French, Polish, Russian and American armies accepted the doctrine of the above Red force. The Germans accepted the doctrine of the Blue force. Thus the Germans would be able to use all the offensive power of their armor in a strong surprise blow at a decisive point in order to drive a wedge so deep and so wide that they need not worry about their flanks, and the armor could immediately exploit the success gained without bothering to wait for the infantry.<sup>15</sup>

Between 1936 and 1939 the exponents of mass employment of armor in the German army fought a bitter struggle with the infantry and cavalry on the question of which of the two doctrines should be accepted and whether a separate armored branch of the service should be established.<sup>16</sup> Hitler sided with the doctrine of maximum mechanization, mass employment of armor, and for the need of armored divisions, corps, groups, and armies.

### **The Polish Campaign**

The wisdom of accepting the doctrine of mass employment of armor was first evidenced during the Polish campaign in 1939. The XIX Panzer Corps in the Fourth Army, and the XVI and XV Panzer Corps in the Tenth Army spearheaded the invasion for their respective armies. In addition the I Corps in East Prussia, and the XXVII Corps in Slovakia each had one armored division.<sup>17</sup>

The attack of the XIX Panzer Corps was led by the 3d Panzer Division, which broke through the Polish defenses and advanced rapidly to the Vistula River to seal off the southern

flank of the Polish Corridor. The XIX Corps then moved rapidly to the southeast corner of East Prussia where it attacked south and captured Brest-Litovsk, thereby preventing the Polish forces from establishing a defense along the line of the Bug River.

The objective of the XV and XVI Panzer Corps was to cross the Vistula south of Warsaw and to prevent the Polish army from establishing a defensive line along the Vistula. However, the advance of the two panzer corps was so rapid that they succeeded in cutting off and destroying the Polish army west of the Vistula.

Likewise in the I and XXIII Corps, the armored division made a rapid breakthrough of the Polish positions and exploited success to the maximum. It was the deep rapid penetrations by the armored forces that disheartened the Polish Army and prevented it from establishing new defensive positions.

### **The Campaign in the West—1940**

In May 1940, the month Hitler had decided upon for the invasion of France and the Low Countries, the German army had a total of 2,800 armored vehicles; the combined Anglo-French-Low Country forces in the West had disposed along its front over 4,000 armored vehicles.<sup>18</sup> These allies had five armored divisions and three lightly mechanized divisions with 160 tanks each. These units had been hastily formed and had insufficient training. The armored and mechanized divisions were separated widely across the front. The remainder of the allied tanks were allocated to 34 separate tank battalions allotted to corps and armies for assignment to infantry divisions when and if needed. "From this it must be concluded that the highest French leadership either would not or could not grasp the significance of the tank in mobile warfare" and had not learned a lesson from the defeat of Poland.<sup>19</sup>

Initially the German High Command only wanted to use one or two armored divisions for their main effort through Luxembourg, but General Guderian maintained that such a force was too weak. He had therefore three panzer divisions and an infantry regiment for the combat elements of his armored corps.<sup>20</sup> Thus, on 10 May 1940, the greatest concen-

tration of tanks yet seen in war massed opposite the Luxembourg frontier. It was made up of three panzer corps, two abreast with panzer divisions, and the third in rear with motorized infantry divisions. These three corps made up an Armored Group. To the right of this armored group was a separate panzer corps. Further to the north two panzer divisions were to operate as a pair to exploit the bridgehead to be established at Maastricht. Thus, the mass of the German armor was to be employed on a narrow but deep front through Luxembourg.<sup>21</sup>

"When the Campaign in the West was launched, Guderian seized the bit in his teeth, and bolted with the reins—his unchecked gallop" at the rate of 100 miles per day on some days from the Luxembourg border to the sea and cut off the whole left wing of the allied armies. "The Belgians collapsed, the British barely escaped by sea, and a large part of the French Army" were captured.<sup>22</sup>

The German armored forces were then quickly switched south and east for a fresh stroke and swept rapidly across the Somme and the Aisne to the Swiss border and the Loire River, thereby cutting off the right wing of the French army and dispersing or capturing the remnants in the West.

As a result of the German campaign in the West there should have remained no doubts in the minds of the military leaders of the world as to the value of mass employment of armor. All had seen what results when an entire national army flouts the principle of mass while its opponent utilizes the principle to the maximum. The French carried their violation of the principle of concentration of combat power even down to the organization of subordinate units. They dissipated much of their tank strength in separate battalions, and of the eight allied armored type divisions originally available to the allies not more than two were ever employed on the same sector of the front.

### **The Campaigns in the Balkans and in Russia**

In early 1941 Hitler decided that it was necessary to secure Yugoslavia prior to his planned invasion of Russia. On 6 April, 1941 the German army, applying the doctrine of armored warfare it had learned in Poland and in the West, launched its



attack against Yugoslavia. The operation was successfully completed in nine days.<sup>23</sup>

Despite the very graphic lessons of the previous campaigns, the Supreme German High Command did not hold uniform views about the best employment of its armored forces in Russia. However, the doctrine of the panzer leaders won out and on 22 June 1941 four German panzer armies invaded Russia, followed as rapidly as possible by eight infantry armies. Prompt exploitation of their initial successes by the panzer armies prevented an effective defense of the Russian Dnieper Line, and made it possible to take Smolensk and Kiev in the initial onslaught. By 5 December 1941 the First Panzer Army had advanced over 725 miles; the Second Panzer Army had fought over 1500 miles; the Third Panzer Army had advanced over 550 miles; and the Fourth Panzer Army had battled over 675 miles.<sup>24</sup> This initial advance of the German army resulted in over 2,918,000 Russian prisoners of war, over 8,800 guns destroyed, and over 17,500 Russian tanks captured or destroyed.<sup>25</sup>

The total number of panzer divisions employed in the initial phases of the invasion of Russia was 19, and these increased to 25 by November 1941. Since each division consisted of 180 tanks the Germans employed a total of 4,500 tanks for the invasion.<sup>26</sup>

The mechanized strength of the Russian army was organized into independent tank brigades. Conservatives estimate that Russia, when invaded by Germany, had 55-60 mechanized brigades on the line or over 6,000 tanks. A total of 24,000 tanks, of which 4,000 were heavies, were available to the Soviet Union.<sup>27</sup> In general, these tanks were superior to the German tanks, but the Russian organization, method of employment, and armored doctrine were not as sound as those of the Germans.<sup>28</sup>

Throughout the Russian campaign the Germans maintained their armor in panzer corps and panzer armies and, when possible, fought panzer divisions in pairs supported by motorized infantry. It was this wise use of armor that allowed the Germans to win their initial victories over the Russians, and to stay in Russia for over three years in spite of the Russian superiority in infantry, armor, and artillery.

## THE RUSSIAN DOCTRINE ON ARMOR EMPLOYMENT

After World War I the Russians accepted the French doctrine and principles of warfare in the reorganization of the Russian army. The first Five-Year Plan of 1927 provided a good industrial base for the production of weapons of war and for armored vehicles. The leaders of the Russian army demanded a favorable combination of heavy fire power and heavy armor in both the heavy and medium tank, as well as good mobility, low silhouette, and overall small dimensions. The Russian doctrine provided for separate brigades to be spread across the front in support of the infantry divisions. Russia had not accepted the German doctrine of mass employment of armor in spite of the amazing success of the German blitzkrieg of Poland in 1939 and of the Western Allies in 1940.<sup>29</sup>

By October 1941 the Russian T34 tank mounting a 76mm gun, and with greater armor plate and cross-country mobility than the German tanks, appeared on the battlefield. This came as an unpleasant surprise to the Germans, whose tanks carried a lighter gun. Thus, the defeat of the Russians during the summer and fall of 1941, and during 1942 was mainly a result of superior German tank doctrine, tactics, and control, and was not due to the number or types of German tanks.

### Russian Doctrine of 1941-1942

In 1941 the Russian army allocated the tank brigade or one or more of its battalions to the infantry division making the main effort or facing the greatest German thrust. This resulted in tank units moving from division to division on very short notice to support divisions with which they had not trained. Poor coordination and lack of common understanding of the tank capabilities was evidenced. Infantry commanders tended to restrict the speed and flexibility of the tanks to the tempo of their infantry assaults, thus nullifying two of the characteristics which gave armor its best chance for success in battle.

The Russian army leaders found that tanks dissipated over a wide front were no match for the German massed armored assaults. Consequently the High Command in Moscow called for a concentration of tank forces into a

larger formation called a tank corps. The Russian World War II tank corps was more like a United States armored division, and consisted of 12,000 officers and men in a headquarters, three medium tank brigades (about 450 tanks), a motorized rifle brigade, five artillery regiments, and supporting arms and services.

During the summer of 1942 the Russian tank corps entered the scene of combat but its command and control was far inferior to that of the German panzer division. The Russian infantry officer had to learn the concept of mass employment of armor, the need for flexibility and decentralization of control. The Russians strived hard to teach their tank corps commanders the German doctrine and method of employment of armor. This paid dividends, for in the battle of Don Mayen in December 1942 three Russian tank corps aided in a breakthrough which carried them 150 miles and resulted in the destruction of an entire Italian field army.

Yet in general the tank tactics of 1942 were characterized by great infantry mass in slow, powerful, frontal attacks after gigantic artillery preparations. Immediately behind the infantry division moved the brigade tanks which passed through the infantry at a pre-planned terrain feature and advanced on to a limited objective. Then a new limited objective attack would be launched in the same manner.

Massive, slow grinding attacks of this type were bound to recapture ground from the enemy but at a great cost to the attacking infantry, in ammunition expended, and in tanks destroyed. Such attacks failed to encircle and destroy the Germans. A change was required in the doctrine and concept of the employment of the Russian mass of infantry, tanks, and artillery.

### Russian Doctrine of 1943 to 1945

A study of unclassified documents by the author indicates that the Russian army made the required change in their doctrine and concept of tank employment. In 1943 the Soviet High Command brought onto the field of combat the tank army which was similar to the German panzer army of 1941-42. During this year the Russians also improved the T34 medium tank by placing on it an 85mm gun, and produced the initial model of the



JS series of tanks mounting a 122mm gun.<sup>30, 31</sup> By the spring of 1943 the Russians had mastered the employment of the armored army and armored corps. During 1943 the Russians were on the offensive and were rapidly driving the battle weary and depleted German army from Russian soil. In August, during the Russian attack on Karkov, however, German armor in inferior numbers defeated the Russian Fifth Tank Army and destroyed 420 Russian tanks in a three-day battle.<sup>32</sup> The causes for the Russian defeat were due in part to a lack of coordination between the tanks, infantry, artillery, and air within the Fifth Tank Army, as a result of lack of experience of Russian officers in utilization of armor in mass, and in part to the great ability of the German armored leaders.

By 1944 the Russians had accepted the German doctrine of tank employment in full and utilized it to great advantage. In the Russian advance in August 1944, Russian armor cut through disorganized German front in Bessarabia, and elements of ten German divisions were quickly encircled near Kichinev (Kishinev). The Russian tank and mechanized force covered 300 miles to Bucharest in a week, and after a brief pause advanced an additional 200 miles.<sup>33, 34</sup>

In January 1945 Russian tank corps exploited a breakthrough of the German Twelfth Army on the Vistula River and covered 500 miles in 18 days.<sup>35</sup> At the same time five tank corps conducted an exploitation from Poland to the Baltic Sea and trapped thousands of German troops in East Prussia.<sup>36</sup> In their 900-mile advance from Moscow to Berlin, the Russians continually executed deep penetrations and rapid advances with their armored armies.<sup>37</sup> The Russians had become experts in armored operations.

### Russian Doctrine of 1946-1953

The Russian army today possesses greater capabilities in armored warfare than the army of any other nation. The Russian army has accepted the proven doctrine of armored warfare much more completely than any other power. In over-all armor-infantry proportions the Russian army has changed since 1945 from a proportion of infantry to tanks of 10:1 to its present 2:1.<sup>38</sup>

The Russians have two types of ar-

mored divisions: the armored or mechanized division which is similar to the United States armored division; and the tank division which is very strong in tanks but weak in infantry and accompanying arms. The mechanized and tank divisions may be organized into mechanized armies, each of which will probably contain two tank divisions and two mechanized divisions.<sup>39</sup> (Figure 2.) "Armor is used . . . in mass. Even the 1936 Field Regulations stipulated that the 'Use of tanks in the offensive must be in mass,' and this has remained in subsequent regulations. (United States military doctrine and practice is criticized by the Soviets for allegedly failing to recognize the importance of using tanks in mass, it being stated that they were used in Europe only by divisions, and in the Pacific only by battalions). Especially after the battle of Stalingrad, the Soviets used tanks in mass. At Stalingrad the concentration reached over 40 tanks per mile. The largest Soviet concentration of tanks was at Berlin, where allegedly 4,000 to 6,300 were massed."<sup>40</sup>

Russian armored doctrine states that armored forces are most effectively employed throughout the depth of the enemy defense. After intense artillery preparation the infantry assaults penetrate the enemy defensive position. The armored forces then strike in the direction of the deepest infantry pene-

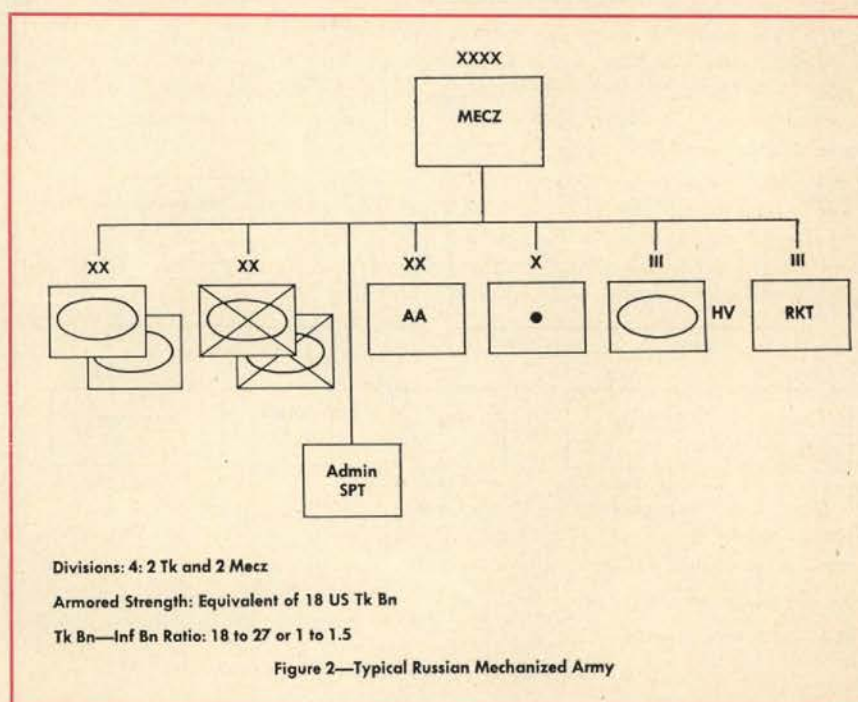
tration on a narrow front with the mission of cutting off and destroying the enemy force.<sup>41</sup>

## THE UNITED STATES DOCTRINE ON ARMOR EMPLOYMENT

### Doctrine of 1941-1953

By 1941, under the leadership of General Chaffee, the United States had organized two poorly equipped armored divisions, and had established a large armored school and training center at Ft. Knox, Kentucky. The United States had only a few commanders and staff officers trained in the concept of the employment of armored units.<sup>42</sup> The German armored doctrine, which had proven so successful from 1939 through 1941, was accepted by the United States armored force leaders. Four armored corps were activated under the control of the Armored Force headquarters at Ft. Knox to supervise and conduct training of large armored units.

However, the War Department later felt that all higher commanders should be capable of employing armored units and adopted the *expedient* of attaching armored divisions to standard corps in order to train higher commanders and their staffs in the correct employment of armored units, thus rendering the armored corps unnecessary. On 1 October 1943, after less than two years of existence, the War Department directed that the II,





III, and IV Armored Corps be reorganized and redesignated the XVIII, XIX, and XX Corps. This action resulted in the elimination of the armored corps from the United States Army. The I Armored Corps had been inactivated previously in North Africa to form the headquarters of the Seventh Army.<sup>43</sup>

The above action dissipated the armored divisions throughout the infantry corps like the tanks of the Poles, Western Allies, and Russia had been dissipated along their fronts in 1939 through 1941. The infantry corps commanders may well have learned to employ an armored division within the infantry corps as this change anticipated, but not a single American commander or staff officer was learning how to employ armor in mass. Nowhere were we training two or more armored divisions to operate as a team in a corps in which the corps commander and staff officers were armored and had the armored concept and attitude. Instead our armored divisions were put into infantry corps, normally only one armored division to a corps.

The majority of the United States armored divisions in France in 1944-45 was employed by General Patton's Third Army in the exploitation phase of the St. Lo Breakthrough on 25 July 1944. (Figure 3.) Even in this great armored action the utilization of two armored divisions in a single corps

was the exception rather than the rule. The armored divisions advanced singly on a wide front. If the enemy had had the mobile reserves the Russians will have in the future, our armored advances would have been defeated piecemeal. In a penetration against an enemy strong in mobile reserves it is essential that corps have two armored divisions advancing as a team on a rather narrow front in order to insure a flexible mass of armor for maneuver.

After the completion of the Third Army's dash to the Moselle River, and the First Army's dash to the German border, the most logical place for the mass employment of armor on the entire allied front was between Aachen and Geilenkirchen, Germany in the XIX Corps zone of advance. From this line east to the Rhine River was the almost treeless plain of the Rhineland. This was the most direct approach to the Ruhr and to the North German Plain. Between the 2d and 4th of October 1944 the 30th Infantry Division followed by the 2d Armored Division penetrated the Siegfried Line to a depth of five miles on a five-mile front. This could easily have, and should have been exploited by a mass armored attack. Instead it was halted due to a lack of corps and army reserve, due to an over-extension of the two divisions, and due to the desire to capture Aachen rather than by-pass it. If the XIX Corps had been

furnished two or more armored divisions from the First or Third Army who were attempting to penetrate the hilly, wooded country of the Ardennes and the German Palatinate, or trying to reduce Metz, the Rhine River could have been reached from Nijmegen, Holland, to Bonn, Germany, in a few days with a minimum of casualties. Such a penetration would have threatened the enemy position in the Ardennes and the Palatinate which encirclement from the North and the entire German front would have collapsed. Instead, we chose to fight through the forests of the Ardennes, the swamplands of Holland, and around the cities of Metz and Aachen with our armor. *All of these should have been bypassed by armor. We lacked the armored concept. We did not by-pass strong points and penetrate deeply and quickly at every opportunity.*

In Patton's Third Army operation against the Ardennes and the German Palatinate between 26 February and 21 March 1945 we see the best example of mass employment of armor by the American army in World War II, even though the terrain would not be considered good tank terrain. The Third Army began the operation with five armored and nine infantry divisions. Its ratio of tank battalions to infantry battalions was 1 to 2.2. The attack was carried out over very poor tank country, with steep forest-covered hills, and many streams and rivers crossing the avenue of advance. Yet armor was employed aggressively and in mass against a rather determined enemy and was extremely successful. (Figure 4.)

In conclusion it may be stated that the employment of armor in mass by the United States during World War II did not compare to the mass employment of armor by the Germans or the Russians. The method of employment of armor used by the United States Army in World War II violated the principle of concentration of mass and will probably be unsuccessful if utilized against an enemy like the Russians, who will maintain a mobile armored mass for counterattack against any penetrations.

#### A Proposed US Doctrine for the Mass Employment of Armor

The present US doctrine on the employment of armor, as evidenced

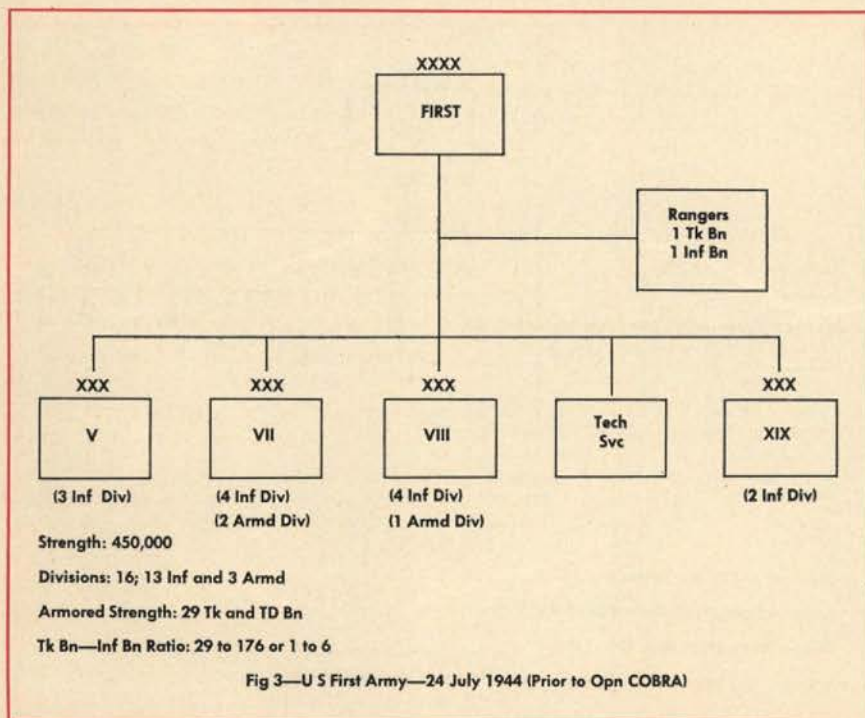
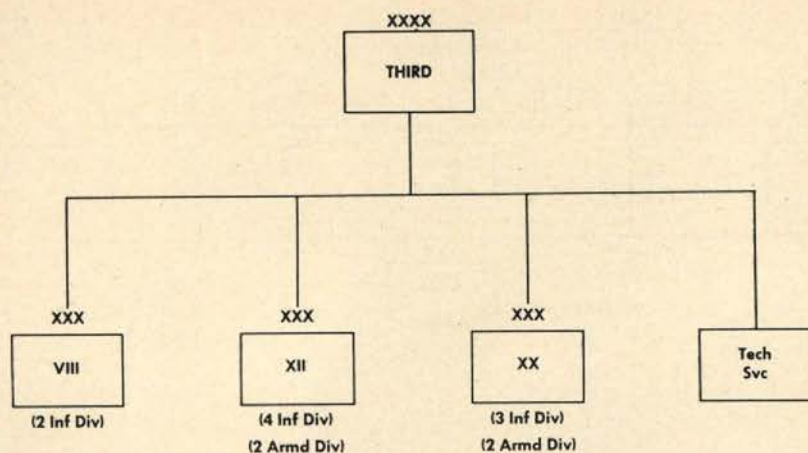


Fig 3—U S First Army—24 July 1944 (Prior to Opn COBRA)





Strength: 332,500

Divisions: 13; 9 Inf and 4 Armd

Armored Strength: 40 Tk and TD Bn

Tk Bn—Inf Bn Ratio: 40 to 92 or 1 to 2.3

Figure 4—U S Third Army—23 March 1945 (After Palatinate)

#### NORMAL ARMOR-INFANTRY RATIO IN CORPS OF THE FIELD ARMY

Units	Tank Bns*	Inf Bns*	Remarks
Infantry Divs	6	27	11 of the 15 Tk Bns or 73.3% are dissipated among the infantry divisions or as separate corps units.
Arm'd Cav Reg't	2	1	
Armored Group	3	0	
Armored Divs	4	4	
Total	15	32	Ratio of 1 Tk Bn to 2.1 Inf Bn

#### ARMOR-INFANTRY RATIO IN THE PROPOSED INFANTRY CORPS

Units	Tank Bns*	Inf Bns*	Remarks
Infantry Divs	4	36	6 of the 10 Tk Bns or 60% are dissipated among the infantry divisions or as separate corps units.
Arm'd Cav Reg't	2	1	
Armored Group	0	0	
Armored Divs	4	4	
Total	10	41	Ratio of 1 Tk Bn to 4.1 Inf Bns

#### ARMOR-INFANTRY RATIO IN THE PROPOSED ARMORED CORPS

Units	Tank Bns*	Inf Bns*	Remarks
Infantry Divs	2	18	4 of the 16 Tk Bns or 25% are dissipated among the infantry divisions or as separate corps units.
Arm'd Cav Reg't	2	1	
Armored Group	0	0	
Armored Divs	12	12	
Total	16	31	Ratio of 1 Tk Bn to 2 Inf Bns

\*or equivalent

FIGURE 5. To Illustrate the Dissipation of Armored Strength.

by articles published in semi-official publications and magazines, does not provide for mass employment of armor above division level. It provides normally for the employment of an armored division with each corps. The utilization of armored corps and armored armies is not considered. The armored strength of the average US corps is considerable, but 73 per cent of its tank battalions are dissipated throughout the infantry divisions and small separate armored units. (Figure 5.) Within the field army the tank battalion-infantry battalion ratio is normally about 1 to 2.5 with 81 per cent of the tank battalions dissipated throughout the infantry division and small separate units (Figure 6.)

The field army of World War II provided for no strong army reserve. The army commander, if he desired to employ armor in mass to exploit a situation, was forced to reorganize his corps in contact with the enemy to develop the necessary exploiting or counterattacking forces. The First and Third Army actions during the Battle of the Bulge are good examples. This reorganization takes time. The problems of coordination and the time required for this reorganization might well be the difference between a completely successful exploitation and an unsuccessful one. If the World War II field army was being pressed across its entire front by strong enemy attacks and a deep enemy penetration was made in one of the corps zones of action, the field army command would have had to take an armored or infantry division from one of the corps to counterattack the penetration, thereby leaving one corps without an adequate reserve.

Likewise, the World War II doctrine did not provide an adequate reserve for the army group commander. Thus, in order that the army group commander might influence the operations, he had to reorganize or relocate field armies in contact with the enemy. This is a very dangerous, expensive, and ineffective way to defend against an enemy that has a preponderance of armor, infantry, and artillery. It was the method that Hitler forced the German High Command to employ in Russia in 1944-45 when he would not allow the establishment of a reserve corps or a reserve field army for the purpose of counterattacking in force the Rus-



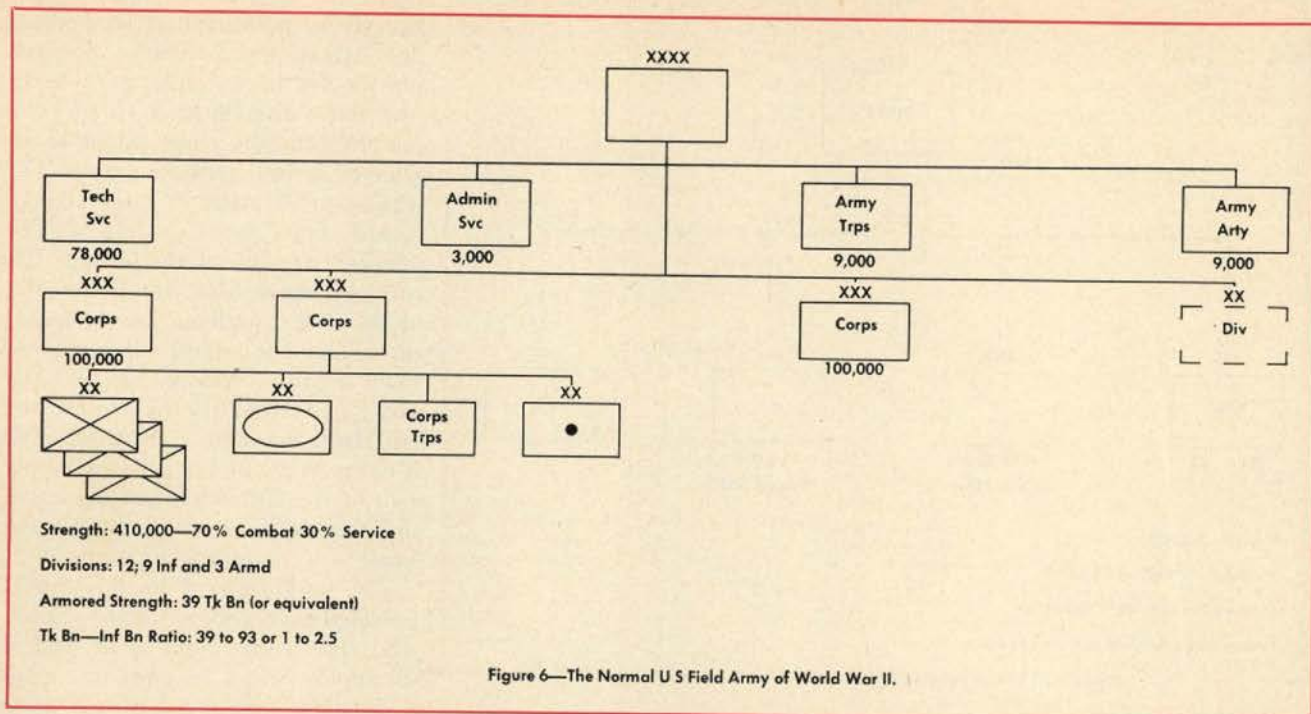


Figure 6—The Normal U S Field Army of World War II.

sian penetrations. The German General Staff gives this as one of the important reasons the Germans were unable to halt the Russian advance during those years.<sup>44</sup>

World War II experience shows that a field army commander can control and command four to six corps without difficulty, and that a corps commander can control and command

five to six divisions. Also, based upon the Polish, Western Allies, and Russian experiences in 1939 through 1941 the employment of separate tank battalions, tank regiments, and tank brigades as corps or army troops is wasteful of armor and of doubtful value. The great increase in the effectiveness of anti-tank weapons available to the infantry partially replaces

the anti-tank weapons (tanks) of the regimental tank companies. This should allow the infantry division to be reorganized so that the regimental tank companies are eliminated, and so that the division tank battalion can be increased to four tank companies. (Figure 5.)

The adoption of these suggested changes in the normal organization of

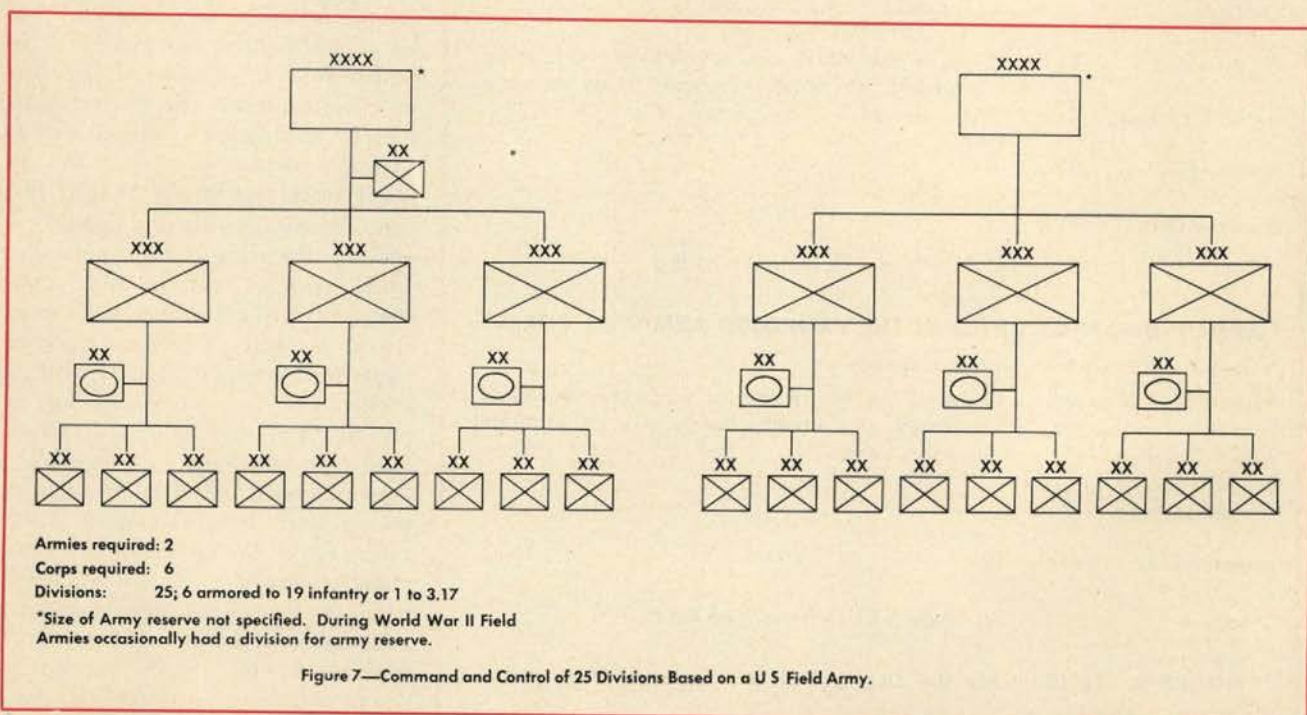
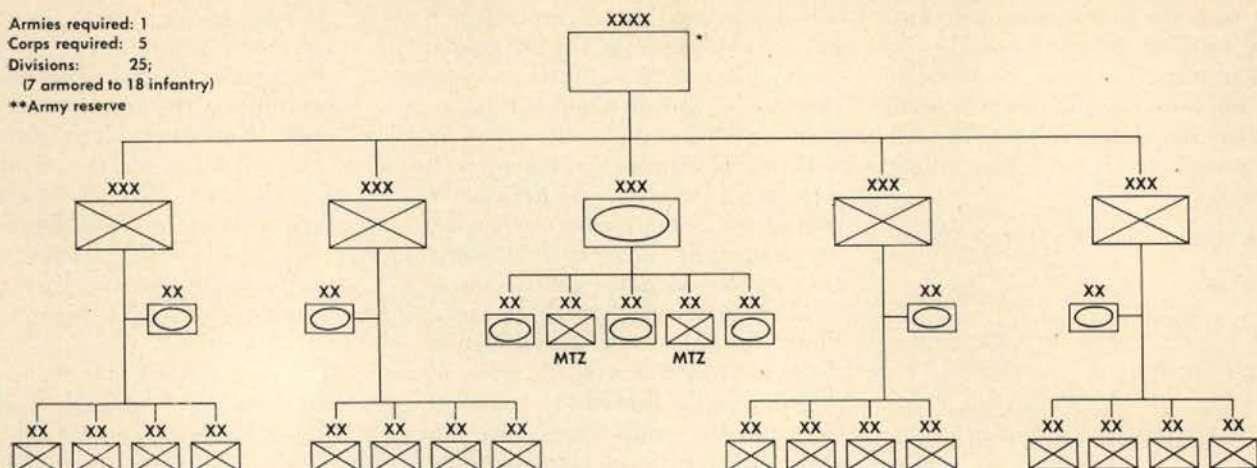


Figure 7—Command and Control of 25 Divisions Based on a U S Field Army.



Armies required: 1  
Corps required: 5  
Divisions: 25;  
(7 armored to 18 infantry)  
\*\*Army reserve



\*Savings on a 25 Division Basis of Proposed Field Army Over the Type Field Army

1. Organic army troops of one army.....	1,957
2. Organic corps troops of one corps.....	2,871
3. One Arm'd Gp of 3 Tk Bns in ea corps.....	12,666
4. Two heavy Tk Co's in ea Inf Div.....	5,328
5. Diff between 1 Inf & 1 Arm'd Div.....	2,823
Total Personnel Saved.....	25,645

Equip't of units organic to an army.....	
Equip't of units organic to a corps.....	
Equip't of 1 Arm'd Gp of 3 Tk Bns.....	1,122 tks
Equip't of 2 Tk Co's per Inf Div.....	792 tks
Diff in Equip't of 1 Inf Div & 1 Arm'd Div.....	217 tks
Total Tanks Saved.....	1,697

Figure 8—Command and Control of 25 Divisions Based on the Proposed Field Army.

the U.S. field army and the infantry division, if applied to a twenty-five division force, would save the equivalent of two infantry divisions in personnel and sufficient tanks to equip five armored divisions. (Figures 7 and 8.) This organization would include an armored corps within every field army, as an army reserve, providing the field army is operating on terrain

suitable for the employment of an armored corps. (Figure 9.) An armored army composed of one airborne corps of three airborne divisions and one armored corps of three armored divisions and a motorized division should be provided for the theater. Such a theater reserve would be used for the securing of deep objectives, or for the counterattack against

major enemy penetrations as developed in the Ardennes in 1940 and again in December 1944. It could also be attached to an army group for a deep exploitation or for defense within the army group zone of action.

This reorganization would provide the commanders at army group and army level with a maneuvering force without interfering with the organi-

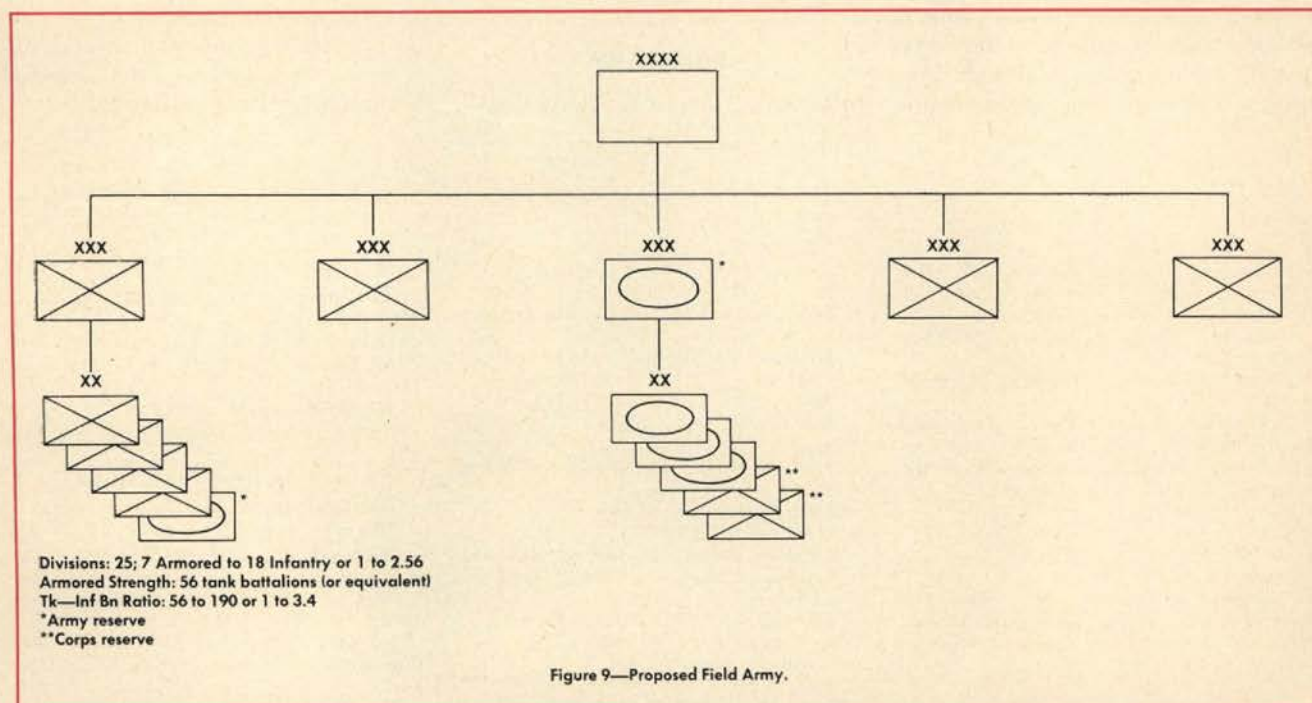


Figure 9—Proposed Field Army.



zation of the armies and corps in contact with the enemy, and would provide a mobile defense in depth.

The tactical doctrine proposed for the mass employment of armor by the United States army can best be stated by quotations from three military leaders.

"Klotzen, nicht Kleckern" (Boot them, don't splatter them)

—Guderian

"Git thar fustest with the most-est"—Forrest

"There are three principles of warfare! Audacity, Audacity, and Audacity."—Patton

"To hell with my flanks, I'm going to make the Heinies worry about theirs"—Patton.

In other words, to be most effective against enemy resistance in depth, armor should attack in mass with a minimum of two armored divisions and one motorized division under a single command, with an ideal of three armored divisions and two motorized divisions. The commander of the mass should be given distinct objectives, and a general direction of advance. The advance should be made on a relatively narrow front so as not to lose the effect of mass, but sufficiently dispersed to allow for maneuver and protection against atomic, radiological, and chemical attacks.

Except when the enemy occupies a well organized defensive position with extensive minefields, massed armored attacks should be utilized to the maximum to make the breakthrough. Preparatory fires for this attack might

well include the timely utilization of the atomic gun, the effects of which can be rapidly exploited by the massed armored attack, thus insuring a rapid penetration with a minimum loss in personnel and equipment.

If the breakthrough of the armored corps is a success, the theater reserve may be utilized to further deepen the penetration by securing vital objectives still deeper in the enemy rear.

Thus, mass employment of armor brings decisive shock action within the field army commander's grasp. It provides, on the battlefield, the means by which the army commander can achieve the ultimate objective—the destruction of the enemy's will to fight.

If during a continental war, a ratio of 8-4-1 infantry divisions, armored divisions, and airborne divisions, respectively, can be attained in Europe, and if a strong tactical air force is available, the command will have a powerful and flexible instrument at its disposal. The atomic explosion presents even a greater opportunity for mass armor to use its inherent characteristics of mobility, shock action, and fire power, to even greater advantage than before. It is better to economize in the equipment of the bulk of the forces, in order to have some of the forces of the highest striking capacity available for mass employment, than it is to distribute the material evenly to all forces.

## SUMMARY

In summary, it can be stated that:

1. There is no United States army doctrine for the mass employment of armor.
2. The present United States army doctrine on the employment of armor is more closely related to the doctrine of the Poles, French, and Russians during their defeats in 1939 through 1941, than to the doctrine of the Germans and the Russians during the periods of their greatest victories.
3. The proposed doctrine for mass employment of armor is sound and was utilized successfully in World War II, first by the Germans, and later by the Russians.
4. There is a need for the establishment in peacetime of an armored corps headquarters for the training of armored officers in the command and employment of large armored forces, and for the development of doctrine, and concepts of operations to include logistics.
5. The present mobilization plan should be revised to include four armored divisions for every nine infantry and airborne divisions, and one armored corps for every four standard corps, so that the doctrine of mass employment of armor can be effected.
6. The armored corps should have the same table of organization and equipment as a standard corps but should have a commander and staff of armored officers who are well trained and indoctrinated in the armored concept of operations.

<sup>1</sup>Guderian, "Panzer Leader," pp. 277, 314.

<sup>2</sup>Devers, Jacob, "Future of Armor," Ltr Hq AGF GNCT 470.5(c), 19 Nov. 47.

<sup>3</sup>Garthoff, Raymond, "Soviet Military Doctrine," p. 312.

<sup>4</sup>Stern, Sir Albert G., "Tanks, 1914-1918," p. 240.

<sup>5</sup>Rockenbach, S. D., *Lecture*, "Tanks and Their Operations with the First American Army at the St. Mihiel Salient and in the Argonne," 27 Dec. 1918, p. 2.

<sup>6</sup>Stern, *op. cit.*, p. 195.

<sup>7</sup>*Ibid.*, p. 195.

<sup>8</sup>Rockenbach, *op. cit.*, pp. 6-20.

<sup>9</sup>Stern, *op. cit.*, p. 195.

<sup>10</sup>Ogorkiewicz, Richard M., "The Ten Ages of Tank," *Armor*, May-June 52, pp. 11-12.

<sup>11</sup>*Ibid.*, p. 14.

<sup>12</sup>*Ibid.*, pp. 14-15.

<sup>13</sup>Guderian, *op. cit.*, p. 41.

<sup>14</sup>*Ibid.*, p. 41.

<sup>15</sup>*Ibid.*, p. 90.

<sup>16</sup>Hart, B. H. L., "The German Generals Talk," *passim*.

<sup>17</sup>Guderian, *op. cit.*, pp. 65-83.

<sup>18</sup>*Ibid.*, p. 94.

<sup>19</sup>*Ibid.*, p. 96.

<sup>20</sup>*Ibid.*, p. 89.

<sup>21</sup>Hart, *op. cit.*, p. 124.

<sup>22</sup>Hart, B. H. L., "Defence of the West," p. 213.

<sup>23</sup>Guderian, *op. cit.*, p. 146.

<sup>24</sup>*Ibid.*, pp. 141-270.

<sup>25</sup>Garthoff, *op. cit.*, pp. 309, 427-428, 431.

<sup>26</sup>Guillaume, Augustin, "Soviet Arms and Soviet Power," pp. 24-25.

<sup>27</sup>Garthoff, *op. cit.*, pp. 426, 431.

<sup>28</sup>Guderian, *op. cit.*, p. 238.

<sup>29</sup>Garthoff, *op. cit.*, p. 309.

<sup>30</sup>*Ibid.*, p. 309.

<sup>31</sup>Ely, L. B., "The Red Army Today," p. 34.

<sup>32</sup>Garthoff, *op. cit.*, p. 214.

<sup>33</sup>Guderian, *op. cit.*, p. 367 and Sketch Map 31, p. 363.

<sup>34</sup>Allen, W. E. D., and Muratoff, Paul, "The Russian Campaigns of 1944-45," pp. 163-176.

<sup>35</sup>Garthoff, *op. cit.*, p. 142.

<sup>36</sup>Allen and Muratoff, *op. cit.*, pp. 265-275.

<sup>37</sup>Garthoff, *op. cit.*, pp. 142, 310, 311.

<sup>38</sup>Garthoff, *op. cit.*, p. 312.

<sup>39</sup>Ely, *op. cit.*, p. 6.

<sup>40</sup>Garthoff, *op. cit.*, p. 123.

<sup>41</sup>*Ibid.*, p. 310.

<sup>42</sup>Rpt of AFF, *Advisory Panel on Armor*, 18 Feb. 49, Vol. II, Annex B, p. 10.

<sup>43</sup>Hq AGF, "History of the Armored Force, Command and Center," *Study No. 27*, pp. 14-15.

<sup>44</sup>Guderian, *op. cit.*, pp. 323, 327.



# *The Sixty-fifth Annual Meeting of The United States Armor Association*

**T**HE 65th Annual Meeting of the United States Armor Association held at Fort Knox on Friday, January 29th is now in the record books. However, the pleasures, the renewing of acquaintances, the increased interest in Armor (the Branch) and ARMOR (the Association) will long be remembered and will serve as the base upon which to build the events in 1954.

General Charles L. Bolte, the Vice Chief of Staff of the Army, started off the day of festivities when he addressed approximately 1800 officers at Sadowski Field House.

Many of the leading figures in the Army were in attendance to hear General Bolte. Among those joining this annual one-day affair were: Lieutenant General Edward H. Brooks, Retired; Lieutenant General Willis D. Crittenberger, Retired, President of the Armor Association; Lieutenant General John E. Dahlquist, Chief AFF; Lieutenant General Geoffrey Keyes, Director, Weapons System Evaluation Group; Lieutenant General Williston B. Palmer, Assistant Chief of Staff, G4, Department of the Army; Lieutenant General Floyd L. Parks, Commanding General, Second Army; Lieutenant General I. D. White, Commanding General, Fourth Army; Major General William S. Biddle, Commanding General, 1st Armored Division; Major General John H. Collier, Commanding General, The Armored Center; Major General Ernest N. Harmon, Retired, President, Norwich University; Major General Albert S. Johnson, Commanding General, 49th Armored Division; Major General John M. Lentz, Chief, Combat Arms Advisory Group, AFF; Major General Donald W. McGowan, Commanding General, 50th Armored Division; Major General George W. Read, Jr., Chief of Staff, AFF; Major General Gordon B. Rogers, Commanding General, 3d Armored Division; Major General P. W. Rutledge, Assistant Chief of Staff for Development and Test, AFF; Brigadier General John R. Beishline, As-

sistant Division Commander, 3d Armored Division; Brigadier General James F. Cantwell, 50th Armored Division; Brigadier General Chester A. Charles, 50th Armored Division; Brigadier General John T. Cole, Retired; Brigadier General L. R. Dewey, Chief, Management Division, Office of the Comptroller, Department of the Army; Brigadier General R. L. Howze, Assistant Commandant, The Armored School; Brigadier General Clayton P. Kerr, Assistant Division Commander, 49th Armored Division; Brigadier General Andrew P. O'Meara, Assistant Deputy ACofS, G4 for Research and Development, Department of the Army; Brigadier General Robert W. Porter, Jr., Military Advisor to Director, Foreign Operations Administration; Brigadier General Paul M. Robinett, Retired, Office Chief of Military History, Department of the Army; Brigadier General Harry Roper, Deputy ACofS, G3, Department of the Army; Brigadier General Harry H. Semmes, USAR, Washington, D. C.; Brigadier General John K. Waters, Deputy Commanding General, The Armored Center; Brigadier General E. D. Wolf, 50th Armored Division; and many other members of Armor of all components—Regular, Reserve and National Guard—including students, staff troops and faculty personnel from The Armored School.

In addition there were some distinguished members of the press including Mr. George Fielding Eliot, General Features Syndicate; Mr. Warren Kennet, Newark News; Mr. Walter Millis, New York Herald Tribune; Mr. Larry Sims, New York Herald Tribune; and Mr. Garrett Underhill, writer and noted Soviet Military authority. Mr. Tom White represented the World Wars Tank Corps Association, and Mr. William A. Edie, the 3d Armored Division Association.

It was singularly appropriate that the Vice Chief of Staff should deliver such an address at a time when reports from Washington indicate the development of plans which may bring

about sweeping changes in the conduct of the national defense. Formulation of military plans has been a prominent feature of General Bolte's career. He was the first chief of staff of the newly established European Theater of Operations in England in 1942, and later joined Headquarters Army Ground Forces in Washington, D. C. He assumed command of the 34th Division in Italy in July 1944 and directed its operations for the remainder of World War II. Following termination of the European conflict, he became successively Chief of Staff of the Army Ground Forces; Director of Special Joint Planning Group in Washington; Director of the Plans and Operations Division, General Staff, U.S. Army; later, he was appointed Assistant Chief of Staff for Operations; then, Deputy Chief of Staff for Plans. He served for a time in command of the Seventh Army in Europe, then as Commanding General, USAREUR before being appointed to his present position.

Following General Bolte's speech, the assembly moved to Dorret's Run where they witnessed a "live" demonstration of "Armor in the Attack," demonstrated by a reinforced tank company. How two outstanding military analysts viewed this spectacle is reported elsewhere in these pages.

A luncheon followed at the country club. The afternoon session was opened by Major General Collier, the Commanding General of The Armored Center and official host for this occasion, with an address of welcome to all Association members who had assembled in Theater No. 1 for the annual business meeting. A short address by Lieutenant General Parks, Second Army Commander, followed. General Collier next introduced General Crittenberger who took charge of the business meeting.

Approximately 400 members were present for the business session, and 800 more stationed around the world (whose duties prevented attendance) were represented by absentee ballots. These two groups totaled well over



the constitutional requirement for a quorum.

The reading of the minutes of the previous meeting was dispensed with, and the Secretary read the Annual Report (which also appears elsewhere in these pages) covering the financial and general affairs of the Association.

Acceptance of the Annual Report was followed by the consideration of the recommended changes to the constitution, which were proposed and circulated to all members as required by the constitution.

Both of these changes had been under consideration for some time by the Executive Council who had requested the poll of the membership.

Since the first notices of these proposals were circulated, some questions had arisen as to the feasibility of relaxing the restrictions for active voting members. Inasmuch as there was no urgent reason for acting upon this proposal at once, the Executive Council decided that this proposal should be tabled for further study. All those assembled agreed to this action.

The second proposal was to increase the number of members on the Executive Council from twelve to eighteen. This was passed by an overwhelming majority.

Consideration of a slate of officers for 1954 was next on the agenda. Brigadier General Harry H. Semmes, a member of the nominating committee, read the proposed slate of officers for nomination which was carried unanimously. Major General John H. Collier, our new President, accepted the chair and asked for new business.

A motion was made from the floor in tribute to General Crittenberger and was passed unanimously by a standing ovation. In substance it was moved: "Be it resolved that the Armor Association, through the members present at this the 65th Annual Meeting, have entered into the minutes an expression of highest esteem and appreciation to Lieutenant General Willis D. Crittenberger for his guidance of and great contribution to this Association during his four terms as its President."

Following this well-deserved tribute General Collier stated that he wanted to alert those present to the feasibility of moving the annual meeting from January to the second quarter of the calendar year.

## A MESSAGE FROM THE CHIEF OF STAFF

*To the Members of the United States Armor Association at their Annual Meeting, Fort Knox, Kentucky, January 29, 1954*

Because of the pressure of my duties, I am not able to be with you at your Annual Meeting, an event I was looking forward to with great pleasure. However, I extend to each of you my best wishes for your success and my appreciation for the enthusiasm and deep interest in your branch which is indicated by your presence here today.

The requirement upon all soldiers to master their profession—always of fundamental importance—has gained new emphasis with the advent of new weapons and the resultant greater capabilities and responsibilities of the Army. Armor, with the improved tanks and other armament at its disposal, now has to a greater degree than ever before the characteristics of speed and shock action which have always distinguished it. Armor will, therefore, be a decisive force in any test of the future.

Of greater importance than the quality of Army weapons, however, is the quality of our officers and noncommissioned officers and of the fighting men in the ranks. The increasing complexity of ground warfare and the greater demands that modern warfare makes upon the individual place upon the members of the Army the necessity for ever greater professional competence, increased devotion to the principles of duty and service, and higher dedication to the ideals which have made our nation spiritually and morally strong and which have strengthened our Army throughout its long and glorious history.

I extend to all the members of the United States Armor Association my heartfelt congratulations for your many accomplishments. I am confident that from this meeting you will derive renewed inspiration and the determination to make the coming year the occasion for even greater achievements for Armor and for the Army as a whole.

M. B. RIDGWAY  
General, US Army

To accomplish this will necessitate a change to the constitution. In view of the fact that this change is relatively minor in importance, it is believed that a notice in the magazine announcing this amendment at a subsequent council meeting will suffice.

Reasons given for substantiating this change are the uncertain climatic conditions in January, the burden on The Armored School at this time of the year, and the belief that a larger body of the membership would be able to attend in the spring. The only disadvantages as seen at this time are the time lag between the end of the year reports and their acceptance by the membership and other administrative adjustments which will have to be made in the office of the Secretary-Treasurer.

There being no further business this portion of the meeting was adjourned.

An evening dinner for many of the

visiting dignitaries closed the day's activities. Those in attendance were fortunate to receive a few words from General Dahlquist, Commanding General, OCAFF, Mr. George Fielding Eliot, and Mr. Walter Millis.

All in all, it is believed that the 65th Annual Meeting was a huge success. Much of this can be attributed to our host, General Collier, who was ably assisted by his staff. General R. L. Howze, the Assistant Commandant, and Colonel Henry C. Newton, the Director of Instruction, contributed greatly to the program.

Once again, due to normal rotation, new faces were present and some of those who had been with us in the past have since departed for overseas or other assignments.

Our continuing goal to increase the prestige of American Armor throughout the world is ever before us. Let us all strive to make the 66th meeting bigger and better.



## Tankers Developing Atomic Age Tactics

**T**HE Armored Center at Fort Knox is working out a system of flexible mobile tactics that holds great promise for the future.

To produce atomic explosions on the battlefield will be useful exactly in proportion to the speed and vigor with which the results of these explosions are followed up. An enemy dazed and shattered by atomic blows will recover, given time: The idea of the Armor boys is NOT to give him time to recover, but to get right in there and exploit the confusion and shock while the exploiting is good.

I have just seen a demonstration which illustrates how this might be done. This demonstration was entitled "The medium tank company (reinforced) in the attack." That word "(reinforced)" is highly important. Armor organization is arranged so as to be highly flexible. Whatever elements are required for a particular mission—tanks, infantry, artillery, engineers—can be quickly put together under a single command without involving a costly, time-consuming break-up of units.

This is something like the old German "einheit" system: A lot of small groups from which any desired combination can be readily made.

\* \* \*

In the demonstration I witnessed, a medium tank company (three platoons of five M47 tanks each) was reinforced by a platoon of armored infantry, a battery of 105mm armored artillery, a platoon of armored engineers with a bridge section attached, and a squadron of F-86 fighter-bombers.

The company commander controlled the whole show. The tremendous advantages of this arrangement are obvious. As the armored division pushes forward to exploit either the results of atomic bombardment, or a breakthrough by other units, or an attack by aircraft or guided missiles using conventional explosives, the division commander and his immediate subordinates will never be quite sure what the particular tactical situation to be encountered by their advancing units will be. With this idea of flexibility thoroughly beaten into the heads of every commander concerned, right on down the line to platoon leaders, the unit commander on the spot can pick up whatever he has handy and throw it into action without waiting for a lot of jibber-jabber between various superior or adjoining headquarters.

\* \* \*

Another tremendous time-saver is the way the armored infantry pushes forward right behind the tanks. The armored troop-carriers move in bounds, from cover to cover, in such a way that when the final phase-line is reached where the infantry are

needed to mop up, the carriers are right up there—they drop their ramps and out come the infantry squads all ready to go. These carriers even push right ahead through the fragmentation hail of their own supporting artillery time-fire—"Makes it a little noisy inside these steel cans, but the boys don't seem to mind. They're sort of glad to be in there," says Major General John H. Collier, the commander of the Armored Center.

Time and again in previous campaigns it has happened that when tanks reached their objective there was no infantry to take over, mop up and dig in to hold the ground gained. This will happen less often in future. It will make a great deal of difference in the effectiveness of our mobile follow-up.

Another time-saver in actual warfare will be the simultaneous use of air and artillery preparation. In a demonstration, the air comes in first and does its stuff, then the artillery follows with its fire. This, of course, is to avoid the chance of low-flying aircraft being hit by a stray shell.

But in real battle, the fly-boys say they'd rather take this chance than the chance of being hit by hostile antiaircraft. If they attack first, the enemy ack-ack is free to do its stuff—and modern radar-controlled antiaircraft fire can be deadly indeed, as our own experiments and our Korean experience both testify. But if the enemy antiaircraft is being plastered by our field artillery as well as attacked from the air, it will be far less effective.

This is a much better deal from the pilot's viewpoint, and quite offsets the chance of accidental casualties from our own guns. Naturally this is also a good thing from the over-all commander's viewpoint, since the combined intensity of the air and artillery preparations will probably be more effective than laying on one after the other.

The tactics of a battlefield on which are combined, as a working team, armored troops of this sort with atomic guided missiles, aircraft and long-range artillery, will certainly be tactics in which the factor of mobility is of number one importance. Airborne infantry and artillery can come into the picture, too. Applied against an enemy who notoriously depends on the heavy blows of massed battalions, massed tanks and massed aircraft, such tactics seem to offer a considerable degree of promise—especially in the opening phases of any future conflict, while the full shock effect is still numbing the hostile headquarters.

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# The Annual Report of the Secretary-Treasurer-Editor

To the Members of the United States Armor Association:

Submitted herewith is the report of the Secretary-Treasurer-Editor covering the general affairs of the Armor Association for the year of 1953.

## GENERAL

### The Association

The year 1953 proved to be one of continual growth as it pertains to the United States Armor Association. On January 30th, the 64th Annual Meeting was held at The Armored Center, Fort Knox, Kentucky. General Jacob L. Devers, an honorary Vice-President of the Association, was the principal speaker of the day.

The results of this gala occasion were well publicized through the March-April issue of ARMOR in addition to personal contacts made by those members in attendance. The effects of the meeting have been seen in increased membership, and interest in the Association as such, rather than pure subscribers to the magazine. Likewise, increased interest through the gratuitous submission of material was shown throughout the year.

Due to the fact that this organization's success is based largely on its receipts in the form of membership dues, it is significant to note that receipts were close to \$32,000.00

## FINANCIAL REPORT

of

### THE UNITED STATES ARMOR ASSOCIATION

For the Year Ending 31 December 1953

#### CASH RECEIPTS & EXPENDITURES

Department	Receipts	Expenditures
ARMOR Magazine	\$26,578.33	\$20,953.66
Book Department	4,674.87	3,437.45
Income from Investments	170.84	
District of Columbia Sales Tax	9.41	8.16
Miscellaneous	56.24	174.18
Bank Credit & Charge	.40	.35
Postage		1,043.40
Office Supplies		256.52
Stationery & Printing		663.11
Telephone & Telegraph		621.21
Personal Property Tax		31.21
Machinery & Equipment		31.50
Rent		1,980.00
Janitor Service		180.00
Travel Allowances		1,330.00
Travel Expenses		66.89
Maintenance & Repairs		77.19
Council & Editor Expenses		288.13
<b>TOTALS</b>	<b>\$31,490.09</b>	<b>\$31,142.96</b>
Bank Balance (1 January 1953)	415.34	
Bank Balance (31 December 1953)		762.47
<b>TOTAL RECEIPTS &amp; EXPENDITURES</b>	<b>\$31,905.43</b>	<b>\$31,905.43</b>
Total Assets		\$9,530.64
Total Liabilities		266.70
<b>NET WORTH of the Association (31 December 1953)</b>		<b>\$9,263.94</b>
Net Worth (31 December 1952)		8,868.74
<b>INCREASE IN NET WORTH</b>		<b>\$ 395.20</b>

for the year. The largest gain shown over the preceding year is in ARMOR Magazine receipts which continued to grow each issue throughout 1953.

Three council meetings were held. On March 30th, consideration was given to the broadening of the membership provisions for Active and Associate membership. In addition, Major William G. Bell's tenure as Editor was terminated in view of his scheduled departure for overseas. A resolution was drafted proposing an Army-wide Association and Journal. This organization was proposed in addition to the existing organizations and not at their expense. This resolution was circulated to all service associations.

The second council meeting was held on the 31st of July. At this meeting a committee was appointed to further investigate proposed changes to the constitution which were to be reported upon at the next meeting that was held on October 2nd.

At this last meeting plans were firmed up for the annual meeting. The Secretary was directed to poll the membership for proposed constitutional amendments prior to the annual meeting.

The Council Advisory Boards for the two major overseas commands functioned extremely well during the year. Changes in chairmen in both theaters were made necessary due to rotation of assignments. Lieutenant General Bruce C. Clarke replaced Lieutenant General I. D. White in the Far Eastern Theater, and Major General L. L. Doan succeeded Major General George W. Read in Europe. These boards continued to promote interest in the Armor Association through increased membership, encouraging the submitting of material of professional interest, and keeping the office of the Association in Washington informed of any pertinent happenings embracing the field of mobile warfare.

To enhance the prestige of ARMOR at the various installations conducting Armor ROTC instruction, certificate awards were once again given to the outstanding senior cadet at each senior ROTC school. In addition to awarding the certificates, a package of books consisting of Guderian's *Panzer Leader*, Patton's *War As I Knew It*, and Robinett's *Preparation for Leadership in America* was given to each of the fifteen recipients.

### The Magazine

In consonance with the growth of the membership, ARMOR increased its pages this year. Five issues contained 64 pages and one had 80 pages.

The editorial policy continued to stress mobile warfare in all its aspects, the Armored Division, the mounted soldier, and the apprising of all concerned of the necessity for a separate organization to represent this field to express its views through the pages of its magazine.

During the past year paid subscriptions increased approximately 850 net—going well over 6000 paid copies



per issue for the first time since the conclusion of World War II.

Any of the six issues throughout the year is representative in size, content, authorship, layout, and illustration. A minimum of 64 pages is presently established.

#### *The Book Department*

Book Department receipts were approximately \$450.00 less than in 1952. The margin of profit resulting from book sales helps to defray costs of publishing the magazine.

Top selling book of the year was *Panzer Leader*. *The Story of the U. S. Cavalry* and *The Rommel Papers* were close behind. The next two books were *Von Rundstedt* and *Tactical Problems for Armored Units*.

Binders for ARMOR were stocked and proved to be a big attraction. This establishes the long-range value of ARMOR as a permanent contribution to Armor officers and units rather than a magazine that is read and discarded.

Although not our main source of revenue, purchasing of books by members and their families should be encouraged. Those selected for advertisement in the magazine are picked to assist the military professional. However, it must be pointed out that any book desired regardless of its classification may be ordered and supplied where possible.

#### SUMMARY

These highlights concerning all phases of activity lead us to the conclusion that the Armor Association is continuing on a sound professional basis. Its growth since the low ebb of 1947, although not astronomical, is steady. The gap between Armor branch membership and Armor Association membership is closing but we believe not fast enough. If all members would make a concerted effort to publicize the aims of the Association and induce joining our professional ranks by all Armor officers regardless of component, we could increase our efforts to advance in the field of mobile warfare.

## THE NEW COUNCIL

*The newly elected Council of the Armor Association represents a wealth of experience in the mobile field from the days of World War I up to and including present-day vanguards in our overseas stations. Put them all together and we have a cross section of our branch to serve you and represent your interests in the guidance of an organization vitally concerned with the defense of our nation.—THE EDITOR.*

#### *Honorary President*

Maj. Gen. Guy V. Henry

#### *President*

Maj. Gen. John H. Collier

#### *Honorary Vice-Presidents*

General Jacob L. Devers  
Lt. Gen. Edward H. Brooks  
Lt. Gen. Willis D. Crittenberger  
Lt. Gen. Geoffrey Keyes  
Maj. Gen. Ernest N. Harmon

#### *Vice-Presidents*

Maj. Gen. Hobart R. Gay  
Col. Walter J. Easton  
Col. Herbert H. Frost

#### *Secretary-Treasurer*

Maj. William H. Zierdt, Jr.

#### *Council Advisory Board (Europe)*

Maj. Gen. Leander L. Doan (Chairman)  
Brig. Gen. Hamilton H. Howze  
Col. Charles E. Brown  
Col. Raymond W. Curtis  
Col. H. C. Davall  
Col. Joseph C. Felber  
Col. J. C. F. Tillson III  
Lt. Col. Fred O. Jackson  
Lt. Col. Harry W. McClellan  
Lt. Col. William H. Patterson  
Lt. Col. Rollin T. Steinmetz

#### *Executive Council*

Lt. Gen. Williston B. Palmer  
Lt. Gen. I. D. White  
Maj. Gen. William S. Biddle  
Maj. Gen. Albert S. Johnson  
Maj. Gen. Donald W. McGowan  
Maj. Gen. George W. Read, Jr.  
Brig. Gen. Henry Cabot Lodge, Jr.  
Brig. Gen. Paul M. Robinett  
Brig. Gen. Harry Semmes  
Col. Paul A. Disney  
Col. Welborn G. Dolvin  
Col. Briard P. Johnson  
Col. Harry W. Johnson  
Col. Robert G. Lowe  
Col. James H. Polk  
Lt. Col. Evan Jones  
Lt. Col. George M. Seignious  
Lt. Col. William Tuck

#### *Council Advisory Board (Far East)*

Lt. Gen. Bruce C. Clarke (Chairman)  
Maj. Gen. Halley G. Maddox  
Maj. Gen. John C. Macdonald  
Brig. Gen. William J. Bradley  
Brig. Gen. Ralph J. Butchers  
Col. Creighton W. Abrams  
Col. James D. Alger





U.S. Army

# The Principal Address

by General Charles L. Bolte

**I**T is always refreshing and invigorating when it is possible for me to get away from my desk in Washington and see the splendid accomplishments of you who bear so much of the responsibility for training and leading our Army.

In particular, it is a pleasure to be here at the home of one of our great combat arms—the Armor. I have always admired the *esprit de corps* which is so marked a characteristic of our armored units—a characteristic stemming from their distinguished record in the past and from the prospect of a great future, and maintained by outstanding leadership and intensive training.

\* \* \*

Today, I want to speak about the Army as a necessary partner in defense. This may seem a large and perhaps an unnecessary topic in view of the fact that in every war our Nation has ever fought the Army has been in the forefront of battle and has been the indispensable instrument of victory. You, in particular, through your experience and knowledge, have a realistic insight into the grim realities of war and a clear understanding of the necessity for the Army.

I wish, however, that your knowledge were more widely disseminated among those outside the Army. The people of the United States, who in the final analysis determine the composition of our Armed Forces, are intensely interested in national security and how best to achieve it. But the advent of new and terrible weapons of destruction has injected an element of confusion into the accepted concepts of warfare, and people are eager for enlightenment, for indeed military security is one of the most important subjects of the day. The role of the Army, as of all the Services, is being re-examined and re-evaluated, and it is only proper that this should be so. I think it is equally proper and I know it is very important that the facts about the Army should be made available.

Because there are millions of veterans in our population who have experienced war as it actually is, the average citizen knows a great deal about the Army and is aware of its many contributions to our defense. On the other hand, there are many voices raised in chorus to say that the Army is outmoded, that “masses of men” will never again engage in ground combat, and that modern weapons have invalidated the concept of ground combat.

This seed falls on fertile ground, for there is deep in the heart of the American people—in all of us, soldier and civilian alike—an abhorrence of casualties incurred in ground fighting. As a result, there is an ardent desire for some cheap and easy method of fighting wars, a yearning to rely on some magic weapon that will be an absolute deterrent to war or an absolute weapon of victory if war should occur.

I will quote you a newspaper article which I read last week. This is an extreme example of a current trend but it illustrates what I mean.

The article quotes an anonymous source in the Pentagon who says:

“The H-bomb has generally been conceived as a strategic weapon against industries and cities. But it’s much more suitable, in fact, it’s perfect against a deployed force because of its vast area impact, let’s say 100 square miles. H-bombs can cripple an Army massed for a breakthrough.”

The conclusion is inevitable from this type of reasoning and the conclusion is stated in the article:

“Now we don’t need any large land army to stop the Russians. Some planners think we don’t need any army at all.”

Were this an isolated example, I would not discuss it with you today, but such ideas are so widespread as to cause serious concern among those charged with responsibility for a sound national defense structure because they can seriously weaken our national defense, if allowed to go unchallenged, and because our Army is an essential



part of that defense, the importance of the Army should be emphasized.

The evil that could be accomplished by the dissemination of false ideas far transcends any effects they might have on the size of the Army or upon the future of the men in the Army. Were there any sure guarantee that the magnificent service of you and your fellow soldiers throughout the Army were unnecessary, I am sure that you would all breathe a collective sigh of relief and return to more peaceful and financially rewarding pursuits in other lines of endeavor. The great danger in the line of reasoning I have illustrated and others similar to it is the grave effect it could have upon the security of our Nation which we in the Armed Forces are pledged to safeguard.

I want to assure you that I know of no responsible official in our national government who advocates the elimination of our Army or is unaware of its vital importance. The reduction in the size of our Army in no way indicates such an attitude or feeling on the part of our leaders and planners, but is governed by many other considerations which must be taken into account in the difficult task of providing an adequate defense. It is true that the complexity of our national defense problems is magnified by the advent of new weapons; and the influence of these weapons on strategy and tactics is a subject of constant study at every level in our Department of Defense.

However, our defense program has been, and I hope will continue to be based on strong sea, land, and air forces. The strength of one Service in proportion to another may change as world conditions change, and as the needs of the hour require, but each Service has an important role to perform, and each has missions assigned which it alone is capable of performing.

The basic function of the Army to be organized, trained, and equipped primarily for prompt and sustained combat incident to operations on land remains unchanged.

In the example I cited I do not need to point out some glaring omissions—such as the fate of the civilians in this 100 square mile area or the small number of troops that may be deployed in an area 10 miles square. I do want to point out the harmful effects such thinking—if it is allowed to go unchallenged—could have upon our national security and upon the morale of our Army.

If the false idea that armies could be disposed of by means of super weapons delivered by air were to gain a firm foothold in the minds of our people and our soldiers, it could create a feeling of fatalism and pessimism that could sap our strength to fight vigorously and determinedly. How could we instill in the soldier the need to train vigorously, to learn the difficult skills required in our modern Army, and to achieve the will to win at all costs, if he were to believe that he was going to be obliterated by super weapons despite all his courage, training, and skill?

And how can our people support the Army essential to their defense if they are deluded into thinking that it is all in vain and that the soldier cannot survive upon the battlefield?

It is well for us to emphasize both to the American people and to the individual soldier that the employment of these weapons has ramifications far beyond the purely

military, and that if employed, the sound principles which we teach in our military doctrine still apply. Each weapon has its limitations as well as its capabilities, and each weapon can be defended against. Dispersion, mobility, cover, and concealment are still adequate protection for the individual.

Because there is a sufficient prevalence of such loose thinking as I have mentioned, its harmful effects are so apparent as to suggest the obligation imposed on all of us to counteract it clearly, forthrightly, and vigorously. The magnificent support of our national defense effort by the American people and their determination to provide our Nation with the best defense possible, intensify our duty as soldiers to provide the information which is the essential requirement for sound thinking.

Because the American people have a right to expect of their Armed Forces the finest possible defense, they are entitled to this sound information upon which to base their judgment of the effectiveness of the defense establishment which they are supporting so well. It is in the best interest of the Nation that this be so, for in this age of total warfare, the Nation's security is every citizen's concern and every citizen's responsibility.

It should be perfectly clear that an enemy may strike in any one of three elements—through the air, by sea, or on the land—and our defenses must be erected accordingly. To be conclusive, any attack by land must and will be carried out basically by ground forces. Recent history has shown—and logic will sustain it—that the only way to defeat ground forces is by ground forces. The lesson of Korea should ever be before us. It was not until the Eighth Army—understrength and ill-equipped—was rushed into Korea that the communist armies were stopped and the profits of aggression were denied the enemy. Its success can be attributed in part to reliance on firepower rather than mere manpower.

To describe a modern Army as masses of men—armed with rifle and bayonet—who can be conveniently wiped out en masse by super weapons is utterly erroneous. The machine gun disposed of that type of Army many years ago. The whole concept of a modern Army is geared to speed, dispersion, and firepower. The individual fighting man, whether by foot or by tank, must still close with the enemy and destroy him, but he now has weapons of greater range and firepower to assist him, and he has better communications with which to call upon these weapons. The whole trend of our Army is towards smaller units of greater firepower and mobility, with a consequent capability to deploy over a wider area and to present a less profitable target. You may rest assured that your Army leaders are well aware of what new weapons can and cannot do and are acting accordingly. Our Army, far from being made obsolete by these weapons, is taking advantage of them to further strengthen our great capabilities.

Because the full potentialities of our global air power, like the global sea power, are impossible of achievement without many bases overseas, we would need ground forces if it were only to protect these bases. But, more than the protection of air and sea bases, the compelling necessity for effective defense of strategic land areas of the world vital to our national security points out the requirement for strong ground forces ready to repel aggres-



sion. Our Nation shares with our many valiant allies the obligation to provide those forces for our mutual protection.

I believe, therefore, that it is time for all of us to think about the role of the Army in the light of the many new developments taking place so rapidly. It may seem to you to be a very complex subject—which indeed it is. Yet the broad outlines of the Army's capabilities and limitations are well known to you, and the capabilities and limitations of the latest modern weapons—though to a large extent highly classified—can be evaluated from your own military knowledge and from the information about these weapons which has been made available. You are already studying the effects of tactical atomic weapons upon the tactics of Armor.

I want to assure you that the concept of mobile warfare is acquiring added importance as the effects of new weapons and their influence upon tactics and strategy are studied at higher levels. Armor will continue to be a major force upon the battlefield and the necessity to have mobile, hard hitting armored units immediately available for any emergency is of paramount importance. How these

new weapons will shape the organization and tactics of the Army as a whole is also a fruitful field for your study and consideration.

Of great importance, too, is the role that the Army plans as a partner in the Armed Forces team—the topic I am discussing here today. The Army has a proud record of achievement and faces a future which may place greater demands upon it than any emergency of the past. We in the Army must never forget our prime reason for being—victory in battle. We are preparing ourselves daily for any mission—no matter how dangerous or difficult—which the security of our Nation may demand. And have no doubt about it, when the chips are down and the Nation is in peril, the Army's tremendous capability will be as essential as in the past.

I think that we should proclaim this fact with clear and confident voices, so that the people will have no doubt or confusion concerning the role of their Army, and so that our soldiers will have no doubt about the essential need they fill. You and your comrades in all the other arms and services are best qualified to explain what the Army's capabilities are.

## ARMS AND MEN

# Trojan Horse On Tracks . . . by WALTER MILLIS

**T**HE "new weapons," about which so much has been heard recently, are by no means confined to nuclear bombs, guided missiles or jet airplanes.

At the annual conference of the Armor Association at Fort Knox last week there was a dramatic demonstration of one "new weapon" which has received almost no public notice—not that there is anything particularly secret about it but doubtless because of its homely and seemingly pedestrian nature.

Its name is the M75 armored personnel carrier (APC) and it looks like a big steel box mounted on tank treads. Last week at Fort Knox the demonstration maneuver was set up as an attack by a reinforced medium tank company, with air support, against an "enemy" hill position. The target was first marked by smoke shells from the armored artillery in the rear and a squadron of Air Force F-86 jets was called down in their long, beautiful and terrible dives to plaster it with bombs, rockets and the hideous napalm fires. Then, as the artillery pounded the position with high explosive and concealing white phosphorus, a dozen medium tanks crawled out of a swale in the ground and started in a long line up the slope, shooting as they went. Immediately behind them waddled a line of APCs, carrying a full infantry platoon inside.

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The exciting moment came when, in a slight fold halfway up, an advanced enemy infantry position was (theoretically) discovered. The attack commander called down "time fire" from the artillery—high explosive fragmentation shells fused to burst about 200 feet directly above the target—and as the black bursts with their viperish red flashes duly appeared above them, both tanks and APCs waddled on through the deadly rain of fragments to arrive together at the final objective. There the APCs flung open their steel rear doors, and the platoon of infantry poured out, untired and uninjured, to do the "mopping up" and to provide the tanks with the close-in protection from enemy survivors which they are not well able to provide themselves.

\* \* \*

Seldom before in peacetime training has it been possible to send live troops directly through the kind of actual fires which they would encounter in battle—a hint of the rather startling implications of these ugly, track-mounted boxes. While open-top armored carriers of various kinds have frequently been used, these are the first to have track-mounted mobility together with the protection of complete enclosure.

They did not arrive in Korea until just before the fighting ended, but were in time to prove their combat value. In the defense of the outpost position on "Porkchop" in July 1953, a platoon of these



In doing this there is no need to criticize any of the other branches of our Armed Forces. We in the Army fully appreciate the need for strong air power and sea power, and the Army as a whole has never questioned the need for a strong Navy and Air Force or belittled their great responsibilities and capabilities. We believe firmly in the concept of our Armed Forces as a united team working towards a common goal.

The Army will continue to be progressive and forward looking. We are taking advantage of every technical and scientific advance to enlarge our capabilities and increase our firepower. In our training and in our doctrine, we are gearing our thinking to the tests of the future, while retaining the valid principles which our extensive combat experience has demonstrated to be sound.

We should be neither pessimists nor alarmists, but confident. There is in the Army today a great reservoir of combat experience and a corps of combat-tested leaders of proved ability. Our Nation is the most advanced, industrially, scientifically, and politically, of any nation in the world, and our people are blessed with a high level of education, a strong spiritual and moral character, and a

deep love of country. Our people are equal to any challenge to their security, and their actions during the past decade and a half have shown their capacity and willingness to defend their beliefs at any cost. Our Army, which derives its strength and character from our people, reflects their virtues and their abilities.

I know from long experience that you men and your comrades throughout the Army all over the world are the finest soldiers and officers that any fighting force can boast. I know, too, that you not only have a glorious record behind you, but that you have a future of limitless service ahead of you.

You are not only a credit to the American people but you are the indispensable element of national security. The issue of victory or defeat still rests upon the bravery, devotion, and determination of the individual soldier.

I urge you, therefore, to think upon this subject I have discussed today, to be aware of the expanding capabilities of the Army in this modern age. Each of you should, in the interest of our Nation, reflect on this theme and carry it to the people with truth and logic and should inculcate it in your men at every opportunity.

*The following item appeared in the February 2, 1954 issue of the New York Herald Tribune and is reprinted with the kind permission of the author and that paper as a matter of interest to all Armor personnel.*

M75 carriers was used to run up supplies and reinforcements over a fireswept road, so deeply mired as to be otherwise impassable, and to take out casualties. Unprotected infantry could not have got near the place. And when the defense had served its purpose, the APCs evacuated the whole position, in daylight and under the guns of the enemy, without the Chinese knowing what was going on; in fact, they thought the position was being reinforced!

\* \* \*

The M75 APC (and an improved version has already been developed) is thus a new weapon of surprising potentialities. Armor officers believe that the APC is the answer to the greatest weakness of the War II armored division, which lay in the fact that while the tank must have the help of infantry for local defense and to overcome obstacles, it could not ordinarily bring its infantry along with it through the kind of fires which the tank itself was designed to withstand. The ability to take its infantry with it gives the armored division—in essence a massing of speed, shock and firepower *under protection*—a new tactical significance.

Here then is definitely a new weapon, even if the basic idea is as old as the Trojan Horse. (Not inappropriately, either, considering that the present armor branch is the immediate descendant of the cavalry.) The Army, still manifesting some slight evidences of shock under the impact of the drastic

reductions in manpower and money imposed on it by the "new look," argues that fully armored troops will at least be better protected against tactical atomic bombs and long-range rocket missiles than any other kind of ground force. It argues that if it really is the new doctrine to substitute machines for men, and mobility and firepower for mass, then there is no better instrument than the modern armored division with which to do so.

\* \* \*

The argument is a strong one, when applied to ground warfare; and unless and until we are really prepared to abandon ground defense (as well as the national objectives and strategic aims which are attainable only through having fighting men on the ground), in favor of the indiscriminate devastations of airborne and rocket warfare, it seems essential for the public to realize that there are new weapons on the ground as well as elsewhere. The Army is in fact planning to put its reduced appropriations into a very considerable increase in the proportion of armor and armored divisions to standard infantry within the establishment. Those who still think of ground war, as Senator Taft seems to have done, in Civil War terms of masses of cannon-fodder being flung murderously against bullets and bayonets, should realize that there have been developments here, too, and that they are deeply significant for sound military policy.



*Recently Mr. Robert T. Stevens, the Secretary of the Army, made an address at The Citadel, on the occasion of the inauguration of General Mark Clark as President of that institution. Some excerpts of his speech are quoted.*

Of the many thorny problems confronting us as we strive to deal realistically with the Soviet threat of aggression, one stands out in my mind as being of such fundamental importance that it cannot be too often or too strongly stressed. This is the problem of insuring the continuous development of the highest quality of military leadership. I consider it a matter of grave consequence, particularly in view of our normal dependence upon relatively small active forces which must be rapidly and enormously expanded in order to meet a war emergency.

Great leadership is a priceless military asset, and the lack of it can never be offset by numbers of men, by a preponderance of guns and tanks, of planes, bombs, ships or any other material things, no matter how good they may be, how modern, how powerful. No matter how large and well-equipped it may be, a military force which goes forth to battle without fine leadership—not only at the top but all down through the ranks—marches toward defeat and disaster.

We certainly have fine leaders today. Never before have we had available so many senior officers tempered in the fires of war, thoroughly versed by experience in the command of large bodies of men, and practiced in the solution of military problems of the first magnitude.

For more than a year now, as Secretary of the Army, I have worked in close association with a great many of these highly competent officers upon whose shoulders rests a major part of the burden of our national security. I have the most profound respect for their unalloyed patriotism, their zeal, their high character and intelligence, and their professional stature. In my visits to the Far East, to Europe, and to installations throughout the United States I have become acquainted with all our top commanders in the field, and I have brought back with me a firm belief in their great capacity and unsurpassed devotion to the Nation.

We are also fortunate in having the kind of enlisted men who make up the bulk of our Army. I have seen them under the stress of battle, I have seen them standing guard at far-flung outposts, and I have seen them undergoing their grueling training. I have talked to them and I have come to know them. And knowing them, I am resolved that they shall continue to have the finest possible leadership—they deserve no less.

The bravery and capability of the American soldier is written large on the pages of history. How often the words "valor above and beyond the call of duty" have been his epitaph!

This Army began with George Washington, and its fidelity and determination in the dark days of Valley Forge were all that kept the flickering spark of liberty alive. In truth it created the opportunity for the United States of America to exist as a free Nation, and to become a great Nation.

In less than two centuries a wilderness has been transformed into one of the greatest world powers in history. No element in American society has made a more valuable, more selfless, more consistently outstanding—and more generally unacknowledged—contribution to that development than the United States Army.

Its primary mission, of course, is to insure the military security of the United States, and the challenge of war has ever found it capable of almost incredible feats. Careful preparation and study by the Army's officers, despite decades of public neglect of the military, made possible the tremendous achievements of World War I. The United States Army successfully carried out a tremendous expansion in a few short months. It organized, trained, supported and took into combat a great military force which tipped the balance in favor of the Allied Powers and brought about the defeat of the German aggressor.

Similarly, in 1941, the skill and vigor of our Army officers, and their years of experience and study, enabled America to create in a relatively short time the greatest army in all history. That army proved its quality in North Africa and Italy, on the Normandy beaches, on the islands of the Pacific—in the tropics, in the desert, in the mountains, and the frozen Arctic.

And then Korea. Surely no army in history has fought more nobly under more trying conditions. It was outnumbered from the beginning, confronted by an enemy who inhumanly sacrificed his men by the thousands to overrun a single position, an enemy who tortured his prisoners, and who disdained the scruples of civilized nations, yet it threw back the aggressor and fought him to a standstill.

It fought nobly in spite of the fact that the Korean conflict was unique in our history. The cause was not solely national, but the cause of all free men. The issues were not as clear in the public mind as had been the case in other wars. Nevertheless, the United States Army successfully conducted its operations and produced the magnificent Eighth Army which has never been surpassed in its capacity to fight by any army in the history of the world.

In the light of this record, and the outstanding character of our professional military men, it is deplorable that the Army as a whole—more particularly its Officer Corps, and especially its senior officers—should too often be the target for irresponsible criticism.



The fundamental principle emphasized by President Eisenhower that "... professional military leaders must not be thrust into the political arena to become the prey of partisan politics" has too often been forgotten or flouted. There is a tendency to overlook the fact that the soldier is an integral part of the community and is entitled to the same guarantees and protected by the same Bill of Rights as every other American citizen. It is sometimes forgotten that it was the Army which played a major role in the foundation of this Nation and made possible the firm establishment of liberty, justice, and individual freedom. The Army has successfully defended those principles in every war, and I propose to defend it and its prestige and integrity.

Ours is a superbly trained Army, ready to fight on any terrain, under any circumstances whenever it may be called upon to do so. It is one of the toughest, most efficient, fastest moving armies ever known. Day by day it is becoming tougher and its striking power and mobility are becoming greater. Every activity that does not contribute to combat effectiveness is being eliminated. Although the fighting has ceased in Korea, the pace of training has not been slowed. New and improved weapons of unbelievable variety—both atomic and conventional—are giving our forces a punch which only a few years ago seemed beyond achievement. From bottom to top it is a hard-muscled, tough-minded Army, well trained and superbly led.

If I had to find a single word by which to characterize the officers of the United States Army, that word would be: Integrity—absolute, uncompromising integrity.

This includes both professional integrity and moral integrity. By professional integrity I mean unceasing striving to master one of the most complex, difficult, and demanding vocations which exist. By moral integrity I mean loyalty to the American people, to the Government, to constituted civilian authority, and to the principles of truth, justice, and liberty upon which our government is based. I mean as true loyalty to subordinates as to superiors—loyalty up, and loyalty down.

One often hears disparaging references to the so-called "military mind." I have heard apologists deny that there is a military mind. They are wrong. Of course there is a military mind, just as there is a legal mind and a scientific mind and an academic mind. It would be a sad commentary on the Army as an institution if it made no indelible imprint upon its members after years of training and service.

I want to tell you something about the military mind. It is a mind which seeks to anticipate and prepare for every eventuality. It is a mind capable of dealing brilliantly with the special problems which concern the military security of the Nation.

It is a mind conditioned by courage, by a tradition of selfless service, by the highest standards of character. It is, in short, a mind which measures every action by the yardstick of "Duty—Honor—Country." I fervently pray that our Nation will continue to develop such minds.

When I hear distinguished officers slurringly referred to as "the brass" it disturbs me greatly. I heartily endorse the sentiment of that eminent American, Bernard Baruch, who said: "In my experience, 'the brass' is all pure gold."

Men such as those who lead our Army today cannot and will not let America down in any respect—of that I am certain. The perpetuation of this hard core of able, dedicated officers and non-commissioned officers is of especially vital concern to the Nation as dangers and uncertainties beset us on every hand. The day that America allows this breed of men to die out through indifference, thoughtlessness, or neglect, that day America signs her own death warrant.

It is of the utmost importance that everything possible be done to create an atmosphere conducive to the maintenance of a career military service, clothed in dignity and honor, which will be attractive to the highest type of young American. Nothing is more detrimental to the Service than a feeling among its personnel that they are held in low esteem by their fellow citizens. Any action which fosters such a conclusion strikes at the taproots of our security.

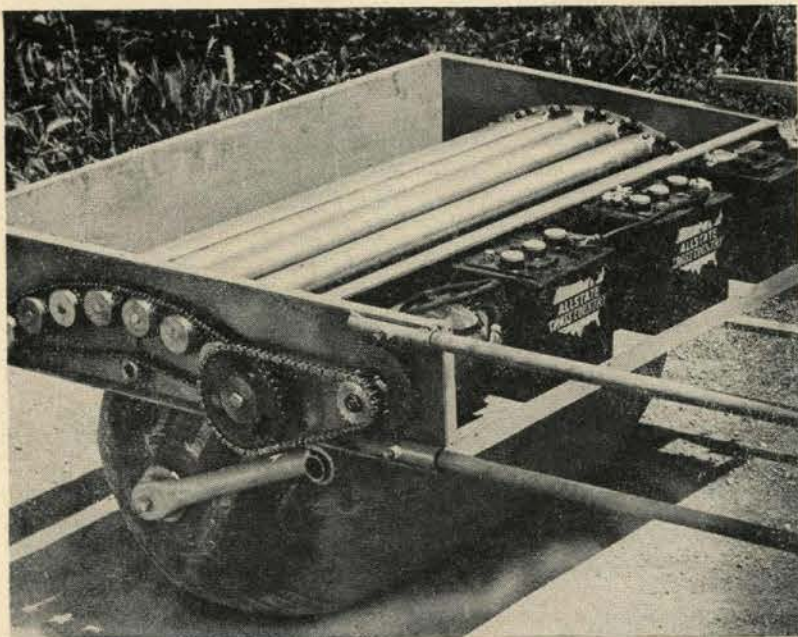
Unless the trend of recent years is reversed, and a climate created in which the development of military leadership of the highest type is encouraged, there will be little hope that in the future America will possess the kind of military leaders we are fortunate enough to have today and to have had in the past. The Secretary of Defense and the other officials of the Defense Department, as well as the members of Congress, are giving the matter very serious consideration at the present time. However, it is not their responsibility alone. It is the responsibility of every American.

A very great and particular responsibility for our future security rests upon those charged with the training and indoctrination of tomorrow's leaders. To men of vision, of ability, and of high purpose it represents a challenging opportunity for service to America.

*The qualities of leadership, loyalty, and integrity stem from the top. It is up to each one of us, regardless of position, to pass these notable qualities on in all directions, be it up, down, or laterally.*

*The Editor*





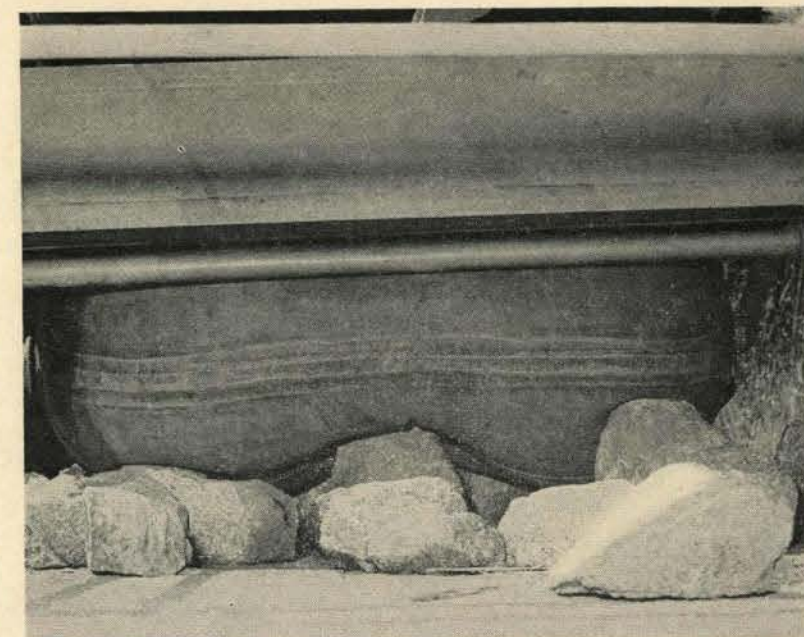
A view of the gear arrangement in the initial attempt at applying power to the "Floton" which results in the roadless transport, the "Rolligon."

A recent invention by Mr. William H. Albee of California—the Rolligon—is already being hailed by the Press as "the greatest ground transportation invention since the wheel."

Like most inventions, this latest discovery is simplicity itself. The Rolligon is a nonstretchable, sausage-shaped, nylon tube covered with neoprene, a synthetic rubber and inflated with five to ten pounds of air. In its powered adaptation the weight of the vehicle rests on the top of four Rolligons which replace the wheels of a conventional vehicle. Power is applied to each Rolligon through a series of chain-driven gears moving eight rollers which press directly against the top of the Rolligon. There is no hub or axle. These counterrotating rollers, acting directly against the bag, turn the Rolligon forward. The air inside equalizes and distributes the weight of the vehicle. Each Rolligon lays a soft cushion of 500 square inches on the ground surface resulting in such even distribution of weight that there are only two pounds per square inch of ground pressure, about the same as your hand pressing gently on the top of your desk. To demonstrate its weight distributing qualities Albee has been a willing "victim," letting the vehicle roll over him for the pleasure of *LIFE* photographers. He describes the sensation as, "like a good massage." Compare this with the 13.5 pounds per square inch of a conventional tank (M46) and the remarkable capabilities of the Rolligon become obvious. While the load ratio of a conventional carrier is normally less than half its weight, in the Rolligon this ratio can be reversed, the carrier transporting twice its weight with ease.

The Rolligon is not just an enlarged low pressure tire. It works on different principles: (1) The load is carried by the top surface of the Rolligon, not by a system of hub and axle. (2) The weight is distributed over a greater area and is not focussed in one spot as with a conventional tire. (3) Power is applied through its eight rollers to the surface of the Rolligon and not to an axle, thus eliminating springs, hub, axle, and wheel.

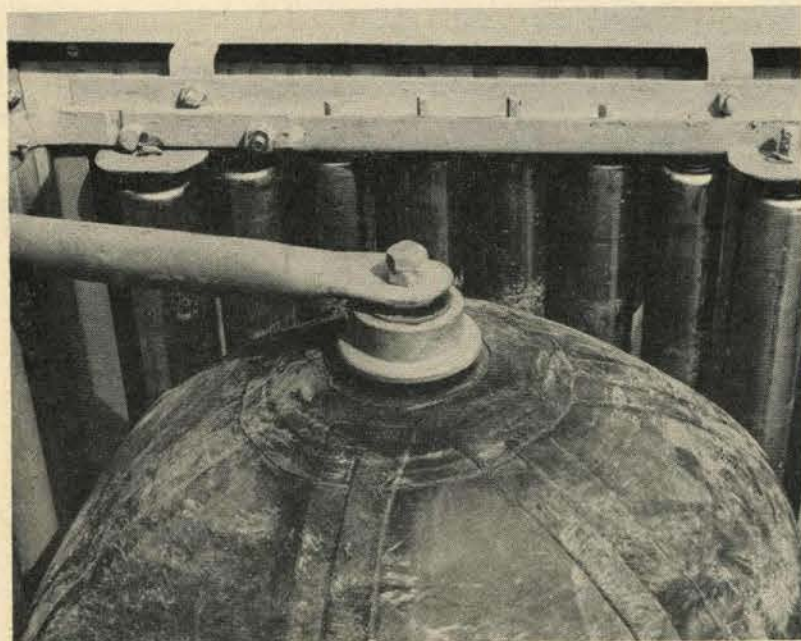
The vehicle has been put through its paces to determine hill climbing ability, hillside stability and



The nylon bag offers little resistance to obstacles—it envelops them—laying a cushion of 500 square inches, with pressure of 1 lb. per square inch.

GARDED

## THE ROLLIGON: A REVOLUTIONARY DEVELOPMENT IN ROADLESS TRANSPORT



A view looking up at the steel rollers through which power is transferred to the individual rolligons. There is very little loss of power in the process.

pulling power. These preliminary tests, though producing no conclusive figures, have indicated that loads of many tons may be transported with ground bearing pressures as low as one pound per square inch. Vehicles equipped with improved Rolligons will develop more than half their weight in draw-bar pull.

The Rolligon fulfills a critical military need. As someone put it, "Ever since the motor vehicle replaced the horse and the escort wagon drawn by four mules, there has been a conflict over whether we should concentrate on getting a better horse for tactical maneuver or a bigger wagon for transporting troops and supplies." In the Rolligon we can have a better horse and larger payloads.

Increasingly, since World War II, we have come to realize that we can no longer submit to the arbitrary restrictions of the existing road nets. Besides, the roads are often destroyed by the great power of our new weapons. We have slowly begun to see that the greater restriction to truly mobile operations is not in our combat elements but in the supply and transport vehicles mounted only on wheels.

The inventor fully realizes that warfare makes use of all the technological developments of civilization of the time, and he is not unaware of the import of his work to National Defense. This invention is not applicable to any single branch or arm of Service. It is so basic and fundamental a development as to be applicable to them all. Now we have the means of providing the trafficability in our transport vehicles which we have so long demanded.

In the past, armies have literally made their own mud. Tanks, trucks and heavy transporters have, by incessant digging and pounding, destroyed the roadbed and created the sea of slush in which we often floundered. With the Rolligon, paradoxical as it may seem, we would actually improve our flotation and increase the bearing qualities of the mud at the same time.—MAJOR L. M. PROSSER and SGT. JAMES D. MERRILL.

Photos courtesy of the authors



The "Rolligon" will negotiate terrain where a man on foot would bog down to his armpits, and it actually improves the ground over which it travels.



CARDED

# NOTES ON THE TRAINING OF AN ARMORED DIVISION

by

BRIGADIER GENERAL HAMILTON H. HOWZE

## FIRE SUPPORT TECHNIQUES

**T**HE first article of this series, appearing in the November-December issue of *ARMOR*, dealt in some detail with Battle Drill, a drill in which competence is required of all units of the 2d Armored Division. The second installment dealt with a number of training procedures in effect in the division. This article, the third, will set forth certain techniques of fire support as taught in the 2d Armored; techniques which we apply in training and would expect to use in battle.

An armored attack normally includes in its assault element tanks and armored infantry, the latter moving mounted to the extent that the terrain permits. The effectiveness of the attack is largely dependent on the assistance rendered the assaulting units by the direct and indirect fire support elements.

Figure 1 shows the general rela-

tionship of the several elements of an armored attack. Intermediate Objectives 1, 2, and 3 having been recently taken from the enemy, part or all of the units that seized them take fire positions thereon to support the assault of another unit on Objective 4. (Note that supporting fires include 5 and 6 as target areas, 5 and 6 being positions from which the enemy could assist by fire the defense of Objective 4.)

In this example the friendly units executing direct fire from Objectives 1 and 2 can properly be designated the "base of fire," while the fire (probably overhead) delivered from 3 might be called "overwatching fire." Actually armored units are prone to call the fires delivered from all three positions "overwatching," the term being considered descriptive of the action of the firing unit—an action which should be characterized by an alert concern over the fortunes of the assaulting tanks. It is much the same protective attitude with which a hen attends to the security of her chicks.

### The Nature of Overwatching Fire

When tanks are put in position to overwatch an attack by other tanks, it is the function of the overwatching

unit to establish what might be called "mastery-by-fire" of the area of the assault: this includes the area between the line of departure and the objective, the objective itself, and other areas from which the enemy can shoot at the assaulting tanks. The tanks in this overwatching position, instead of wishing to avoid retaliatory antitank fire, actually accomplish their mission in part by drawing that fire and destroying the guns which execute it. The tanks have a great advantage over the gun in this circumstance, because of superior numbers, greater protection, and better coordination; it is therefore *not* acceptable practice to have each tank fire only a few shots and then retire behind the crest to take another position. The object of the action is to get the assaulting tanks onto the objective; tanks in an overwatching position are in far better position to swap blows with enemy antitank weapons than are the assaulting tanks. It is this overwatching fire that is frequently the determining factor in the success of the attack—overwatching fire has devastating effect on the defending enemy.

In the course of training in the attack it must be very strongly im-

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*ARMOR*—March-April, 1954



pressed on combat personnel that in battle the enemy does not paint himself white and stand up where one can see him. A terrain feature held by the enemy appears to be *perfectly empty*.<sup>1</sup>

Although the objective appears quite empty, it is nevertheless vital to place effective fire on it—only by using our firepower will we be able to win the battle. But tanks in overwatching position must fire not only on visible enemy (for none are visible, initially) but into the edges of woods, broken ground, clumps of bushes and high crops, and similar areas likely to be used by the enemy to conceal his men and weapons.

Once overwatching tanks have worked over the area, the attack is launched by the assault elements and carried forward with speed. With the benefit of overwatching fire, it should not normally be necessary for the assaulting tanks to halt at all. Moving tanks use their machine guns to spray the ground—however inaccurate, it is

very effective in making people keep their heads down. The whole effect is one of *great violence*. Artillery is used liberally, its fire being closely followed by rapidly moving tanks supported also by the tanks firing from overwatching positions. All elements combine to shock and demoralize the enemy and to knock him off balance and keep him off balance until assault elements can get to him and squash him. To do this our troops must shoot fast and accurately, and *move*.

There follows first a description of the technique of delivering overwatching fire by tanks; then a description of the technique of utilizing artillery fire in support of armor—from the point of view of the tanker and armored infantryman, omitting altogether the intricacies of the artillery firing procedures; we will then conclude with a brief statement of how the direct ground fire of AAA automatic weapons may be used to support armored elements.

## The Technique of Overwatching Fire by Tanks

The reader will please refer to the sketch shown in *Figure 2*. It is assumed that two platoons of a tank company, under the company commander, are assigned to deliver overwatching fire on the objective<sup>2</sup> (the terrain indicated by the sketch) while tanks of another company assault it. It would be entirely proper to assign to a single tank platoon the whole overwatching mission; two platoons are assumed merely to indicate one of the steps in the procedure. If only a single platoon has the job, the actions of the tank company commander (below) are taken by the platoon leader.

It is further assumed that the two platoons are already in the area from which they will deliver the overwatching fire; the company commander and platoon leaders, either in their tanks or dismounted under cover, are where they can see the objective. Other tanks are in hull-down defensive positions—not yet in position to deliver the overwatching fire, but of course in position to observe and to take care of themselves.

The company commander first has a look at the objective and makes a little informal estimate of the job. He sees on the objective a number of places where the enemy might well emplace antitank guns. To his eye, most of the objects (woods, brush patches, wheat fields, houses) are thus suspect and therefore suitable targets. NOT included as suitable spots for antitank guns are the crossroads at A, the road junction at B, and the lone tree at C. These may be easy targets to hit, but it is silly to waste ammunition on them.

The company commander then decides how far *down* the hill he wants his guns to be able to fire, and an-

<sup>1</sup>It is therefore false practice to set up exercises where silhouette targets are initially visible, although it is permissible to set up such targets on reverse slopes of the objective to represent enemy soldiers or vehicles withdrawing after assaulting tanks have forced them from their positions. Also, AT guns should be represented *not* by easily discernible objects but by carefully camouflaged objects plus a flash representing fire. AT guns may be positioned in any location where it would be physically possible to place the weapon.

<sup>2</sup>The system of fire coverage described herein may also be placed on a terrain feature *not* to be overrun by assault elements as a matter of flank protection to those elements. In this case, however, the amount of fire laid down is usually somewhat smaller.

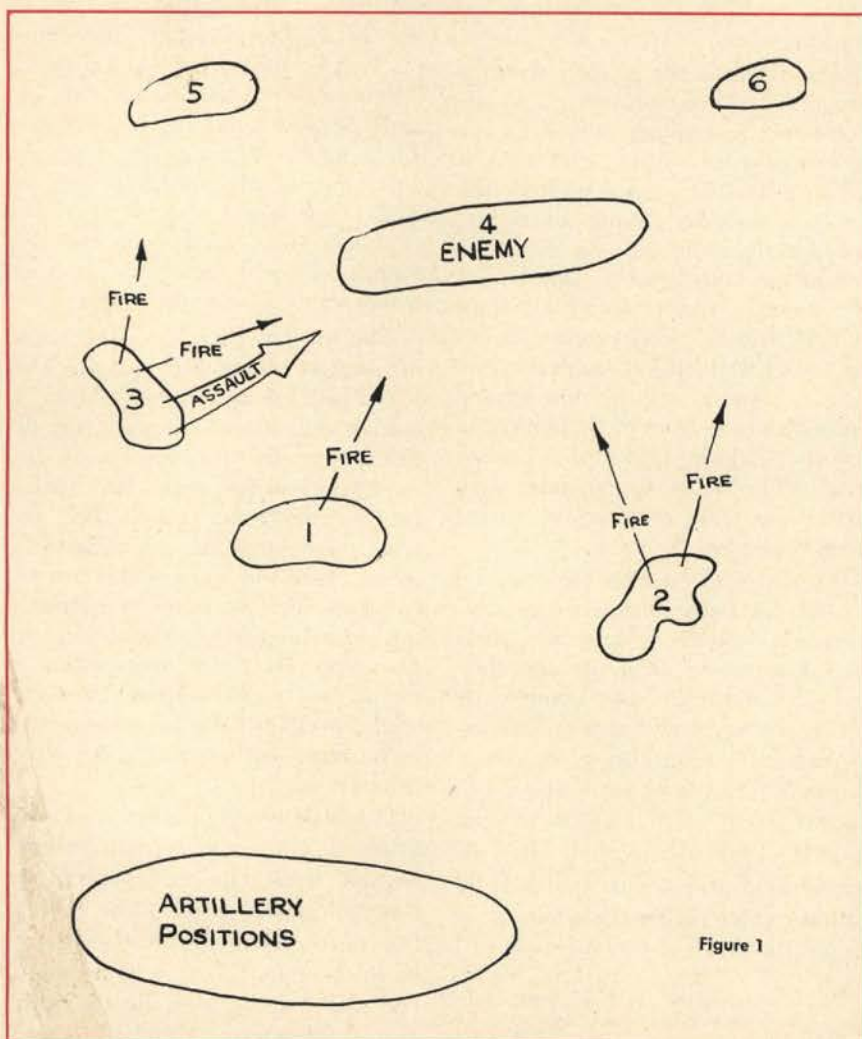
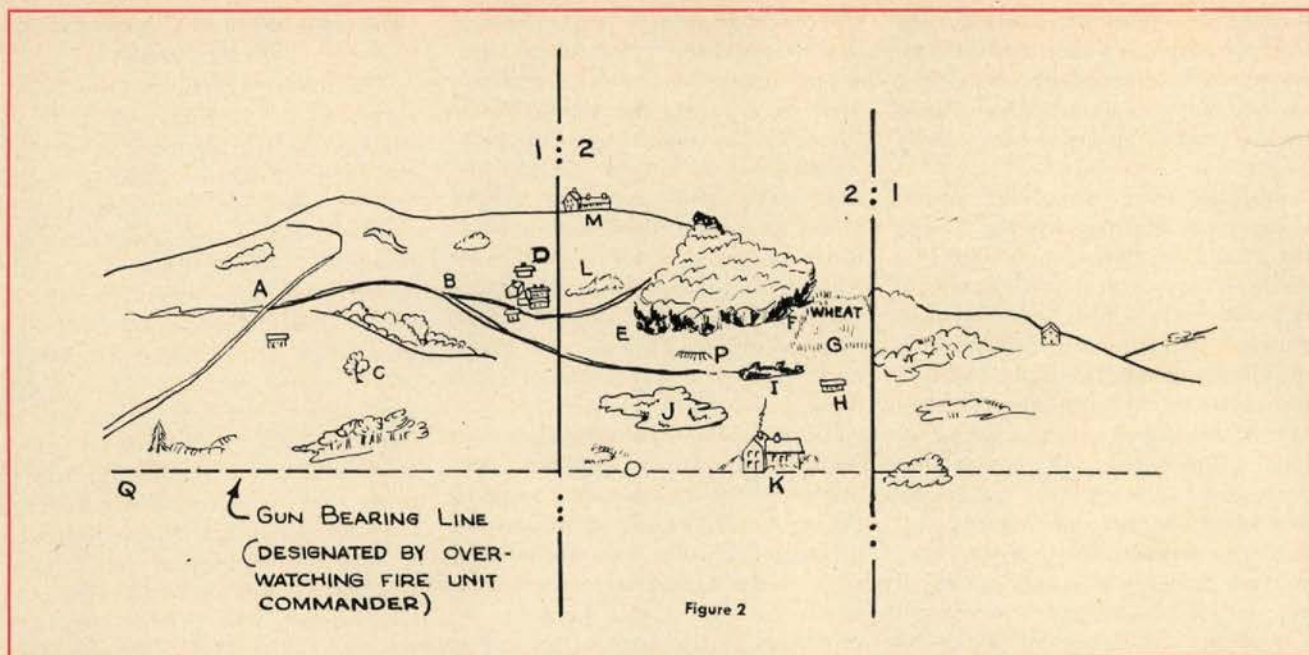


Figure 1





nounces it at once; in this case he commands, "Gun Bearing Line: Left Front, fresh diggings near lone pine tree (Q in the sketch)—Right Front, large green house (K in the sketch)."

#### The Assignment of Sectors

Next, the company commander divides the objective roughly in half, taking the group of houses at D as the dividing line. He commands, "First Platoon, Left Sector, from the group of houses (inclusive) to the left; Second Platoon, Right Sector, from the group of houses (exclusive) to the right."

Having received a sector, the second platoon leader makes a quick estimate: first (we'll assume), he has 4 tanks available, having lost one from his section previously; second, his sector has a fairly large number of possible antitank gun positions requiring attention. He returns to the platoon (if not there) and brings his platoon sergeant—in or out of his tank—up to where he can see the objective.

The platoon leader subdivides his sector, using the right edge of the wheat field as the boundary. He announces the Gun Bearing Line, and assigns to his second section (two tanks) the left sector and to his first section (which, in addition to the platoon leader's tank, now consists of only one tank) the right sector. His own tank he does not assign a job, intending to observe and direct the fire of the other tank of his section

as well as exercising general control of the fire of the entire platoon. However, he is always ready and willing to engage with his gun any target which he feels is in special need of working over.

The tanks of the platoon are then brought up into position, normally hull-down and taking due advantage of concealment. When each tank is in an estimated proper position the tank commander, using overriding controls, lays the gun on some object at the Gun Bearing Line within the section's sector, and commands, "Check Mask!"<sup>3</sup> The gunner opens his breech and looks through the bore to see if a round will clear the ground immediately in front of the tank, and reports, "Mask OK!" or "Cannot Fire!" The Tank Commander then moves the tank, if necessary, to get mask clearance.

The second section commander should not assign sectors for his two tanks; he merely assigns the other tank a target to shoot up, and then indicates one to his own gunner. By successive target designations and engagements he covers his sector. About five rounds would be put in the woods edge from E to F. Three to four rounds would be placed into the wheat field at G. The house at H would receive perhaps two rounds; so would the brush at I. The brush at J

<sup>3</sup>In many cases the check of mask clearance is obviously unnecessary and need not be done. But in case of doubt—check.

would probably merit three or four rounds and the house at K three or four more. The fresh diggings at O and P naturally come in for attention with two or three rounds each. Moving to a greater range, the brush patch at L and the large house on the hilltop at M would receive two and perhaps four rounds, respectively. These figures do not mean rounds per tank, but merely rounds per target. The range finder should practically eliminate the need for adjusting rounds. Fuze delay should be used when appropriate to the target.

The fire has been described above in terms of 90mm HE rounds. This is the best fire to use, and should be used if the situation permits; the decision depends upon how much ammunition remains in the tanks, what future employment may be, and what prospects are for replenishment. Tanks may, under certain circumstances, have extra ammunition stacked behind their overwatching fire positions. If 90mm ammunition is temporarily a critical item, then part of the overwatching fire would have to be done with coaxial (not bow) machine guns.

While delivering the fire, tank commanders must not become so concerned with the engagement of assigned targets as not to be alive to the source of enemy fire should that be forthcoming. Enemy guns identified short of the Gun Bearing Line should, of course, also be engaged.



Each tank commander must scan his sector carefully with field glasses, looking for the telltale flash and smoke of an enemy antitank gun or tank. For by our direct fire, the enemy is not only subjected to punishment and probable casualties—he is also tempted to retaliate by fire himself, and it is very desirable that he thus disclose his positions. Since our tanks have been firing in the vicinity, it will normally be possible for a tank commander to announce to his gunner the approximate range to the enemy gun without having to use the range finder—thus saving time. *If our tank commanders and gunners are on the job, an enemy gun opening on us in this situation should get off just ONE shot before it is smothered by fire and the crew killed or scattered.*

### **In Support of Moving Assault Elements**

The foregoing might be considered the preparatory phase, conducted slowly and methodically while the assaulting elements are forming up to jump off. When the assault elements do move forward, the position is again worked over, and again the overwatching tanks make special effort to discover and take under instant fire enemy guns which open on them or on the assault elements. This requires a high state of alertness, constant careful scanning through the field glasses and sighting equipment, and first class gunnery.

Overwatching fire may continue, under close control of the overwatching fire unit commander, even after the assaulting tanks commence their climb onto the objective. Naturally great care is taken to keep the fire falling in front of the advancing tanks, or on their flanks, but not directly on them or in their rear. The assault unit commander may request lifting of the fire at any time, either by radio or by prearranged pyrotechnic signal. The coordination of the two efforts will normally be vested in the battalion commander or other senior officer in command on the scene.

The use of WP to supplement HE will often be desirable, but it should be used *only* on the initiative of the overwatching unit commander and with the consent of the assaulting unit commander. WP is effective against troops and gun crews without overhead cover, and of course can be

used to block the enemy's vision at critical moments in the attack. But one should check the wind—it is not desirable for the smoke to blow onto our advancing tanks!

We think it behooves all tank elements to master a workable system of overwatching fire support. In order to learn it, practice must be had. It is the sort of practice which may be partially accomplished without the use of any tanks at all. In later phases tanks are necessary; tanks may be taken out even onto civilian terrain, via routes which will not cause damage to property, and emplaced in a fashion to overlook wide stretches of country, features of which will be designated one by one as objectives for overwatching fire practice, dry run.

### **UTILIZATION OF ARTILLERY IN SUPPORT OF ARMOR**

Artillery fire in support of tanks is normally indirect observed fire. The manner of handling these fires is *not* the same as for the support of infantry advancing dismounted, for much greater flexibility is needed. It is of great significance that tanks and armored infantry are especially capable of taking advantage of the effect of artillery, granting their ability to control it properly.

Proper utilization of artillery fire is a prerequisite to the success of almost every combat mission. *Inadequate* use of artillery will practically assure defeat. Therefore as a matter of training in the Second Armored Division, all tactical problems of a company and above, and all except the most elemental platoon problems, put great stress on the use of artillery.

Outlined herewith is the system established as standard for the 2d Armored; every offensive or delaying action (other than very hasty action taken in an emergency, when time, in some cases, *may* preclude) has artillery support planned and effected according to these general principles. (Omitted from consideration is that part of the overall artillery fire support plan which deals with counter battery fires and long range interdiction fires. These are fires with which the assault unit commander has no direct concern, although they are of course of material assistance to him.)

The basic combat unit of the armored division is the reinforced bat-

talion, less one or more of its organic companies. It is therefore generally on the battalion level that the details of artillery fire support are worked out. Tank and infantry companies and platoons and their attached forward observers operate within the battalion scheme of fire support, which must be made known to them.

Artillery is able to exercise a strong influence on the battlefield by its ability to place quickly large volumes of fire on widely separated areas of the front line. Each area or target fired upon, and each area designated for future fires is numbered and recorded upon observers' maps and artillery battalion firing charts as concentrations. Concentrations should be reckoned and plotted as being about 200 yards in diameter. All concentrations are considered as battery concentrations but may be fired upon by a platoon of three guns, or by several battalions, depending upon the importance of the target and the availability of artillery at the time.

After concentrations are selected and numbered, all concentrations falling within a tactical locality are formed into lettered "groups." Too many concentrations should not be placed in a group. The fact that concentrations are grouped does *not* preclude firing on an individual concentration within a group. Requests for artillery fire are normally made with reference to a concentration or by coordinates; however, fire may be called for by Group as part of a prearranged artillery plan for both offense and defense.

Shown at Figure 3 is the proper means of disseminating this information—all our artillery officers are required to be prepared to put out data in this fashion. If time is pressing, dissemination must be simplified, but normally the platoon leaders and platoon sergeants should have the location of groups and of key concentrations on their maps. (These should be put directly on the map, neatly, with pencil. Grease pencil on acetate is unsatisfactory—it rubs off, and obscures the map.)

### **Artillery Support of Offensive Action**

The first requirement is planning. Prior to an attack the scheme of artillery fire support is worked out in the following steps, in sequence:



*Step 1.* The assault unit commander (tank or armored infantry) "defends" the objective against his own attack: i.e., from the enemy's point of view he arrives at a logical system of defense—where enemy forces and weapons would be employed.

*Step 2.* The assault unit commander works out a scheme of maneuver: objective, intermediate objectives, routes of advance, and overwatching fire positions.

*Step 3.* Artillery concentrations are located by the assault unit commander and the artillery liaison officer (or forward observer) working together. These concentrations should cover known positions, *plus* logical (but not proven) positions for enemy troops, selected as per Step 1.

*Step 4.* Concentrations are grouped as appropriate and a timetable for their firing is prepared if desired.

*Step 5.* The fire support plan thus worked out is made known, down to platoons.

*Step 6.* A proper system of calling for fire is established. In the actual

attack the FO controls the artillery fire—he pulls the strings, according to the fire plan. By accompanying the assaulting troops (not in the first wave—his post should be with the company commander) he keeps acutely aware of the situation, and particularly of the location of any enemy fire that may be damaging the assault elements. It is his important responsibility to keep in touch, by radio, not only with the company commander, but with the platoons. A platoon leader's call for artillery support should receive *instant* attention.

### Example

This scheme of fire support is illustrated by the sketch in Figure 4. The unit is taken as the reinforced battalion, supported by one battalion of artillery whose fires may well be reinforced by the fires of one or more additional battalions. (Actually, this is no more than normal support. In combat, not many battalions of an armored division will be making an attack simultaneously, and artillery fire is very maneuverable. In World

War II a battalion attack was sometimes supported by eight or ten artillery battalions where the situation warranted.)

The battalion commander plans his scheme of maneuver. He intends to build up an overwatching fire support element on the line of departure; to attack with one element by route "X" to seize Objective 1 and establish a new base of fire thereon; to attack with another element via route "Y" to seize Objective 2; to consolidate Objective 2 and organize to meet a counterattack.

### Selection of Concentrations

Concentrations on Objective 1 (131, 132, 133) and Objective 2 (134 through 140) are based on known and possible enemy positions. Concentrations 108, 109, and 110 on the left flank, and 111-116 and 141 on the right flank, are also possible enemy positions which might interfere seriously with the success of the attack. Beyond Objective 2, concentrations 117, 118 and 119 are on routes of enemy withdrawal, or where beaten and retreating individuals might go. 120 is the location of a possible enemy fire position. 121 is a blocking concentration which may be used to hinder enemy fire (by smoke, dust, and blast) coming from the lane between the trees leading to the east. 142 is merely a check concentration as a basis for adjustment against targets of opportunity out in the flat. 143 and 144 may be useful against an enemy counterattack.

Concentrations selected are *grouped* according to how they will be used in the support of the attack. See Sketch.

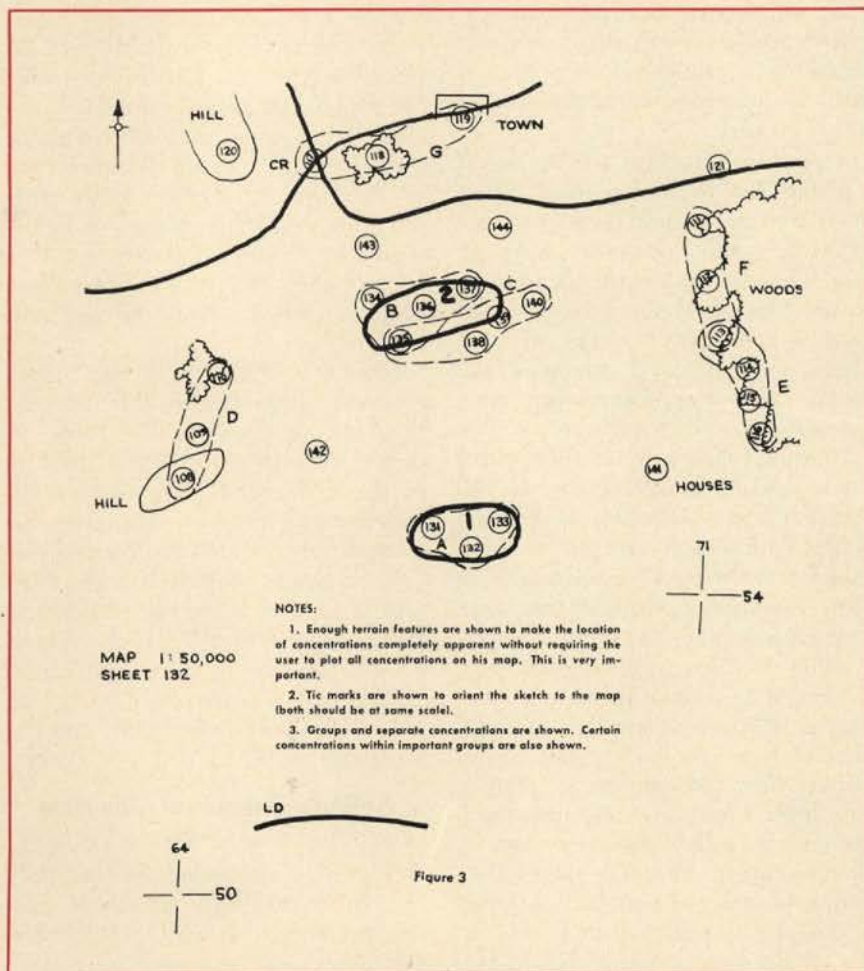
### Execution

The following fires would be brought down, according to plan (H Hour is jump-off time):

1. From H minus 3 to H Hour, preparatory fire, 3 minutes on Groups B and C.

2. At H Hour, fire Group A, plus concentrations 108, 141, and 116. These fires would engage the possible enemy positions most capable of defeating the attack on Objective 1. Groups D and E on call, if found necessary. Group A to be lifted on order of the commander of the element making the attack X.

3. On order, fire Group C in con-





junction with attack Y. Smoke woods edge on right (Groups E and F). Group D (E and F too, with HE, if smoke proves ineffective) on call as necessary to protect flanks. Group C to be lifted on order of the commander of the element making the attack Y.

4. On lifting Group C, fire Group B; lift Group B on order of the commander of the element making attack Y.

Additional fires on call on targets of opportunity should be by battalion, company, or platoon commanders, through FOs or direct to the FDC if FOs are out of action. These fires are usually adjusted fires shifted from known concentrations or located by approximate coordinates and normally constitute the majority of fires used in an attack. A platoon leader may call, "I am receiving antitank fire from my right flank—give me Concentration 113." The platoon leader should be prepared to adjust this fire if necessary. In case of a great emergency, when no time is available to locate the source of fire accurately, the platoon

might request "Group Fox."

### Artillery Support of Defensive Action

The scheme of artillery fire support is worked out in the following steps, in sequence:

*Step 1.* The line unit commander (tank or armored infantry) "attacks" his own position logically from the enemy's point of view—assembly areas, where the enemy will locate his base of fire, what intermediate objectives will be taken, what routes of approach will be used.

*Step 2.* The line unit commander then determines his scheme of defense; OPLR, MLR, location of strong points, reserve positions, etc.

*Step 3.* Artillery concentrations are located by the line unit commander and the artillery liaison officer (or FO) working together. These concentrations would cover points where the enemy is apt to establish his base of fire, his attack positions, routes of approach, and areas providing good concealment.

*Step 4.* After concentrations are

selected and numbered, then for convenience of control certain concentrations are grouped, as for offensive action.

*Step 5.* The fire support thus worked out is made known, down to platoons.

*Step 6.* The artillery liaison officer (or FO) arranges to have enough of the concentrations fired in to enable any concentration to be fired with reasonable accuracy without adjustment. All prearranged concentrations and groups should be shown on the artillery FDC firing chart.

*Step 7.* A proper system of calling for fire is established. The FO normally controls the artillery fire, according to the fire plan. His post normally should be not too far from the company command post, although good observation is important. By means of radio, he keeps in touch with the company and platoon commanders. He must be thoroughly aware of their situation, and provide them fires as they may request them.

### Example

This scheme of fire support is illustrated by Figure 5. Again the unit is taken as the reinforced battalion with the fire support of two artillery battalions available.

The battalion commander plans his scheme of defense. He recognizes points R, S, and T as suitable locations for the enemy base of fire, and recognizes routes V, W, and Z as the best routes of approach into his position, and plans his counter action accordingly.

Concentrations indicated are selected as those most apt to be damaging to the enemy's employment of his forces: on assembly areas, probable bases of fire, routes of approach, and concealment.

Concentrations selected are grouped logically according to how they will be used in support of the defense. See sketch.

### Execution

Fire will be brought down according to the observation of the forward observer, or on request of the company or platoon commanders, platoon sergeants and squad leaders. It is obvious that discretion must be applied to insure that fires are employed on the true points of enemy effort, and not on false ones.

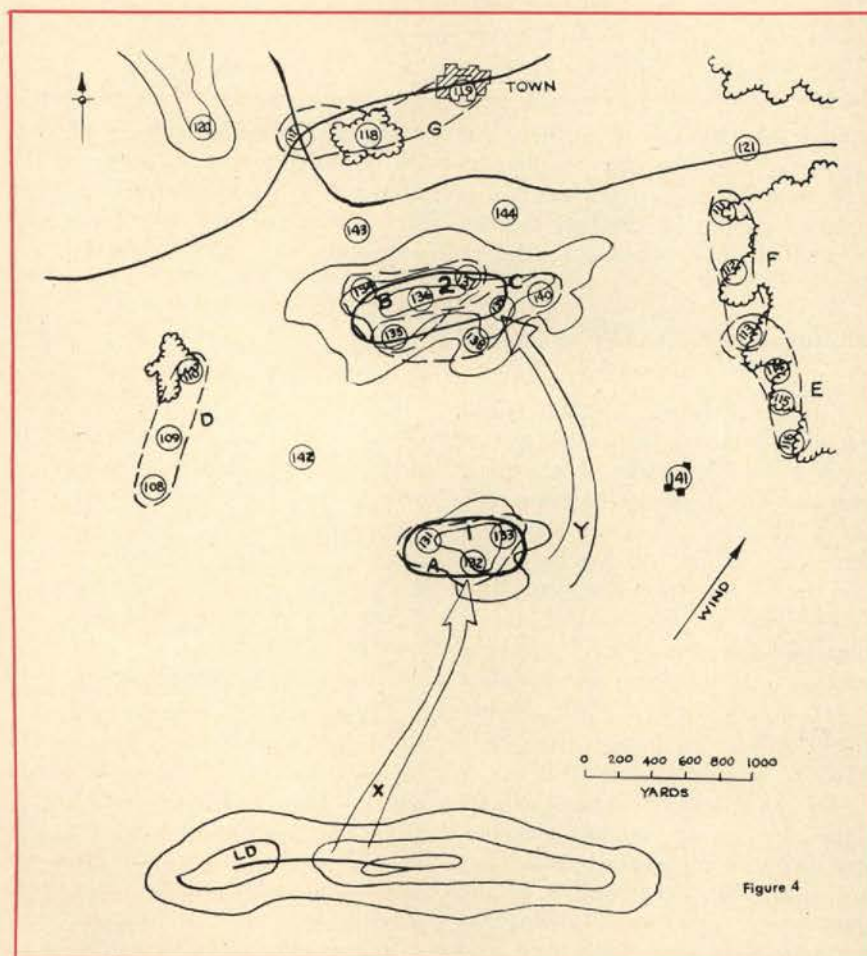


Figure 4



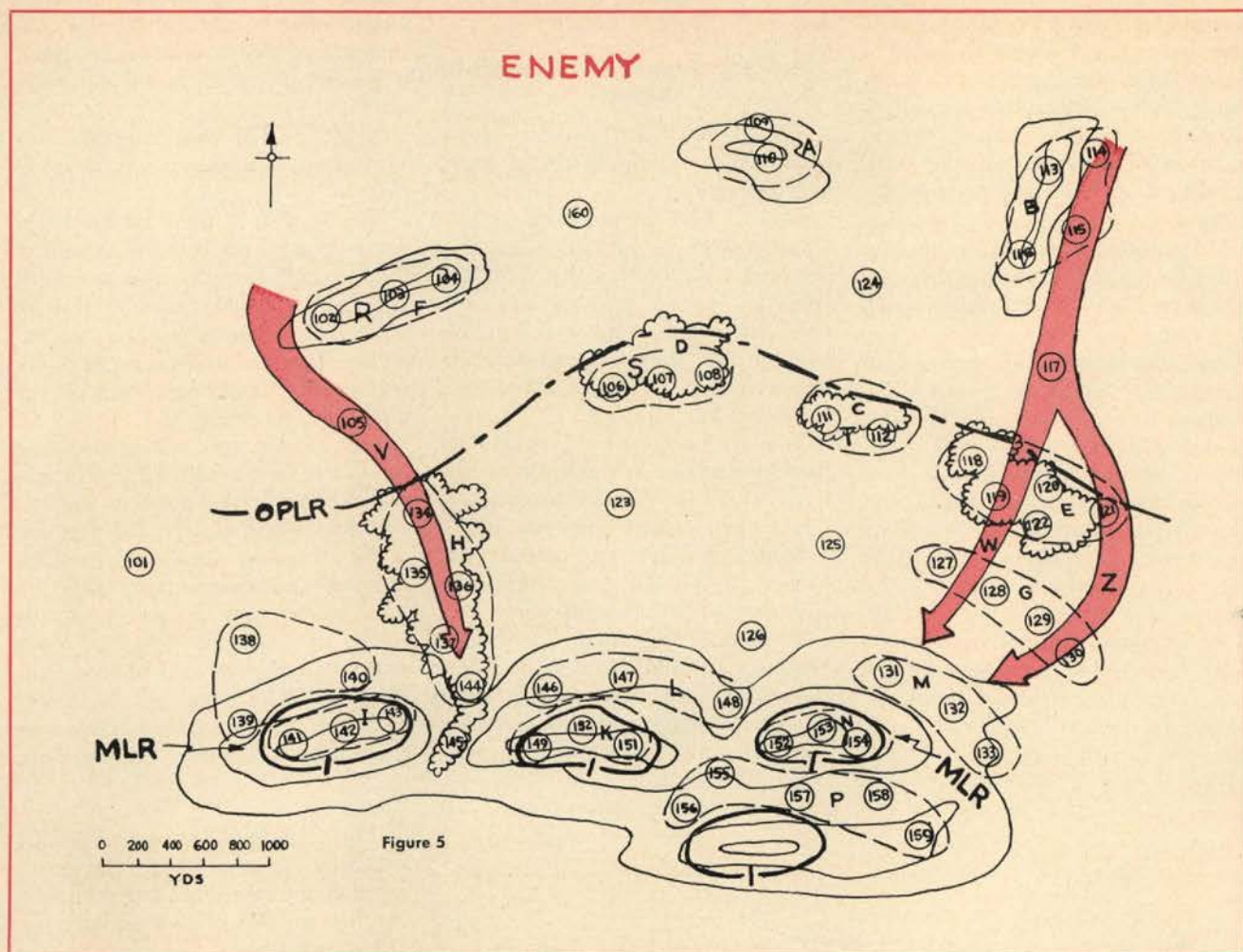


Figure 5

### Types of Fire Plans

The artillery fire support plan for a long planned deliberate attack may be very complete and worked down to the most precise detail. The plans illustrated in the preceding paragraphs are more normal—they may be laid on in the matter of an hour's reconnaissance and map study. And finally, our units must be capable, if planning time is limited to just a few minutes, to lay on a general scheme of support very hastily: "We must attack in five minutes. My objective is that hill: put fire on the objective until you see my tanks climbing up it, and block my left flank (those woods) with smoke while I cross the open area. Give me the key Group and Concentration Numbers."

Since artillery support is normally planned at battalion headquarters, it is necessary, in training, that this function be performed by those headquarters in presenting a tactical problem to a company. Hence when a battalion commander presents an attack problem to a company *he* should

provide the scheme of artillery fire support. The company commander will then utilize this scheme of fire support—calling for the fires therein, through the FO—to assist him in the attack.

### Utilization of AAA (AW) in Ground Support

For the automatic weapons battalion of the armored division the ground support role is strictly a secondary one, antiaircraft being the prime mission. The basic arms are the M-16 quadruple caliber .50 machine gun, and the M-19 twin 40mm gun. Each section has one of each, the platoon four of each, the battery (two platoons) 8 of each, and the battalion (four batteries) 32 of each. A platoon would be the normal attachment to a tank or infantry battalion.

The M-16 and M-19 are excellent direct fire ground support weapons, provided they are properly used. They are vulnerable to ground fire, and must be accorded special privileges in selection of position. They need good

cover, and therefore plenty of time for reconnaissance. Because of the high rate of fire, ammunition supply is a serious consideration, frequently requiring prestocking at the gun positions.

An automatic weapons platoon employed in a ground role must be kept consolidated under battalion control (probably under the artillery liaison officer) and given the *simplest sort* of preplanned missions, which should be *area fire* on objectives or intermediate objectives, and on flank hills and woods. These fires should be preplanned and each given a simple designation, so that the battalion commander (or LO) may turn the fires on and off, like a spigot, on request of company commanders.

The AW platoons of the 2d Armored Division are given training in this business, without diverting their attention from their primary job. The fire of a platoon is impressive to watch, and a very undesirable thing to experience if you happen to be sitting on the target.



**T**HE Armored School has developed an inexpensive and effective single shot device for coaxially mounted, solenoid actuated caliber .50 machine guns. There is a definite need for a single shot device when using caliber .50 coaxial machine guns for subcaliber training.

This device can be effectively used in tank gunnery training by all T/O&E units, civilian components and other agencies when using caliber .50 coaxial machine guns for subcaliber fire.

The following steps are necessary to install this device:

1. With the machine gun receiver resting on the coaxial machine gun mount, right side of receiver up; secure switch bracket to receiver with two screws.
2. Mount machine gun in normal manner.
3. Remove back plate, driving spring and driving spring rod. Position bolt so as to permit installation of the modified caliber .30 bolt handle. Reassemble the gun.
4. Connect one lead wire to the solenoid; the other to the caliber .50 lead wire.

The following steps are necessary to fire:

1. Loader will load the gun in the normal manner, push the switch toggle forward, and announce UP.
2. With the machine gun switch in the ON position, gunner will fire in the prescribed manner by squeezing the firing trigger switch, closing the solenoid circuit and firing one round.
3. As the bolt climaxes its rearward movement, the modified bolt handle will push the switch toggle to the rear, thus opening the solenoid circuit.
4. Normal forward movement follows without interruption.
5. Gunner will release the firing switch. Loader pushes switch toggle forward, announces UP and the cycle is repeated.

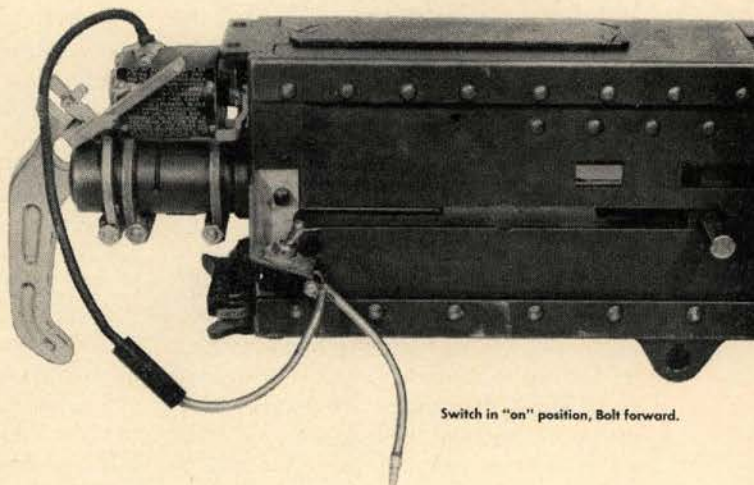
Pilot models of this device have been tested on ranges conducted by The Armored School. All have proved sufficiently durable and reliable for positive one-shot action.

For detailed measurements contact the Weapons Department, The Armored School, Fort Knox, Kentucky.

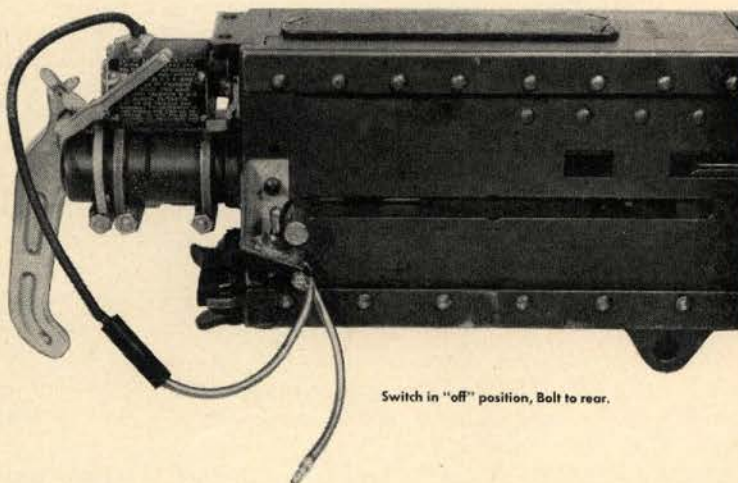
## SINGLE SHOT DEVICE

*For use in gunnery training when using the caliber .50 coaxial machine gun for subcaliber firing.*

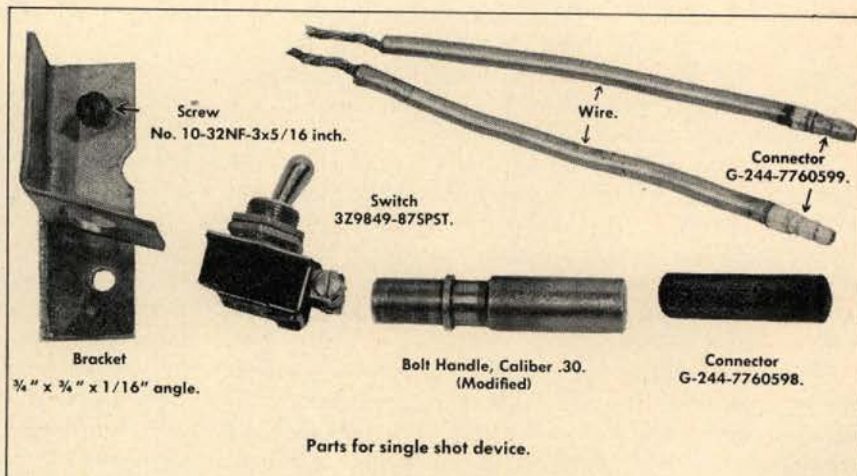
by COLONEL LOUIS A. HAMMACK



Switch in "on" position, Bolt forward.



Switch in "off" position, Bolt to rear.



All photos U.S. Army



# SOLDIER MORALE

by LIEUTENANT GENERAL BRUCE C. CLARKE

**T**HE one question most frequently asked by visitors to units in Korea is: "How is the morale?" This question usually leads to a discussion of many things and usually ends in an agreement that the morale is "Excellent." I am aware of no commander who ever rated the morale of the men in his unit as anything but "Excellent." But I am sure that the morale in some units is "more excellent" than in others.

*What is morale?* Our manual on leadership defines morale as the mental and emotional state of the individual. As such it is naturally influenced by many factors.

## The Basis of Good Morale

Although morale is a complex and intangible quality, it must have a solid basis of these three factors which lead to a general feeling of confidence, well-being and accomplishment. Military leadership and management play a large part in providing the three factors, although the military commander alone cannot provide them all to the full extent needed:

1. Doing well,
2. An important job,
3. And receiving recognition.

## Adjuncts to Morale

During the course of this article I will refer to these elements, but first let's consider the several adjuncts to morale which have an influence on units but which in themselves alone do not produce good morale if the basis of good morale is missing.

*Good Management.* We all like to be in a unit where there is good management, where things run smoothly, where things are planned, where men do not have to "hurry up and wait." The basis for good management is prior planning, thorough organization and continuing supervision.

*Well Informed.* Men like to be kept informed ahead of time as to things that affect them or are apt to affect them. It is far better for the commander to keep his men informed, than to have them seek to get such information from rumors. Most soldiers enter into training programs and other military activities with vigor and enthusiasm if they know their purpose and the reason.

*Well Trained.* This is an important part of factor one, "Doing well." If a unit is not well trained its men know it. This fact adversely affects their confidence, especially if they anticipate there is a possibility of using that training in a critical situation. Every soldier likes to feel that he is playing on a winning team—he knows he can't win if he isn't well trained.

*Chances for Advancement.* Making progress is morale raising to all men. Knowing that there is an opportunity for advancement and that only excellent performance and preparation lead to promotion in a unit helps the morale.

*Good Physical Condition.* Good physical condition

goes hand in hand with good mental condition. These two elements are basic to achieving good morale.

*Good Administration.* Men like to know that the administration in their unit is good, that their pay accounts and individual records are correct, that the date they are due for Rest and Recuperation trips or rotation home will not be overlooked, that their allotments are going through on schedule. These matters are very personal to a man and affect his confidence in his unit.

*Confidence in their Equipment.* By and large we are the best equipped Army in the world. There is always better equipment under development than is in the hands of troops. There would be no progress unless that were true. The talking down of our equipment as being obsolete, the statements that we do not have the latest and best are detrimental to morale.

*Confidence in their leaders.* Men expect their leaders to know their jobs, to share the hardships with them and to take a personal interest in their problems. The men like to see their leaders where things are going on—where the weather is bad or the night dark and wet.

*Comfortable Quarters.* With a little encouragement men will fix up comfortable quarters under most any condition. They should always be made as comfortable as the circumstances permit.

*Good Mess.* The food issued to the American soldier is the best that any Army ever received. There is no excuse in the Army for other than a good mess. Where messes are not good, command attention is lacking.

*Good Mail Service.* The importance of this should be apparent to all. The soldier counts on his mail—he looks forward with anticipation to every mail call.

*Good Medical Attention.* Confidence in the medical service is of tremendous importance to any unit, especially to a combat unit.

*Post Exchange Facilities.* The Post Exchange gives the man a source of small necessities and little luxuries so that he can vary the routine of issue items and have some things in accordance with his own wishes.

*Leaves, Passes and Rest and Recuperation Periods.* A constant and well-implemented policy in such matters provides breaks in routine which are most beneficial. The leave program should be planned so that each individual knows approximately when he is going. He can then plan accordingly.

*Religious Services and Character Guidance.* It is especially important that an Army made up mostly of young soldiers be provided with facilities for religious services in accordance with their preferences and a program of character guidance, with a view to continuing in the service the wholesome influences of home and community life.

*Awards and Letters of Commendation.* These means of recognition of good work play a most important part in factor three, "receiving recognition," of the basis of good morale. A good commander is ever on the alert to detect



and recognize good work by his subordinates.

**Diversions.** There are many important activities that fill up spare time, thereby keeping the soldier pleasantly and profitably occupied and adding to his contentment. Among these are: Movies, U.S.O. Camp Shows, dayroom and library facilities, and athletics.

**Standards.** Soldiers like to be in a "sharp" unit. They appreciate the achievement of high standards in discipline, dress, housekeeping, police, maintenance, training, athletics, etc. The lift in morale that comes from impressive military ceremonies is an important factor.

Most of the various adjuncts to morale are expected by troops as a matter of course. Therefore, the presence of them does not necessarily add to morale but the absence of any of them is quickly noticed and adversely affects the morale substantially.

### Evidences of Morale

In discussing the subject of morale with visitors, I often ask and am asked: "What do you look for in a unit in order to gauge the morale?" Since morale is influenced by so many factors, there are naturally many indications of the state of morale in a unit. The things I look into and note in making a quick size-up of a unit include:

**Saluting.** Is it well done? Do the men speak? Do they seem pleased to greet you? Do they come forward to report?

**Dress.** Is it uniform, neat, clean, worn smartly?

**Good Housekeeping.** Is the area neat, orderly, clean? Are offices cluttered up? Are bulletin boards neat? Are signs clean, neat, uniform? Are barracks neatly arranged? Has there been an effective effort to make the unit attractive?

**Pride.** Are they eager to show their accomplishments? Are they eager to point out their history? Do they have something good to sell and try to sell it?

**Participation in Charities and Unit Improvement Projects.** These extracurricular activities indicate the unit spirit in an organization.

**Athletic Program, and Support of their Teams.** An athletic program, enthusiastically supported, on the small unit level so that many men actually participate, is always a favorable indication of morale as is the support of unit teams in competitions. Competition between platoons is most beneficial.

**Church Attendance.** This is a good indicator.

**Soldiers' Deposits and other Savings.** A man who is saving his money each month is "banking on his future" and is usually a well adjusted and confident soldier. When there are many such soldiers in a unit there is a depth of stability in the organization.

**AWOLs.** Where situations exist to make such offenses on the part of the men reasonably easy to commit, this item is an indicator of morale.

**Size of Sick Call.** Unless there are special reasons for it, a continuing large sick call is a danger signal in a unit.

**Venereal Disease and Courts-Martial Rates.** These often indicate morale in a unit, but they must be analyzed carefully for extraordinary influencing factors. For example, a very low courts-martial rate may indicate not good morale, but a lax discipline.

**Incidents and Accidents.** Usually these occur in sizeable numbers only as a result of conditions existing over a

period of time which set the stage for them. Because of this, they are an indication of the soundness of the basic structure of a unit which includes the state of morale of its members.

**Complaints to the Inspector General.** These come about when men are not well informed and properly handled. Thus, they are an indication of morale.

**Delinquency reports.** Since these usually come to a unit from outside sources, they indicate how well men behave away from their unit and reflect both the state of discipline and the morale in a unit.

### Outside Influence on Morale

The factors, adjuncts and indications of morale covered so far have to do with those things that are generally within the ability of military leadership and management to influence. But there are influences on the morale of soldiers, especially those on duty in a far-off land, which stem from attitudes of officials, members of Congress, the press, radio commentators and the public at home. These factors have to do with the last two elements of the basic premise:

"2. An important job,

3. And receiving recognition"

It is necessary that the soldier in Korea feel that he is needed here in an important mission, that his sacrifices are of both immediate and of long-range benefit to his country, his home, his family and himself. He will feel that importance so long as the people at home feel it. He is very sensitive to public opinion at home and, because of good radio, newspaper, and mail facilities, is constantly abreast of the attitude at home toward the importance of his job in Korea. The "home town" and other releases by the Public Information Officers play an important part in the attitude at home. Unless the people at home help maintain in him the feeling that he is doing an important job for them, the heart of the basic premise upon which good morale is built is eliminated. Then the several adjuncts to morale cannot fully fill the void regardless of the efforts made.

The third element, "receiving recognition," generally follows from the second, insofar as the attitude of the public at home is concerned. Visits, speeches and actions of officials, articles by newspaper correspondents and remarks by radio commentators, play a great part in this element as do the contents of letters which the soldier receives from home. Because of this, everyone at home shares with the military leaders in Korea the responsibility for the morale of the service personnel here.

### Summary

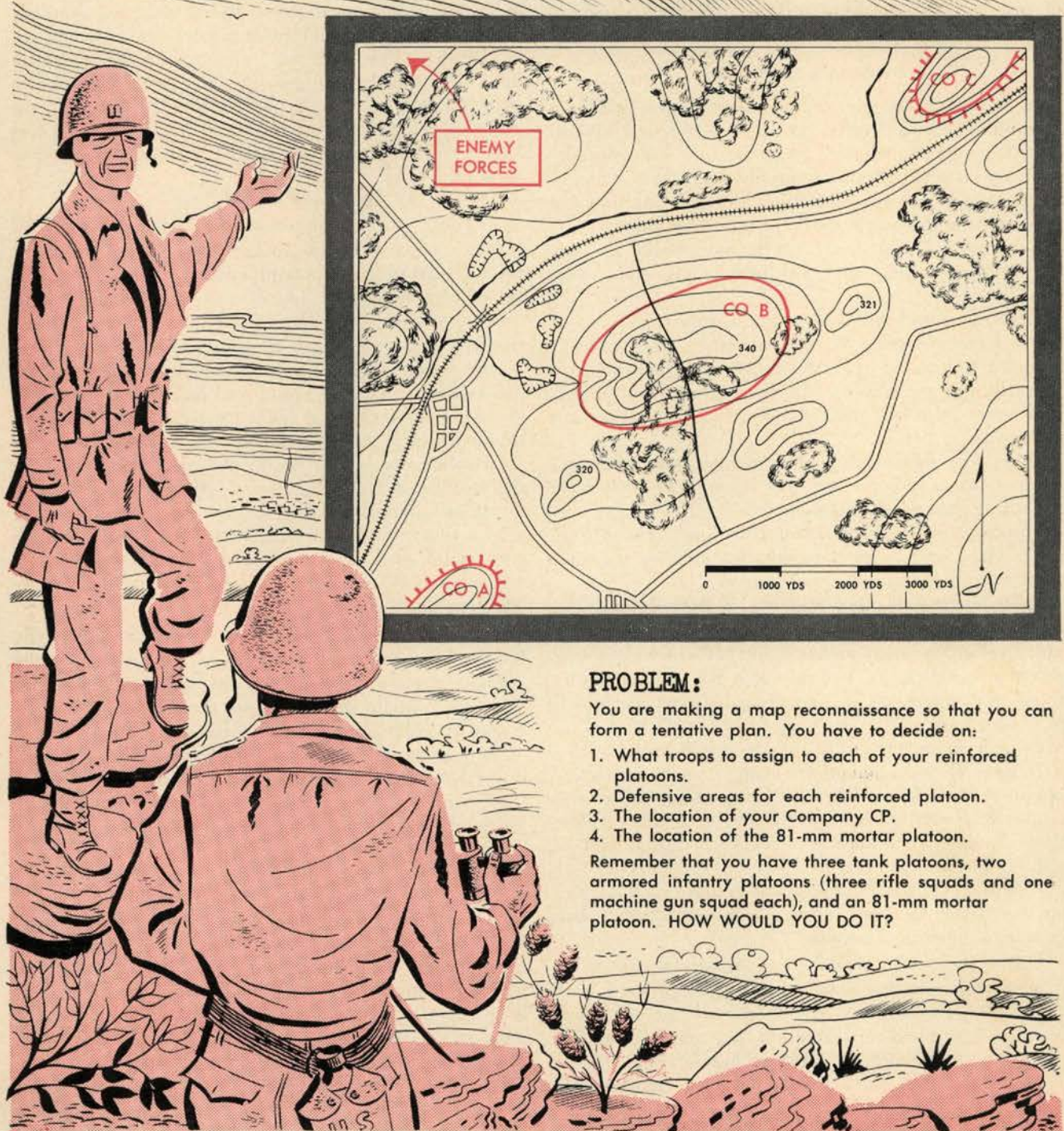
The morale of a man in a military organization comes from many factors. It may well be summed up in one word, "Confidence." Confidence in his training, equipment, leadership, in himself, in his unit and in the support from home. The military commanders play a big part in it but so also do officials, members of Congress, the press, radio commentators and the general public at home. Together they must insure that the soldier does well an important job and receives recognition for it. So long as this is accomplished there is a general feeling of confidence, well-being and progress in a military unit and the report which states that the "morale is excellent" will be sound.



# How would you do it?

## SITUATION NR 1

You are commanding Company B, 1st Tank Battalion, (which is reinforced by Company B, 101st Armored Infantry Battalion, minus one platoon). Your battalion is holding a portion of the strongpoint system for a combat command which is conducting the mobile defense. You have been ordered to organize a strongpoint on the high ground shown on the map.



## PROBLEM:

You are making a map reconnaissance so that you can form a tentative plan. You have to decide on:

1. What troops to assign to each of your reinforced platoons.
2. Defensive areas for each reinforced platoon.
3. The location of your Company CP.
4. The location of the 81-mm mortar platoon.

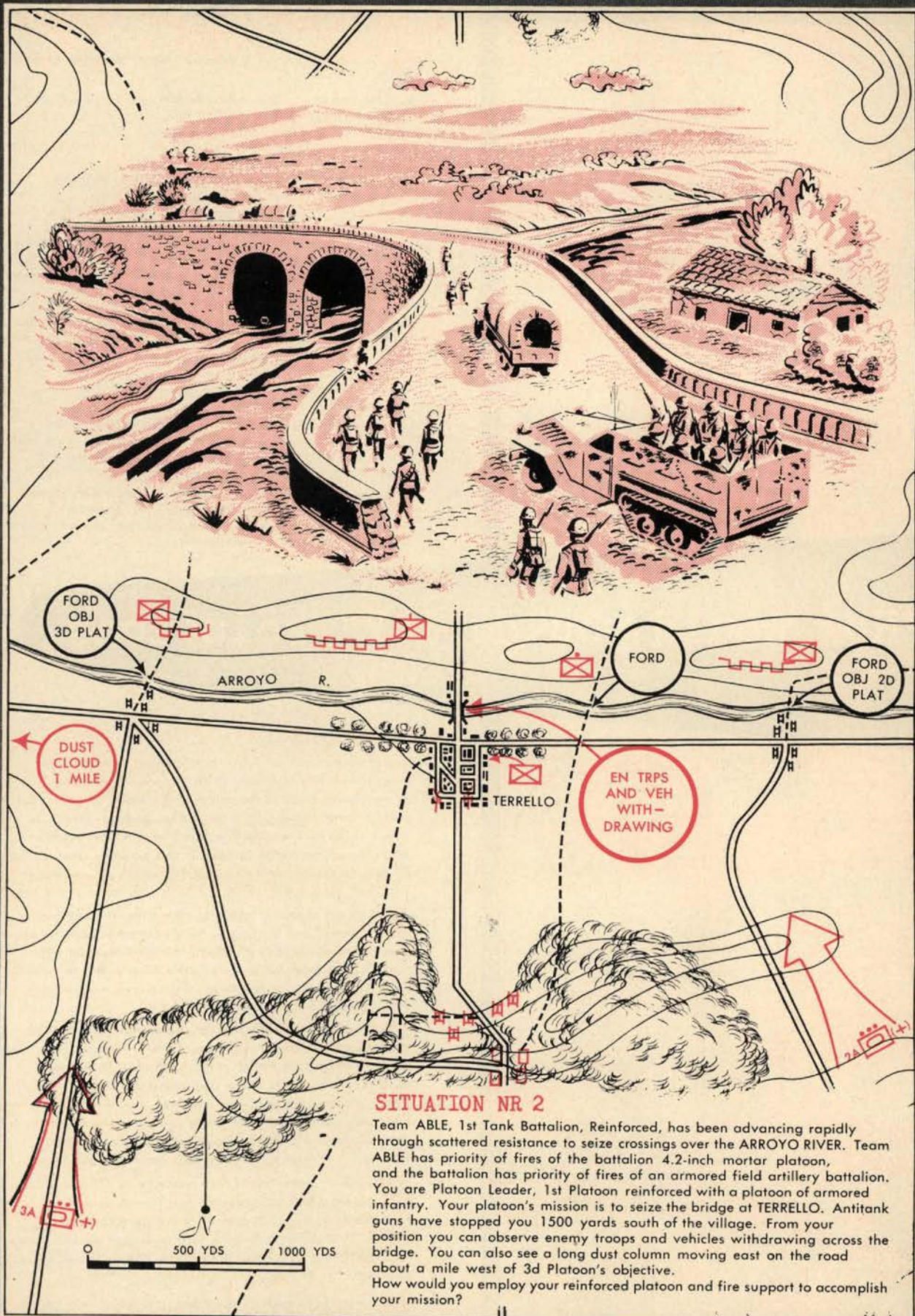
Remember that you have three tank platoons, two armored infantry platoons (three rifle squads and one machine gun squad each), and an 81-mm mortar platoon. HOW WOULD YOU DO IT?

AN ARMORED SCHOOL PRESENTATION

AUTHORS: PROB NR 1, MAJ W H STITES

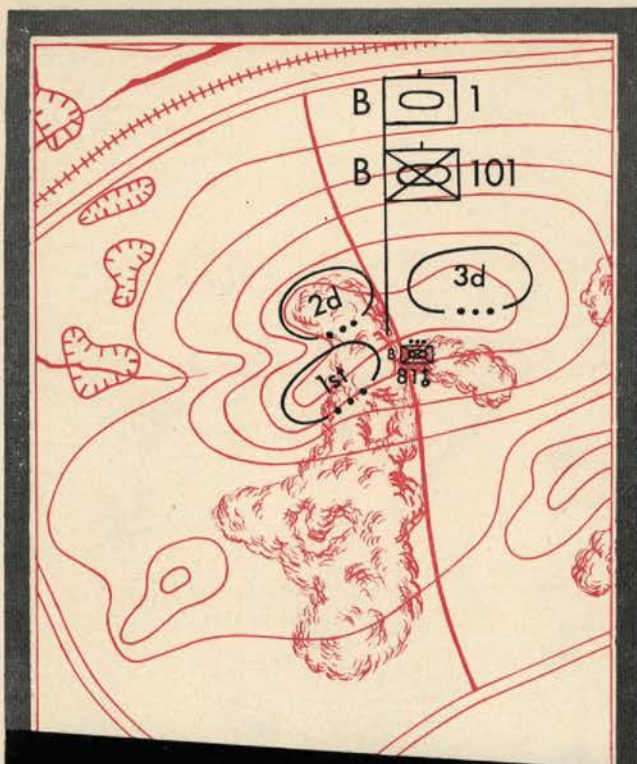
PROB NR 2, MAJ H R DUNN





ILLUSTRATED BY PFC A P ZOELICK





## SITUATION NR 1

- 1 You would organize three reinforced platoons as follows:

1st Platoon	2d Platoon	3d Platoon
1st Tk Plat	2d Tk Plat	3d Tk Plat
1 Armd Inf Plat (—)	1 Armd Inf Plat	1 Armd Inf Rifle Sqd
		1 MG Sqd

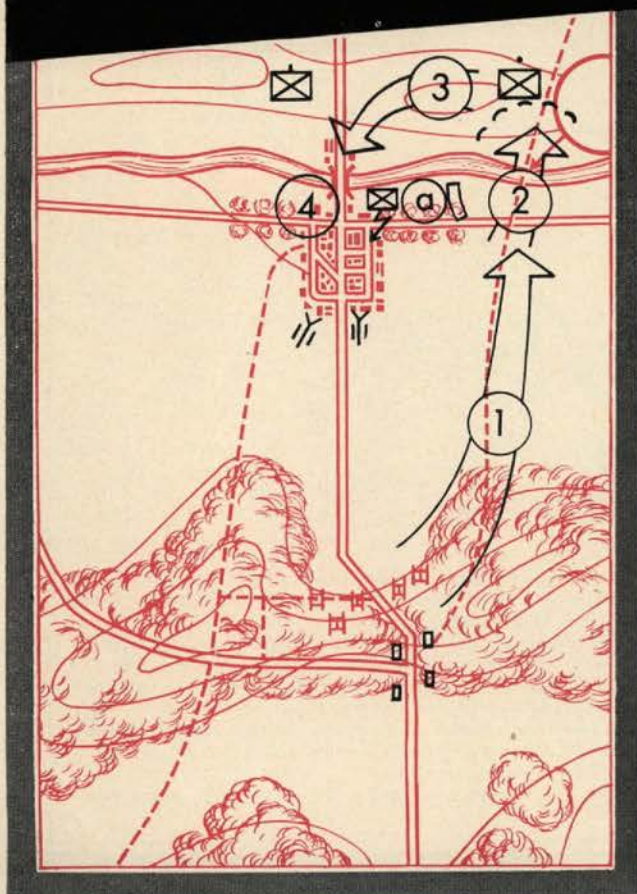
The 2d Platoon will need an entire platoon of armored infantry because this platoon holds the center or pivotal point of the company strongpoint, has the best fields of fire, and is located around a wooded area. The remaining armored infantry platoon was split evenly between the 1st and 3d Platoons with the machine gun squad assigned to the platoon with the better long-range fields of fire. It is undesirable to split platoons, but in this case it is necessary in order to have some armored infantry with each of the three tank platoons. The armored infantry company commander will assist the strongpoint commander as directed.

The strongpoint commander may move elements of his force to previously selected supplementary positions if enemy action requires it (for example, Hill 320 to the SW and Hill 321 to the E).

- 2 Platoon defensive areas were pulled in tight for mutual protection and all-around defense. Tank and armored infantry company headquarters personnel will assist in the protection of the rear.

- 3 The company CP and the mortar platoon were placed within the company strongpoint for protection. The three machine guns of the mortar platoon will be integrated into the defense of the strongpoint.

## "How would you do it?" solutions



## SITUATION NR 2

The probability of seizing a bridge intact from a clever enemy is usually relatively small. However, the value of an intact bridge to the attacker is usually so great that its seizure merits maximum effort. Your problem here is to attack in the manner and direction that will most quickly place your force on the bridge. In this situation, you can fight on ground of your own choosing and reach your objective with less contact by taking the following actions (see sketch):

- 1 Request mortar smoke and HE on the antitank gun positions, and artillery air bursts on the bridge. Maneuver your tank and the second section, followed at about 100 yards by the mounted armored infantry platoon, toward the ford. Order your first section to follow by bounds, firing overwatching fires to your left flank.
- 2 Cross the ford with your second section, followed by mounted armored infantry. Order the first section to move to an overwatching position (see (a)) to support by direct fire, and to block any resistance from TERRELLO. Before crossing the ford, your estimate should include the possibility of moving your whole force toward the south end of the bridge without crossing the ford. The enemy situation in TERRELLO will govern your decision here.
- 3 Depending on the enemy situation in TERRELLO at this time, you can order the first section either to rush the bridge's south end to converge with your section, or to follow across the ford to support by fire. Request that the height-of-burst of the artillery fire be raised as you approach the bridge.
- 4 Secure both ends of the bridge. Request that the artillery fire be shifted to the enemy positions north of the bridge. Check for demolitions on the bridge. Report the situation to your team commander.



# **The Revolution: American Military Policy Emerges from the Crucible of War\***

by

**DR. C. J. BERNARDO**

and

**DR. EUGENE H. BACON**

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## **The Dangers of War Finance in a Bankrupt Economy**

To raise and equip the armies necessary to combat the mother country, the Continental Congress began as early as 1775 to print paper money backed only by the promise to redeem it at some future date. Together with the Congressional emissions of fiat, the States themselves retained a free hand to issue their own currency making a total of fourteen different media of exchange in a country where about one third of the population, hostile or indifferent to the cause of independence, refused to accept any of it as legal tender. The consequences of this whole system of dubious finance brought with it the inevitable forces of inflation; profiteering, price raising, stock-jobbing, and the host of other evils connected with a spiraling and uncontrolled economy.<sup>135</sup>

Skyrocketing prices and diminishing dollar values prompted Washington to increase the bounties for recruits. By the end of 1780, conditions had grown so bad that even essential supplies of food and clothing, as well as arms and ammunition, had disappeared from the market because of the unscrupulous speculators who hoarded these items only to sell them for what the traffic would bear. Fearing the consequences inherent in the continuation of this state of affairs, he tried to direct the attention of Congress to some sort of solution. Although the enlistment program of 1780 was essential, Washington was sure this could not be successful because "there are wanting many concomitants to bring about this event; among which, placing our finances upon a proper footing is not the least difficult."<sup>136</sup>

On December 10, 1780, he echoed this note of pessimism to Gouverneur Morris, confessing that although the Army was small, and recruits were needed badly, nothing could be done to take care of any added levies unless provisions and

supplies were made available.<sup>137</sup>

The frightful portents of the debilitated structure of American economy, and the growing distrust of the people in the financial system, were matters of grave concern to the Commander-in-chief. When even the genius of Gouverneur Morris was insufficient to draw blood from a stone, Washington looked to France for a solution. By mid-January of the new year, John Laurens was ready to go to the Court of Louis XVI armed with Washington's observations on the causes of America's weakened condition. Considering the diffused population of the land, together with the consequent difficulty of drawing together its resources; the composition and temper of a *part* of its inhabitants; the want of a sufficient stock of national wealth as a foundation for Revenue and the almost total extinction of commerce; the efforts we have been compelled to make for carrying on the war, have exceeded the national abilities of this country and by degrees brought it to a crisis,

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which renders immediate and efficacious succors from abroad indispensable to its safety.<sup>138</sup>

Reliance upon the Allies for financial aid did not, however, deter some of the patriotic leaders in their efforts to stabilize the currency. Towards the end of the Summer, 1781, the campaign in the South was turning against Cornwallis and with the prospect of an early end to hostilities, financial stability became not only desirable but urgently necessary if the credit of the nation was to be established in Europe. While strongly recommending measures to give "proper stamina" to the country's finances, Washington also lamented the wasteful method by which the war was waged in the absence of a strong central government: "If the resources which have been drawn forth had been applied to great objects by one common head," American independence would have been secured and rendered "as unshaken as Mount Atlas. . . ." <sup>139</sup>

The surrender of Lord Cornwallis at Yorktown on October 19, was met with mixed emotions among the people. There were those who felt the war was over, hence no need for continued military preparations, and those who insisted that preparedness should be continued. Sensing the dangerous implications of this divided opinion, Washington hastened to Philadelphia in an attempt to restrain Congress from falling "into a State of Languor and Relaxation," and to stimulate them "to the best Improvement of our late Success by takg. the most vigorous and effectual Measures, to be ready for an early and decisive Campaign the next year."<sup>140</sup> By January 4, 1782, amid the gaiety and patriotic exuberance everywhere to be evidenced in the city of brotherly love, Washington was happy to note that Congress had displayed "the best disposition imaginable . . . to prepare vigorously for another Campaign. . . ." <sup>141</sup>

#### **Mixed Emotions and Undivided Loyalties**

After the surrender of Cornwallis the War deteriorated into a series of savage raids on both sides which did little more than to increase the restlessness of the American soldiery who were nursing an accumulating list

of grievances against the Congress. Poor food, lack of clothing and shelter, coupled with an absence of pay for months at a time were strong motives for dissension within the ranks of the American Army, and now that the War, to all intents and purposes, had ended, the men began to insist upon a more equitable solution for their problems.

Although the men had endured their privations and suffering with more than extraordinary fortitude, they looked with some misgivings upon the apparent intention of the States and Congress as well to neglect their well-being. For many there was the matter of pay to be settled and for others, especially the officers, there was the prospect of returning to their homes laden with debts much of which had been incurred while in service.<sup>142</sup> All of them were reluctant to go home until these were agreeably settled.

With little or no fighting to occupy the Army, it required no large amount of reasoning to conclude that the men would readily lend themselves to speculation over their fate and eagerly listen to the exhortations of some of their more outspoken brothers in arms. Congress had more than ample warning of the ominous portents of a soldiery whose every want and need had been neglected whether willfully or not. The lesson of the uprising of the Pennsylvania and New Jersey Lines in January, 1781<sup>143</sup> should have been sufficient to move them and the States to arrive at a just solution of such a lingering difficulty. But neither this nor the special pleas made by Washington<sup>144</sup> in behalf of the troops were sufficient to stimulate Congress to a more respectable plan for settling the grievances of the Army. The plain fact was that Congress was powerless to do anything about it and the States individually refused to assume the financial burden involved. This was a strange dilemma. Congress had found it difficult to recruit an Army during the course of the War, and now they found it even more difficult to disband it.

By March, 1783, the Army at Newburg had grown more dissatisfied by the delays of Congress to arrive at a suitable formula for settling the question of pay and listened attentively to the solutions offered

by some of their own numbers. On March 10, a general meeting was called to make vigorous demands for compensation and redress of just grievances to Congress. To Washington, the strong tenor of these anonymous addresses posed a danger not only to the War effort, but also to the civil liberties for which so many had sacrificed their lives.

The General met this new threat head on by going before the men themselves as spokesman for Congress as well as defender of the just rights of the soldiers. He reminded them of the honor and glory their arms had won for the country, and urged them to turn from those who sought "to open the flood Gates of Civil discord, and deluge our rising Empire in Blood."<sup>145</sup> By a show of humility, firmness, and tact Washington succeeded in quelling the disturbance in the main Army but there soon developed an equally disquieting circumstance among the Maryland Line.<sup>146</sup>

By June, 1783, these troops were in garrison in Philadelphia. Most of them were foreigners and almost all were short-term recruits who had experienced few of the hardships of battle. Raising the same cry as their brethren at Newburg, these men grew more intolerable and under the influence of their loosely held liquor, they marched upon the State House, forced the Congress to flee, and caroused around the City in a drunken melee. In this case Washington ordered the Continental troops to Philadelphia, whereupon the insurgents quickly laid down their arms. Menacing as this situation was, Congress by its precipitate action sacrificed what little prestige and dignity it possessed. Unable to solve the great problems of war, this august body sharply emphasized the degree of its debility when its collective courage deserted it.

But despite all the shortcomings of Congress, and notwithstanding the action of a handful of foreigners in the Maryland Line, few men in the Army were willing to transfer Congressional authority to thirteen States. In fact most of the soldiers were for the maintenance of "one continental body, looking up to one sovereign," and one of their favorite toasts was: "A hoop to the barrel and cement to the Union."<sup>147</sup> Leading nationalists



like John Adams called attention to the need of a strong union to frustrate the evil designs of European monarchies. A strong union, supported by a sizeable army and a strong navy, together with an adequate diplomatic corps, they argued, would compel respect for America. But American statesmanship was to ignore all three elements of the national strategy.

The strong nationalistic bent of the Army was no small consideration in the decision to reduce the Army. The States were in no mood to sanction the permanency of an army which showed signs of allegiance to a central authority rather than to the individual States. This Army which would enforce the laws of the Union to the detriment of States Rights was a "menacing danger" and when all was said and done, the States had not gone to war to transfer authority from London to Philadelphia.

It is a tribute to the men under arms who had endured all manner of privations and suffering, and who had just right to make strong demands for redress, that they refused to subvert the authority of the Government. Though tempted and even partially swayed, they remained steadfast in their loyalty and devotion to the cause of liberty and freedom. No army in history had ever suffered so much as the American Army and yet had made so little representation for a just recognition of the rights of the men who fought and bled, starved and grew lean, and froze and died to bequeath a greater posterity the fruits of their sacrifices. What transpired in the mutinies of 1781, and at Newburg and Philadel-

phia in 1783, was simply the final culmination of the enduring hardships that faced the men. The cup of forbearance had overflowed. That they remained loyal to the very end attests to the patriotism and loyalty of the men in uniform—at no time was there a serious threat against the civil authority. Whatever the lessons of the Revolution, none should stand out more glaringly than that the Army in America, under the distinguished leadership of George Washington, was the guardian of the liberties of the people. This was the rich heritage the Commander-in-chief willed to the unborn millions of Americans who under similar circumstances would emulate the examples set forth by the heroes of the Revolution. But because of a traditional hatred and fear of European military systems, the American Army was never separated in the mind from those systems, and the fiction grew that an American Army could be a threat to democratic institutions. The story of the Revolution disproves this thesis and the subsequent military history of the United States completely refutes it; but the fiction, like a malignant disease, lingered on.

Of the many important lessons derived from this war, the most significant was the danger to which inexperienced statesmen exposed the cause of independence by ignorance of military affairs and unsound military legislation. By the end of the conflict, some 400,000 men had been mustered in the service at a cost of some 370 millions of dollars,<sup>148</sup> when only 25% of this number would have been sufficient to achieve victory in considerably less time and at consid-

erably less cost. That America could bring this host of fighting men into the field over the course of the War is good cause for reflection that a "paltry banditti" was permitted to run through the States and nestle in the cities. The answer was a simple one. Despite this large number of men, Washington never had at any one time more than 17,000 men, and at Trenton and Princeton, when he needed men most, he had an effective force of less than 4,000.

Competition for the service of men between the Congress and the individual States made it difficult to place an Army in the field for any length of time. This problem was accentuated by the general lack of resources which developed as the war dragged on until it was no longer a question of procuring men but how to equip, feed, and shelter them once they enlisted. All the problems which beset the Commander-in-chief for eight years might have been solved if a determined effort had been made in the beginning by a sufficiently strong executive, to "bring thousands into the field—push the enemy with vigor—drive them from our towns—storm their strongholds, and never pause until we force them from our shores."<sup>149</sup> Instead, we pursued a policy which suffered the enemy to conduct an almost unmolested military occupation of our cities for eight years. With these costly lessons fresh in mind, not more than a year after the cessation of hostilities, Americans, weary of war and its consequences, relaxed their guard and the valuable military experience of the men who fought was allowed to slip into eternity.

<sup>135</sup>Miller, *Triumph*, pp. 433-451.

<sup>136</sup>Washington to Edmund Randolph, November 7, 1780, 20 *WW*, 317.

<sup>137</sup>Washington to Morris, December 10, 1780, *ibid.*, pp. 457-458. The States were called upon to supply clothes to their own recruits, Congress being unable to procure them at this time. As the theater of war shifted southward, Virginia passed a series of acts to recruit her quota of troops fully clothed and supplied to sustain them in combat. See John Dunlap and James Hayes, *Acts Passed at the General Assembly of the Commonwealth of Virginia*, 1781, pp. 1-20.

<sup>138</sup>Washington to Laurens, January 15, 1781, 21 *WW*, 105.

<sup>139</sup>Washington to Col. Fitzhugh, August 8, 1781, 22 *WW*, 481.

<sup>140</sup>Washington to Greene, November 16, 1781, 23 *WW*, 347.

<sup>141</sup>Washington to Lafayette, January 4, 1782, *ibid.*, p. 429.

<sup>142</sup>Freeman, *op. cit.*, V, pp. 430-431.

<sup>143</sup>In January, 1781, the men of the Pennsylvania Line demanded their release on the ground that their enlistment had expired with three years of service notwithstanding that they enlisted for three years or the duration. This was settled by releasing outright a large number of them and granting furloughs to an equally large number. Seeing the ease with which these concessions were wrested from the Pennsylvania authorities, some 200 men of the New Jersey Line mutinied. But in this case George Washington stepped in, forced the troops to turn in their arms and executed two of the three ringleaders and the mutiny ended on the spot. See Miller, *Triumph*, pp. 542-545; Freeman, *op. cit.*, V, Chapt. 15; Carl

Van Doren, *Mutiny in January*, New York, Viking Press, 1943, *passim*.

<sup>144</sup>Thomas G. Frothingham, *Washington Commander-in-Chief*, Boston, Houghton Mifflin Co., 1930, p. 375.

<sup>145</sup>26 *WW*, 227.

<sup>146</sup>On April 11, 1783, Congress issued proclamation for the cessation of hostilities but offered no method by which the Army was to be disbanded. See 24 *JCC*, 238-240. This was put into effect by Washington eight days later. See *GO*, April 18, 1783, 26 *WW*, 334-336. This merely ordered the cessation of hostilities and did not refer to a general peace.

<sup>147</sup>Miller, *Triumph*, p. 679.

<sup>148</sup>*American State Papers, Military Affairs*, Vol. I, pp. 15-20.

<sup>149</sup>Article in *New Jersey Gazette*, March 18, 1778, quoted in Montross *op. cit.*, pp. 274-275.



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## Assignments

of

## Overseas

## Returnees

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**I** JUST got my ZI assignment, and darned if I'm not being sent halfway across the country. Why can't those people ever assign me near home?"

This oft-repeated statement has been made at least once by almost every officer in the Army. The assignment business is a mysterious thing to most officers, and this article will tell you something of what goes on in CMD when you are reported available for an assignment in the United States, after you've had a long, tough stint overseas. All officers should realize that there must be a tie-in between three important factors—the officer's wishes, the development of his career, and the requirements for officer personnel in the major CON-US commands.

You have a right to know how you are picked for your new post. Here is how it works. About four months before you complete your overseas tour you are reported for reassignment by the overseas commander to the Department of the Army. Upon receipt of this information, your career branch consults your Form 66 to determine what civilian and military education you have had, what MOS's you are qualified in, where you have been assigned in the past, and a variety of other pertinent facts concerning you. It has been an axiom in the service that "the needs of the service must be considered first." This still holds true although Career Management tries to assign an individual as closely as possible to his area of preference. Assignment officers must give careful consideration to many factors. Let me give you an example

of what we mean. If you are 1st Lt. Brown, an Infantry officer, and most of your time in the service has been spent as an Athletic Director, MOS 5661, it would not be logical for us to assign you to a unit near your hometown as a National Guard Organization and Training Advisor, MOS 2150. You aren't qualified for that duty. But you may be assigned as a platoon leader (Armored Infantry Unit Commander, MOS 1560) in order to make you a better infantryman. Or, if you are primarily an Artillery Unit Commander, MOS 1193, and you are needed at Fort Sill, Oklahoma, it would not make sense to assign you to Fort Dix, New Jersey as an Information and Education Officer, MOS 5004, just because your home is in Newark and there is a vacancy for an I and E officer at Dix. If in the latter case, however, you had had a good amount of experience in both MOS's, you might very easily be assigned to the vacancy which coincides with your desires.

You would be surprised at the number of assignments which do coincide. You often hear of the times when this is not the case, but seldom does a fellow officer tell of the times when "I got what I wanted."

Many of you desire to attend your branch school for one course or another, and you note this fact on your Preference Card. If you are qualified, some of you will wonder why you don't get to attend school on a TDY basis, en route to your new assignment. You know full well that going to school TDY en route is the most economical way to go, and we know it, too. But the time element is very important when we talk about schooling. For example, if you are forecast for return in September and the class you should attend doesn't start until 4 January, it is out of the question to order you to school 45 to 90 days early. You will have to go directly to your new post, and apply for the school at a later date.

It is time now to talk about the Preference Card—the most maligned piece of paper the Army ever made official. This form is consulted prior to each assignment and, whenever consistent with the requirements and with the qualifications of the individual officer, he is assigned according to his preference. In fact, your statement of preference is considered so

important by CMD that a new form is being designed which it is expected will render greater assistance to assignment personnel, and will facilitate the proper expression of preference by officers. The new one probably will be a full-sized sheet, much easier to understand, with complete instructions on the back. The Army Areas and Overseas Theaters are listed, as are some special preference assignments. We think the new form will be a big improvement. All you will have to do will be to read the instructions carefully, look at the map on the back, and take time to think about what you want to check.

Always remember that there are six Army Areas in the United States, each of which has submitted a requisition to CMD branches for officers they need by grade, branch, and MOS. Also, there are requisitions from Chief, Army Field Forces, Military District of Washington, and staff sections in the Pentagon. It is through these requisitions that those in the personnel assignment business know what officers are needed at what posts, at what time, and in what MOS.

Here should be mentioned another very important factor—priority of needs. Each requisitioning agency or headquarters lists its requirements on the requisition according to the immediate need for a certain position. Career Management must do its best to heed that priority. Closely allied to this priority is the fact that some jobs require a higher degree of skill and experience than others. For instance, the assignment officer would be doing an injustice to the officer if he assigned a young Lieutenant with only a grade school education to fill the requirement for a college ROTC instructor. This would be a case of malassignment. Lots of thought must, and does, go into each assignment.

The assignment business is not arbitrary. The officers in CMD have hearts, and if they know what you want they may be able to get it for you. But they can't read your minds, either collectively or individually. Be sure your Preference Card states your desires clearly. If you aren't sure what you asked for on your old card get a new one from your adjutant and mail it to the Chief of your Branch. If necessary attach a note setting forth clearly any compassionate or special consideration.



## Selection

### for

## Army General

## Staff Duty

**A**LTHOUGH not immortalized in song or story, the Battle of 1903 climaxed a long and difficult campaign highly important to the welfare of the Army and the Nation. This campaign resulted from much study and controversy over the need for some central coordinating agency over the multifarious agencies and activities of the Army. Historically the contribution of this campaign was the birth and development of the Army General Staff.

After years of confusion and several wars in which the President of the United States, Congress, and the Secretary of War personally ran field operations of the Army, it was finally conceded that they needed the assistance of a coordinating agency which could not only closely observe field operations but could also initiate timely study of problems and formulation of plans and policies for current or future operations.

Accepting this as a truism, the Army General Staff was established as a remedy in 1903. The passing of Public Law 88, 58th Congress effecting its birth, while not a new idea, constituted a drastic change from old outmoded procedures.

Having been established on the premise that a central agency was urgently needed to coordinate army activities, policy and planning, the General Staff immediately became the vehicle for preparation of coordinated plans and recommendations which when submitted to its military and civilian superiors enabled them to make timely, logical decisions. The great need for coordination and direction of military means and agencies toward a single, purposeful goal was at last possible.

Officers attain the necessary stature

needed on the Army General Staff by experience in the field and by formal schooling. CMD is charged with the overall responsibility for the selection and assignment of qualified officers to the Army Staff.

Except in time of War or National Emergency declared by Congress, not more than 4000 officers of the Army may be detailed or assigned to duty in the Department of the Army and of this number not more than 1650 may be "detailed to duty with" or "assigned to duty on" the Army General Staff.

Officers assigned to the Army General Staff occupy positions of great responsibility and trust. To be eligible for "assignment to duty on" the Army General Staff an officer must:

1. Be serving in the temporary grade of major or higher.

2. Be assigned to a position requiring as a primary duty the creation, development, or coordination of policies, principles or concepts pertaining to a primary function of the agency to which assigned.

3. Completion of a one year assignment "detailed to duty with" the General Staff qualifies an officer for assignment to *The General Staff*. Officers who are graduates of the Army National War College, and/or the Industrial College of the Armed Forces, and general officers may be awarded constructive credit for the year apprenticeship duty.

Selection and assignment of officers to authorized general staff positions is a dual function of CMD and heads of General Staff agencies. The Chief, Career Management Division, is charged with overall responsibility, with initial responsibility being placed on career management branches of the arms and services. Whenever an officer completes an oversea tour or otherwise becomes available for reassignment within the CONUS, a careful evaluation of his record is made by his career branch. In response to requirements, qualified officers are selected. All officers of the combat arms and those of the technical and administrative services, specifically selected by chiefs of services, who possess appropriate qualifications are considered for assignment to Army General Staff vacancies.

Officers selected must have demonstrated outstanding ability in field command and/or staff positions and

have demonstrated high potential for outstanding performance of duty in the agency to which they are to be assigned by record of past performance. It is desirable that officers be graduates of the Command and General Staff or a higher military college. Taking into consideration Career Management policies and requirements for officers world-wide, available officers are carefully screened and either assigned to General Staff agencies or nominated to heads of such agencies for approval. Those selected and approved are placed on orders and "detailed to duty with" or "assigned to duty on" the Army General Staff, as appropriate. This process, coordinated between general staff agencies and career management branches, results in careful selection of the raw material which when properly molded is destined to become the "brains" of the Army.

Tours of duty in the Army General Staff are normally for a three year period. The Army Organization Act of 1950 specifically provides that officers assigned to the Army General Staff shall serve a tour of duty not to exceed four years. In exceptional cases where by special finding the Secretary of the Army finds it in the public interest, an officer's tour may be extended beyond four years. Upon completion of a tour an officer may not be reassigned to Army General Staff duty within two years unless approved as an exception by the Secretary of the Army.

At this point you may well be saying "How does this affect me?" Assignment to the Army General Staff is neither a prerequisite nor requirement for success. However, it is a logical assignment for any officer who aspires to have a well rounded career.

Your performance of duty, sense of duty, efficiency, and academic achievements are under constant scrutiny by your career management branch. Every effort is made to so monitor your career that your maximum potential is developed. The demand for officers with high integrity, intelligence, and devotion to duty is never satisfied. Therefore, taking into consideration world-wide requirements of the Army, you may soon be assigned to the Army General Staff on your first or a successive tour. When this occurs you have taken one more important step in your career.



## 65 Years Ago

I am firmly convinced that the cavalry of the near future will be conspicuous for its independent employment; that the changes in its organization, armament, and instruction will combine in the new force qualities heretofore divided between two arms of service; and that results commensurate with its increased power will therefore be expected from its use. The increased independence of cavalry will necessarily affect the tactical use of infantry; that arm must be more self-reliant. General Sheridan's claim that the infantry of an army in the field should be able to protect itself in camp and on the march will become a maxim. Even that costly auxiliary corps of war-chariots—the field artillery—under the bolder practice of the present day has learned to depend for safety, in an emergency, upon the rapidity of its fire and the gallantry of its personnel rather than upon its tactical "supports."

The moral of all this, it seems, is that we cannot afford to rest our faith too closely upon the lessons of a single campaign or the traditions of a single country, but that we should avail ourselves of the universal past in our military preparations for the future.

An erroneous impression prevails abroad that the average theatre of war in Europe is not adapted to the practice of American cavalry methods, on account of its more dense population and scarcity of timber. But it was a peculiarity of our great war that every existing condition on the face of the earth became, at one time or another during those eventful four years, a factor in the problem.

*Cavalry War Lessons*

COL. THEO. F. RODENBOUGH

## 50 Years Ago

The Indian Service, which made such men of our cavalrymen a few years ago, is past and gone, and we must make something fill the place, even though it may be artificial warfare.

Is it possible, then, that we are going to allow our branch of the service to become stale and degenerate, relying on our instinctive knowledge of war? Are we going to wait until we are forced by disasters to change our methods? Does any one think that it is not within our power to institute the proper system?

Surely, intelligent officers must agree as to the importance of rousing ourselves to action. It means work, and lots of it, but it is splendid, healthy, manly work, that no cavalryman worthy of the name should fear.

We must not be dismayed by obstacles. We must press forward, with the determination to practice war constantly, and thus become, what we undoubtedly would be, the finest cavalry in the world.

*Practical Work for Cavalry*

CAPT. H. S. HAWKINS

## 25 Years Ago

The Infantry, which has had control of the Tanks for the past eight years, is building up an excellent Tank School organization. If the Mechanized Force is organized as an off-shoot of the Infantry, existing facilities can be expanded to meet the demands for trained personnel. However, since the Infantry absorbed the Tank Corps a marked change has occurred. Modern tanks are not the blind lumbering monsters of ten years ago; increased mobility has prepared them for cooperation with many branches—particularly with the Cavalry and the Air Corps. In other words, the tank is no longer an exclusively infantry weapon. A larger sphere of action is opening up for fast tanks, and for any mechanized units that may be built around them. To imbed these highly mobile units in slow moving masses of infantry would be wasteful. We cannot expect infantrymen or cavalrymen to specialize on mechanization in addition to their other duties; and yet without specialization of a high order, mechanization will land in the ditch.

If the Mechanical Force is to develop its full powers, it must depart from the old methods. It must break away from traditions which were fixed before the advent of fast powerful fighting machines, and seek new ways to apply the old principles. Before it can win a place as a worthy member of the combat team, it must develop new methods which are better than the old. An organization to be useful for this purpose should be one that is committed entirely to the future.

*Mechanization—Aloft and Alow*

MAJ. C. C. BENSON

## 10 Years Ago

Although the most valuable quality of the cavalry is its extreme mobility, that of the mechanized forces exceeds it. How effective then is close coordination of the horse and the motor, which is widely practised in the Red Army? The principle of Soviet tactics in the employment of cavalry is not to be influenced by the respective merits of horse and motor but by their aggregate merits.

It is not difficult to imagine the force represented by a cavalry and tank group raiding deep behind the German's lines. The tanks, moving on the flanks and in the vanguard of the cavalry, break down the enemy's resistance. When the defenses are very strong, the cavalrymen dismount and, supported by their artillery, attack like infantry with the tanks. Then, mounting again, they regain their mobility and set off together with the tanks in hot pursuit of the retreating enemy.

*Cavalry as Offensive Arm*

COL. P. KOLOMEITSEV  
*Red Army*



## NEWS NOTES

### Armored Units Moving

Two armored units stationed at Camp Carson, Colorado, are being transferred to Ft. Knox, The Armored Center, late in March. The 11th Armored Cavalry Regiment and the 547th Armored Field Artillery Battalion are the two units involved in the move.

They are two of several units that will move from Camp Carson to other posts within the United States.

Also scheduled for transfer shortly is the 3rd Armored Cavalry Regiment. It is being shifted from Camp Pickett, Virginia, to Ft. Geo. G. Meade, Maryland.

### Fourth Armored Division Association Reunion In June

The Fourth Armored Division Association will hold its Eighth Annual Reunion at The Shoreham Hotel, Washington, D. C., during the period 24, 25, and 26 June. For further details contact Mr. Frank Arrotta, 1719 Crestwood Drive, Alexandria, Virginia.

### Sixth Armored Division Association Reunion In September

The Sixth Armored Division Association will hold its Seventh Annual Reunion at the Penn Sherwood Hotel, Philadelphia, Pa., during the period 2, 3, and 4 September. For further information please contact Mr. Edward F. Reed, 6th Armored Division Association, P.O. Box 492, Louisville, Kentucky.

### Patents Pending

Two soldiers 6,000 miles apart invented virtually the same device for tightening tank tracks, at about the same time.

The new method—developed independently in Germany and at Camp Polk, Louisiana—saves time and manpower. It reduces the job of tightening tank tracks to three minutes. Previously it took five men and a tank retriever three hours.

Master Sergeant Edward J. Mordush of the Sixth Armored Cavalry Regi-

ment, Germany, slipped a special attachment on the wrench normally used to tighten tracks. Backing the tank automatically tightens the track.

A few days after Mordush's device was perfected, Major Eugene O. Allen of 386th Ordnance Battalion, Camp Polk, completed plans for a similar device.

### Top Command Changes

A late Pentagon news release, received as ARMOR was going to press, announces the assignment of Brigadier Generals Robert L. Howze, Jr. and Edward G. Farrand to United States Army Forces, Far East.

Brigadier General Charles V. Bromley, Jr., Deputy for Civil Administration in the Ryukyus Command, will replace General Howze as the Assistant Commandant of The Armored School.

Brigadier General George A. Rehm, Deputy Chief of Staff for Plans, 7th Army, has been assigned to the 1st Armored Division, Fort Hood, Texas replacing General Farrand as Assistant Division Commander.

Seventh Army Headquarters has announced Brigadier General Hamilton H. Howze, Assistant Division Commander of the 2d Armored Division, will replace General Rehm.

### Exercise Spear Head to Provide Training In Armored Operations at Fort Hood

Exercise Spear Head, a field training maneuver designed to provide training in armored offensive and defensive operations, will be conducted early in May at Fort Hood, Texas, the Department of the Army announced recently.

Major participating units will include the 1st Armored Division and other supporting units. The total strength of participating forces, including simulated enemy troops, called Aggressor Forces, will be approximately 22,000 men.

Under the supervision of the Chief of Army Field Forces, Lieutenant General John E. Dahlquist, Spear Head will be directed by Lieutenant General I. D. White, Commanding General of the Fourth Army.

Armored operations will predominate in Spear Head, which is scheduled to begin May 3 and end May 19. The Tactical Air Command, with Headquarters at Langley Air Force Base, Virginia, will provide close air support, aerial resupply and aerial reconnaissance.

Among the important training aspects that will be stressed during the Exercise are simulated tactical employment of atomic and chemical weapons, and defense against atomic, chemical, biological and radiological weapons. Units will also receive training in defense against Aggressor air attacks, land mine warfare, night operations, logistical support to include aerial resupply and supply during darkness, anti-guerrilla and anti-sabotage procedures, tactics, techniques and electronic countermeasures.

In addition, the 1st Armored Division will test tactics, techniques and new equipment, including the Patton M48 medium gun tank and the new M59 carrier for Armored Infantry.

### Red China Tanks

Communist China has sent tank units into the Indochina theater to fight alongside the Communist Vietminh forces, a nationalist news agency reported recently.

The Chinatone News Agency said 37 tanks made in Manchuria had been rushed into front-line action in war-torn Indochina.

### Armor for Red China

Communist China will have the "beginning" of a highly armored modern army within two years, according to a Peking military blueprint reported recently by the Nationalist Chinatone News Agency.

The agency said Soviet Russia has agreed to furnish its Chinese satellite with modern weapons and undertake training of 100,000 Chinese troops in "armored warfare methods." A total of 850 tanks was now in the process of being transferred by Russia to the Communist Chinese armed forces, the report said. Training in the operation of these tanks would start immediately on their arrival.



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# THE BOOK SECTION

This work is considered a "must" for  
the basic military nature of Com

**SOVIET MILITARY POLICY.** By  
**Raymond L. Garthoff.** 587 pp.  
Free Press. \$7.50.

Reviewed by  
**GARRETT UNDERHILL**

No member of the armed forces can deem himself a soldier, sailor, or airman, until he has mastered this book.

No politician can deem himself a statesman, until he has mastered, at the very least, the first three chapters of Part I.

For this is the first thorough, documented, scholarly work on Soviet thinking on wars cold and hot. It is the first thorough job on how this thinking grew, and what it has become. It is a background absolutely indispensable for those who would figure out the working of the Soviet mind, so as to get the better of it. It is totally different from past works, which have so grievously neglected Soviet military literature and Soviet official doctrine.

This work is a "must" for statesmen as well as soldiers because of the basic military nature of Communist thoughts and actions, as Dr. Garthoff makes so clear in his first chapter (*Soviet Strategy, Military Doctrine and "Cold War,"* with its subdivisions on *Politics and War, Soviet Strategy, and Cold War*).

Without mastery of this work,

Americans cannot hope to attain any surety of continued success in the now-recognized "long haul" of the struggle with Communism. It is rightly said that one must know one's enemy, and as Mr. Walter Lippmann has written the reviewer:

*"I am sure it is impossible to overestimate the importance of knowing as thoroughly as possible the Soviet military doctrine. We paid heavily in-*

deed in World War II because we didn't know the enemy military doctrine well enough."

In the reviewer's considered opinion, based upon fifteen years' connection with G2 of the General Staff of the U.S. Army, Mr. Lippmann's completely correct observations apply also to what has happened since World War II. U.S. losses, and those to America's friends and allies, appear to have been due in great part to that ignorance of the enemy's ways of war, which is so chronic in America and her military institutions.

The loss of the Chinese mainland to the Reds—including the complete outmaneuvering and final surrender of the American-trained Nationalist New First Army; failure to provide either adequate armor or anti-armor weapons in the Far East before Korea began (apparently because authorities assumed U.S. doctrine to be universal, and hence subconsciously felt the Reds must think Korean terrain as unsuited to armor as Americans did, although the presence of 35-ton T34 tanks in North Korea was known); failure to understand Red thinking about ground operations in the face of superior airpower, despite the U.S. Army's possession since 1945 of the Soviet Russian training films of World War II, demonstrating the methods later used to foil air interdiction in Korea; failure to appreciate that the Chinese Reds meant

## The Author



Dr. Raymond L. Garthoff, a specialist on Soviet affairs, has been a member of the staff of The Rand Corporation since 1950. A graduate of Princeton University, he earned his master's and doctor's degrees at Yale.



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# all soldiers and statesmen because of munist thoughts and their actions.

business about entering the Korean war, despite the fact that such intervention seemed silly to our thinking, after the lifting of the siege of the Pusan perimeter, the Inchon landing, and the defeat of the North Korean Reds; failure to appreciate Red thinking which combines both political and military moves in a single doctrine, which failure resulted in America's falling for the Red Chinese truce talk offer, when at last General Van Fleet's 8th Army had the Reds licked again—all these failures might well have been averted, had this opus been available earlier, and thoroughly mastered by our soldiers and statesmen from lieutenants to generals of the Army, from Congressmen to cabinet chiefs.

Had this book been ready earlier, it would have been quite unnecessary for General Omar Bradley to make the remarkably honest and forthright confession, on the part of his three colleagues on the Joint Chiefs of Staff as well as himself, which was published in *The Saturday Evening Post* last August:

"We four were professional military men, brought up in an America safe behind its oceans, and trained in the concept that war is war, and peace is peace. The idea of 'cold war'—a world-wide pressure, tension and creeping aggression, directed by an implacable and secretive tyranny—was almost as new to us, as to the

American public. And a further Soviet technique, war-by-satellite, was not to be unveiled until the attack on South Korea ten months later."

Indeed, it may appear fantastic to some, that so great a man as the General would make this confession for himself and the Chiefs of Staff—for had not (as Dr. Garthoff makes clear) the debates in Russia on the development of Soviet politico-mili-

tary doctrine been a matter of public, published debate? Had not the growth of the Red Army to the largest ground force ever, been patent since 1927 debates over the Five Year Plans designed to produce the economic base for the Reds' "New Look" in armed forces? Had not able U.S. attaches reported on such progress in the 1930's? Had not the Reds made available to us their official literature during the World War II period, and provided an avalanche of manuals and official periodicals, which was supplemented by what the West took from the German G2 files?

However, from a practical viewpoint, two factors must enter into any appreciation of the General's invaluable confession.

One is, that since World War II, on the example set by General George C. Marshall and our President, General Eisenhower, there has been a frankness of revelation, so that those to come may learn and profit by study not just of past events and actions, but (*far more important*) by the *attitudes of mind, and thinking, behind those events and actions*. Both General Marshall and President Eisenhower are men fortunately endowed with a great sense of history, as their organization and protection of the Army military history setup so well proves. To enable Americans to learn from past actions, they have exhibited vast and too-little-appreciated great-

## The Reviewer



Jean Raeburn

Garrett Underhill served as the Chief Editor of the Military Intelligence Division of the Army during World War II. A frequent contributor to *ARMOR*, he is a recognized expert on the Armed Forces of the Soviet Union.



ness, in letting us in on this thinking. General Bradley has not only followed this example, but expanded on it.

All in all, things are very different from the post World War I period, when great figures like the late Field Marshal Haig were anxious even to cover up events themselves, not to mention the thinking that led to error and disaster. America's World War II military leaders have not only been revealing the facts on events, but baring their minds at the risk of having their war-established reputations diminished by history, just so that America may profit from their experiences.

The nature of the revelations of our 1939-53 leaders themselves provides the basis for the second factor governing appreciation of General Bradley's confession, and its relation to the requirements for Dr. Garthoff's book. *Examination of these revelations, and of the military events of the past two decades, indicates an extremely serious basic deficiency of mind-training which, as regards America, is national rather than military in origin.* Unfortunately Dr. Garthoff himself has not taken into account this deficiency, and hence his book loses considerable value in consequence.

The deficiency is so basic, that very few even realize that they suffer from it, or that the nation as a whole does, too—just as the baneful effects of vitamin deficiencies weren't once understood, because no one had heard of vitamins.

*The root of the deficiency is in American education and basic philosophy.* The defect is basically civilian, dangerously affecting the mind prior to military training.

As Captain B. H. Liddell Hart has demonstrated, French and American political philosophy (and hence public education, and national attitudes, civil and usually military) derives from the Age of Reason in the 1700's. The thinking behind America's Declaration of Independence and Constitution is just that—a *priori* thinking, by sheer ivory-tower exercise of an apparently logical mind on what ought to be. It's out of Rousseau, who figured out that man in a state of nature would be just about perfect—although Rousseau and others who glorified "natural man" had never met one, and Rousseau could be very un-

pleasant indeed in real life if his breakfast coffee wasn't hot.

These rationalists had things figured so that there must be a right way for everything, if you could only work it out. They thought there were goals of absolute perfection, for significantly the Age of Reason was one of great, unbounding faith in man. It was the birth period of present-day science, and a time of a strong anti-religious trend. This is important, for religion, unlike reason, stresses that man is a very fallible being.

Politically, this all has meant that Americans have tended to think they have the answer, or can find it. It has led to a lack of understanding that other people have their ways, and are by no means convinced that America's are best.

Militarily, this all has had immense impact and influence. It has caused people to make the unconscious assumption that approved doctrine is the only doctrine—along the lines of the thinking behind the Mohammedan religious saying that there is no God but Allah and Mohammed is his Prophet. Hence, America's chronic neglect of intelligence. Hence, Americans' failure to sense in their inner minds, that others don't necessarily think or react as do Americans. A perfect example was the completely unwarranted assumption by intelligence agencies until 1951, that other forces used the same basic and advanced training system as the U.S. Army, although the Russian has, both in Imperial and Red Army forms, followed the German yearly training cycle pattern of training in troop units.

Hence, too, the American tendency to neglect the time factor, for while the Soviets make sure their manuals stress the date in their short-form designation, in order to avoid giving the impression of the timelessness of doctrine (as in *BUP 42* for the 1942 version of their *INFANTRY COMBAT REGULATIONS*), America's *Field Service Regulations, Operations* editions fail to stress the date, and are known simply as *FM 100-5*. And (as Dr. Garthoff makes clear) unlike their Russian counterparts, new editions of U.S. field manuals do not stress, in a foreword, the basic changes made and the reasons therefor.

This time-factor neglect is serious, for (again as Dr. Garthoff makes

clear) the Soviets have always been at pains to stress the changing face of war, and therefore of the doctrine. They have not only recognized intellectually the need for such change, and the fundamental philosophical weakness of any assumption that absolute goals are possible; in the formative period of Red military doctrine (Garthoff, p. 27), Major General Svechin, formerly of the Czar's Army, stressed that formulation of military doctrine was a dangerous matter, for formal fixed official doctrine inhibited progress, especially that achieved by disagreement and debate.

Perhaps the most serious result of the unrecognized influence of the Age of Reason on American military thought, is the fact that use of *a priori* logic (ivory tower-type, as opposed to that constructed from, and justified by, man's vast experiences) tends to false confidence in "absolute weapons."

Indeed, it is no accident that just that term was popular around 1946 throughout the country. Dr. Bernard Brodie, an exemplary product of the American educational system, even chose *The Absolute Weapon* for his book, attempting to establish that the atom bomb was just that.

Although practical experience (and three wars in which atomic weapons not only weren't "absolute," but weren't even used: Greece, Indo-China, Korea) disabused many Americans of that view of the atomic bomb, the same sort of thinking crept back into full vogue again, with the "New Look" and its reliance upon massive retaliation by (this time) thermonuclear weapons.

As can be understood after even a comparatively simple study of philosophy, the Age of Reason influence in America (and England, as well as France) is bound to lead people to favor over-simple forms of warfare that aren't true to the complexities of real life. Thus practical soldiers, whose long experiences have led them instinctively to doubt such absolutist theories, are fighting two hundred years of American education when they try to impose their views.

Moreover, as has been indicated, the very intellectual basis of American military thinking (as inevitably carried over from civilian teaching, which American military men are im-



bued with in grade and high schools, and which also applies in the military academies) is against the practical military men. Moreover, the latter lack a worked-out philosophy around which to marshal their ideas.

America's practical military men cannot have the successes of American business, which was operating on the basis of practical experience before the European theories of the Age of Reason took over. These business practices are sort of tribal customs which America is continuing to build up. Their empirical base appears to explain why American businessmen do excellently in business, but when they come to Washington, and start operating on *a priori* theories of politics and military art, they sometimes don't do any better than the bureaucrats and generals with whom they previously have found fault.

While Dr. Garthoff makes evident the *dynamic approach of the Soviets to war and politics*, he has not yet had opportunity to note Liddell Hart's point that the Russian military, like the German, are able to do this because of the fact that their basic military (and in the Soviets' case, political) thought is strongly influenced by Clausewitz. Soviet political thought (as Dr. Garthoff makes evident) also is strongly influenced by Clausewitz, for the Communist pioneers, Marx, Engels, and Lenin, read and admired the Prussian who died an untimely death of cancer.

Hence, because of its Kantian-Clausewitzian base, Soviet politico-military thought and doctrine is basically different from America's—and that is all-essential fact that American authorities have got to appreciate, in order to sense the utter necessity and urgency of mastering the Garthoff opus, and to avoid repeating the errors which General Bradley and others have confessed for our benefit.

Now Clausewitz's true influence is little appreciated in France, Britain, and America, because these "Age of Reason" countries don't appreciate that Clausewitz was an amateur of the German philosopher, Kant.

Kant came after the Age of Reason boys, such as Locke, Hume and Rousseau. His basic, great work was the *Critique of Pure Reason*. He saw the fallacy of absolutes, except as intellectual reference lines or goals. It's all right to use absolutes for orientation,

one might say of Kant's view, but in practice the absolutes may be neither attainable nor even desirable goals.

Applied to the idea of total war, for instance, this concept means that total war is good to bear in mind, but conditions can be such as to result in ruin if war is conducted totally. Hence it can be better to do nothing. Thus we have *relatives* stressed rather than the *absolutes* in this sort of thinking, the practical, rather than the ideal.

Unfortunately, the writings of the Prussian theorist Clausewitz were only dry runs on applying Kant to military theory. He hadn't meant them to be published, and authorities like Liddell Hart regard these writings as possibly very dangerous—what is needed is for another military man to work over philosophy and do a really bang-up job.

Still more unfortunate is the fact that Clausewitz's Kantian dualistic thinking (his completely flexible handling of absolutes and relatives) isn't at all what Americans and usually Frenchmen and Britishers have been prepared intellectually to appreciate. Liddell Hart has made a good point when he noted that most of the nationals mentioned don't even recognize the existence of the relativist element which actually is most important in Clausewitz's theories. This recognition, it is true, is obscured by the fact that Clausewitz had a knack of phrasing his absolutist statements in a way that had, and has, great appeal for military actionists. The actionists tend to register these phrases and quote them without the all-important relativist reservations of Kant in a dualistic philosophy.

All this isn't just hot air and theory. *It's a matter that vitally affects America's ability to keep the upper edge in wars cold and hot, and to maintain an edge in armament and in doctrine.* It explains why America keeps pursuing will o' the wisp military idealistic theories like strategic bombing as the only way to win wars. It's the "why" of the "absolute" weapons and "New Looks"; the "why" of ill-advised absolutist war goals like "unconditional surrender," or of attempts to draw distinct lines as to what are military, and what are political decisions. It explains why, in contrast, Russia doesn't believe in "One Weapon" absolutist theories.

America's theory is that which, in Ordnance specifications and Field Forces' Military Characteristics Requirements, delays and often makes impossible the development of practical, economical new armament—*because the goals set are too ideal, too absolute*. It's the cause behind the production of a costly vehicle, whereas the application of practicalism may make possible the rapid production of a much cheaper model which might have new tactical assets of an almost miraculous nature.

For incredible as it may seem, the theorizing of a neurotic Frenchman a couple of hundred years ago is the root cause of America's trouble with the Ordnance material put into production since Korea. It's the root cause of America's inability to produce lightweight vehicles for airborne use when money became available upon the outbreak of the Korean war, despite all the glowing promises made between 1945 and 1950 that our Army would become an airborne one. It's the root cause of American authorities repeatedly being surprised by Soviet arms progress, as with the atomic and H-bombs and the MIG fighter and Il-28 bomber.

Since Dr. Garthoff's book repeatedly makes clear the dynamic nature of Soviet military doctrine and thought, its highly practical nature, and the interworking of political and military factors in wars cold and hot, study of this book may well help to convince American authorities:

1. *That the Soviets think differently from Americans, and dangerously differently;*

2. *That the Kantian-Clausewitzian basis of Soviet thought and doctrine is more in line with real-life practicalities than American theory—more in line with unstated American business theory; hence it affords the Reds certain basic advantages, but also affords Americans plenty to learn.*

And there should be no shame in learning, as Dr. Garthoff makes evident in giving the historical background of Soviet doctrine. The Russians have had great armies and have fought great wars for many centuries; they have far more experience than Americans, both with the theory and practice of maintaining large forces in times of quasi-peace.

In this connection the recent revelations of Guderian in *Panzer Leader*



need stressing, for in that work the author of the remarkable West Blitz of 1940 tells us that he astounded the world, and won his victory in jig-time over forces superior in manpower, matériel, and training, because *he knew thoroughly the enemy, his ways, forces, and psychology.*

If knowledge is power—as Guderian proved—then Dr. Garthoff's work may potentially be worth more than our supply of atomic and thermonuclear weapons, for it gives us an insight into the working of the Soviet politico-military mind. To defeat that mind, as history tells us, we needn't blow Russia to hell—and take ourselves along with it, perhaps. All we need to do, is think and act so that the highly- (perhaps overly-) intellectual Soviets are impressed, and consider that mentally we may be their masters.

In short, the stockpiles of weapons aren't what should count, but the fact that our generals can get the drop on the Reds' generals, and so on right down the line to the squad leader.

But we can't begin to win, if we don't begin to know how the Reds think. We can't impress the Reds with our power, if our power is arranged so as to impress not Reds, but Americans, thereby causing the Russians to think that ours is an "adventurist" military doctrine and policy, as fallacious in concept as in practice. (For definition of what an "adventurist" policy is, see Dr. Garthoff's work.)

Dr. Garthoff's work, however, should be regarded as only a starter, a stopgap, a finger stuck in the dike. It should serve only as an aid to professional military men, who (especially aided by the marvelous bibliography) can plan their own program to steep themselves in the post-Kantian thinking of major Russian and Red thinkers like Frunze, Shaposhnikov, and Stalin.

This book should also indicate that America's military need much more on Russia's pre-Clausewitzian, and native, military thought. As Dr. Garthoff makes evident, the influence of Russia's past is strong, even upon Red thought. Suworov, the great soldier under Catherine the Great, voiced the training concept (p. 49) of "Hard on training, easy on the battlefield," which was re-introduced beginning with the 1948 training cycle, to fit Soviet forces for the physical and mental strains of the pace and hard-



Sovfoto

## SUVOROV

ships of atomic age war.

Dr. Garthoff's book is, as he concedes, far from perfect, and for that reason, the reader deserves two aids:

1. *An explanation of the background of the work;*
2. *A guide to the errors.*

The background of the book is that Dr. Garthoff, in his work on Russian studies at Yale University, found a vacuum as regards Soviet military doctrine. Although he lacked military experience in any of the armed services, he was determined to fill this vacuum.

The need was critical. Indeed, it is a sad thing for the Army that this young man, on his own initiative, and then with the aid of RAND (a U.S. Air Force sponsored research corporation) undertook what should have been a work basic to American politico-military planning and operations since 1945, and should have been readied by the War Department by that year, instead of by the Garthoff-Rand effort in 1953.

Remarkably, during the 1947-50 period the vacuum as to Soviet military doctrine became greater rather than smaller, the study of Soviet tactics being neglected after the departure of Colonel, also Doctor, Dmitri Shimkin for the Harvard Russian Center. Certainly there was no effort in any way approaching that of Dr. Garthoff as regards thoroughness, documentation, and scholarly accuracy. Some think there was lacking even the beginnings of an appreciation for the effort, and especially for a scholarly one.

For this the intelligence reserves, including the reviewer, were un-

doubtedly far more responsible than the Regular Army. The reserves were well aware of the need, both for the work and the method, but failed to sell appropriate authorities. Since the publication in 1949 of General Bradley's book revealed convincingly the basic defects in high-level attitude toward intelligence of this sort, particularly on the part of many people brought up in the "between wars" period, the urgent need both for the work, and strong measures to put it across became apparent. But this was not done.

Civilian authorities on Russia and the Reds failed to appreciate the need, apparently because of the fundamental defects of the American educational system, which has neglected the study of war. As a result, American scholarship led the military away from military scholarship in Russia, instead of fostering it. Unrealistically unmilitary American scholarship even now has a blind spot as to the basic military nature of Russia's politics, economy, industry, and people.

Probably a good case could be made, to hold the British Fleet of the 1800's ultimately responsible for America's neglect of the study of war in general, and of Russian military matters in particular, since from 1812 on, British sea power chose to shield the American people from the grim realities of war, and only the South maintained any sort of touch with reality—because of its Civil War experience.

Hence while the Garthoff work does suffer from not having been prepared by one with military background, and might have been a far better thing had Dr. Shimkin been sponsored by Rand, America is lucky that young Garthoff saw his duty and did it when no one else would.

Future editions and works undoubtedly will appear, and be superior.

*The errors*, especially from the armor viewpoint, deserve considerable attention.

*The Preface*, by Professor H. A. DeWeerd, must be ignored, as it is said to have been written under some pressure; certainly it totally reverses one of Dr. Garthoff's main points, which runs throughout the book, for Professor DeWeerd is under the delusion that Communist political doctrine makes Soviet military doctrine inflexible



The "up-to-dateness" of the book is highly questionable. It had best be termed a *History of Soviet Military Doctrine and Thought*, for the main reliance is upon World War II doctrine and that of the 1930's.

Unfortunately Dr. Garthoff's manuscript closed at a time which made it impossible to capitalize upon research work resulting from the recall of trained specialists as a result of the Korean war. Hence in particular he does not take into account the radical and startling change in the proportion of mobile warfare armored-type divisions to infantry, which began in 1947. He missed a briefing to troops by General Gerasimov, published in a 1946 *Military Herald*, which was sent to America while she and Russia still were friendly, and which covered the New Look as Russia saw it, but was lost for years as a result of an economy-enforced Army personnel cut in 1947.

On page 61, the author does note a report that the Soviet Chief of Staff had formed, in 1949, a "Bureau for the Study of Modern Warfare," which when coupled with the big war history effort (dating from 1942), and the remarkable studies of and publications on foreign forces (the last point is not dealt with in this fine book), may well presage ill for the West.

*Misconceptions of Mobile Warfare* characterize the book.

"Armored Forces" are placed after "Infantry" in Chapter 19, *Employment of Ground Forces*. Dr. Garthoff did not understand that in the Soviet Army, the Tank and Mechanized Troops are in a sense a sort of separate army. Actually, they are staffed, equipped, and trained to operate at a higher tempo than conventional troops. The Tank and Mechanized Divisions' command and staff wear the black-and-red shoulder board of the T&M Troops' arm, and the troops of the Tank Regiments and Mechanized Infantry and Motorized Infantry Regiments do likewise. Only the towed artillery regiments, engineer battalion, etc., in general support, wear shoulder boards appropriate to their conventional arm or service.

Dr. Garthoff fails to remark, and hence does not discuss, the significance of the predominance of mobile warfare divisions in the Soviet forces in Germany, which (it has been

stated publicly by American and British officials) have 20 of their 22 divisions Tank or Mechanized. The "Mechanized Armies" (armored corps) into which many of these divisions are organized, are neither mentioned nor discussed.

The common error is made of failing to appreciate that the Soviet "Mechanized" division is merely an equivalent of the German *Panzer-grenadier* division, which was strong on armored infantry, and weaker on tanks than the *Panzer* (armored) divisions, i. e., weaker on shock action, and stronger on ground-taking and -holding than the armored division, but able to fight mounted in mobile warfare, unlike the conventional infantry). The "Tank" division is merely the Soviet version of the German *Panzer* and U.S. armored divisions.

Dr. Garthoff makes a serious error, quite understandable in a tyro in these matters, in not recognizing the significance of the "pocket brigade" type of organization of these divisions' Tank Regiments. He also makes the error of considering that the Tank Division "has a relatively weak complement of infantry (about 2000 men)" (p. 308). As a result, he fails to note that the "Automat Battalion" of each tank regiment is an infantry outfit, which raises the number of infantry battalions in the Tank Division to more than in the U.S. armored division. The same error is made in the case of the Mech Division.

This error in thinking about Russian divisions still persists in far too many places, despite the efforts of Armor's Colonel (now General)

Hamilton H. Howze to correct it. It has led to false confidence concerning the Soviets' supposed need to move in infantry before their forces in Germany can strike West. Hence it is especially unfortunate that this error has been carried over into the book, and that Dr. Garthoff did not discover the facts until too late.

Obviously (and especially from the writings of Gersimov and Rotmistrov, when these are combined with the atomic warfare organization theories of America's Colonels Rheinhardt and Kintner) there's great meaning for modern-type atomic warfare in these Soviet mobile divisions, with their "pocket brigades" in the form of so-called "Tank Regiments." It is a tragedy Dr. Garthoff didn't note this and go to work on it.

Another error in dealing with armored warfare is the failure, also common, to realize that Soviet SU's (self-propelled guns) are tanks, built for the same sort of employment as German assault artillery, but developed by the Soviets to be the prime armor *vs* armor weapons.

In view of the proclaimed fact that at least 65 of Russia's reputed 175 divisions are tank or mechanized, there's no basis for the statement on p. 309 that "Current Soviet doctrine on the employment of armor emphasizes the use of large tank formations in close combined operation with the infantry."

The roles of the Tank and Mechanized Divisions (p. 144) are misunderstood, and what's said about them should be completely ignored.

*Lack of an Account of Service Controversies.* Although the Soviets are far more prone to hot military debate in their publications than are Americans (who follow "military party lines" much more rigidly than the Russians), these discussions are neglected. Only the great doctrinal debate of the 1920's is considered.

*The Armor Controversy* is missed. This is most unfortunate because the Western World can do with considerable thinking and study on what has been going on in Russia in this respect. It is plain that while Russia started out ahead in the 1930's, by the time of World War II the tide had turned against armor within Russia. It kept that way, despite the success of the German *Panzers*, until after Harry Hopkins' visit to Stalin in July,



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1941. Then it swept the other way, with the armor advocates obtaining protection from misuse of their major units (as did the Germans), by obtaining direct Stavka (the General Staff) supervision of their commitment and use.

Dr. Garthoff does note and quote from the works of Marshal Rotmistrov, who advocated more armor towards the end of World War II, as he had in 1940. But the book fails to recognize the apparent victory of armor in Russia in 1947, and its apparent recognition as the atomic age mobile form of land warfare. It omits all note of the pressing questions of the day. These questions are:

—What of the controversy, as of the last few years?

—Why have some Soviet authorities gone on writing as if armor, aircraft, and atoms didn't exist, and the slugging matches of massed forces of World Wars I and II could happen again? Why, when others like Rotmistrov and Gerasimov, are up to (or ahead of) thinkers elsewhere?

—Just who are the conventionalists? Does the reappearance of General Zhukov and certain artillerymen, and the death of Stalin, mean anything as regards this mobile-atomic warfare business?

For ideas and thinking are people, and ideas rise or decline as people rise in influence and manage to get a grasp on key jobs.

*Too Much Stalin.* Stalin, who was going strong at the time of manuscript preparation, seems to have been regarded by the author and RAND as there to stay. As a result there's a singular lack of thinking of what the effect may be of his demise. Considering the case made for Stalin's bo-constrictor grip on all things military in Russia, the effect of Stalin's passing may be so sweeping as definitely to make this book either of historical value only (albeit still absolutely "must" reading, prior to a second, up-to-date work) or else of greater currency, if the "conventionalists" are returning to power.

*Meeting Engagements and Mobile Warfare in General.* Dr. Garthoff concludes that the Soviets neglect this sort of warfare, perhaps because he couldn't find all that's available on it. However, it is true that Soviet literature abounds with material on the 1943-45 period, when static fronts

existed. The 1941 campaigns naturally must be neglected by the Reds since whole armies then were dissipated by the Germans, although these were campaign days of mobile, open warfare often very unlike the later days.

Nevertheless the Soviets do teach meeting engagements. The role of forces in this phase of warfare is most significant for Americans, and it is a great pity that this wasn't gone into. Considering what the opening days of war probably will be like, the lack of meeting engagement doctrine and practice is very serious (only 20 lines), the more so since the U.S. Army itself is very dangerously over-preoccupied with the Soviet "breakthrough" type of



ROTMISTROV

operation on which so much material is available, because of the 1943-45 era Soviet historical effort and the fine work done on that by our Army's Colonel Dr. Shimkin. *Mountain Warfare* deserves far more expert handling and understanding. It's a highly specialized subject, but an important one, because of the mountain masses which lie between the Reds and free nations from Burma back to Italy.

The Soviets sure fouled up in this area in World War II, and some explanation is due as to what, if anything, they're able to do about it, and if not, why not? The West still needs some explanation of why the Russians haven't got as far along on mountain warfare, as nations like France, Germany, Austria, and Italy,

although it was the Russians' experience in and around the Shipka Pass in 1877-78 which touched off the whole mountain warfare business. *Winter Warfare* is very inadequately handled, and best not studied by readers. This is another complex subject which deserves far more study than afforded by RAND, for it is known already that the Soviets' attitude toward, and conduct of, winter warfare is very strongly influenced by traditionalism. It's known that, as with mountain warfare, they have been able to get just so far, and no further.

It is certainly remarkable that while the Germans made tremendous strides during the winters of 1941-42 and 1942-43 (ending up ahead of the Russians) the Russians in their 1943 doctrine stuck to their tentative 1939 doctrine, which actually antedated their dreadful Finnish 1939-40 Winter War experience. Moreover the Russians learned practically nothing from the Finns despite years of experience with Finnish ski warfare.

As for trying to put hordes of infantry on skis, and for trying to teach recruits skiing in a few hours per year (as is now still to be noted in the Russian countryside in winter), it's as fantastically futile as trying to teach mountaineering roping up and down, on the few hours given this work on ordinary infantry training programs. Since this sort of thing continues (and even official photos issued, that bring forth cries of outraged anguish from skiers and mountaineers), there's lard-headedness and lack of realism somewhere in the Soviet War Ministry, and it's a pity Dr. Garthoff hasn't sniffed it out and exposed it. For the West must be ready to exploit the Soviet's weak points, where—and whenever they exist. As it is, there's too much of a myth about Soviet Arctic abilities. *Night Fighting* may well be a Soviet strong point. It could have stood more development than in this book, because of the security which (the Soviets claim) night offers against hostile observation and smarter, if not heavier, firepower and aviation. Indeed, the cover factor of night is not even mentioned by Dr. Garthoff, although often it was a paramount factor in the Soviets' planning. Night has been mentioned by Gersimov as perhaps the best time to fight in the



future, especially if weapons and equipment are developed therefor. The author makes no mention of the Germans' taking the Russian tanks by surprise with Panthers with Owl equipment (infrared vision), or of infrared possibilities, although Gersimov has dealt with this factor, as well as with the possible effect of radar location of artillery and mortars.

There are many thought-provoking items in this book. Not the least is the fact that, although this work was U.S. Air Force sponsored, it fails completely to come up with any justification for certain air protagonists' claims about the Soviets and strategic bombing. The only major challenge to official thinking dealt with, is Marshal Rotmistrov's strong advocacy of more emphasis on armored warfare.

It is sad that more wasn't made of the peculiar "Zone of Naval Superiority" theory, which would help demonstrate the very little recognized point, that the Russians don't think "navally" like the Americans or the Germans. Development of this Soviet doctrinal concept might have helped still the fallacious idea that the Soviets will inevitably attempt a submarine commerce-raiding war, like the Germans. Coast defense theory and practice is also an omission to be regretted by a sea power like America, with its primacy in amphibious operations.

It's sad, too, that there couldn't be more both on airborne forces and on what (if any) effect jet-powered tactical aviation will have on air support in Soviet doctrine. Since the Soviet MIG is fitted for strafing, and can make high-Mach number dives from altitude like the F-86F Sabre (unlike the gliding F-84 Thunderjets and the F-80's), it would have been most interesting to see what's cooking along doctrinal lines. The material given is very "World War Two-y," and that's nine to thirteen years ago, a passage of time World War II veterans are too prone to forget.

In general, it may be said that Part I is hot stuff, invaluable, and generally timeless.

Part II (*Soviet Principles of War*) is to be approached with caution, and read largely as historical background, to give a basis for present and future thinking.

Chapter 12, which stresses the use of combined arms, and the fallacy of

the single weapon, deserves reading by those who are over-enthusiastic about bombing and the like, and who would have the Soviets follow in America's military footsteps.

Chapters 13 through 18, of Part II, are decidedly inadequate. RAND appears to have assigned too much of a job, for each of these subjects is highly important, and deserves far more thorough treatment. It is often little understood by directors of publication projects that the preparation of a precis, or short chapter, requires just as much study as a major work; and that compressing is more of a job than writing a long form.

In Part III, Chapter 19 on *Employment of Ground Forces* is bad, for rea-



SHAPOSHNIKOV

sons in addition to those previously cited. This applies to Chapter 22, *Special Combat Conditions*. The rest of the chapters in this part have considerable value as at least historical background, or base.

The organization appendix is somewhat outdated, but excellent as of the date of publication, and hence valuable to afford the range of Soviet organizational thought.

Invaluable to military men should be the bibliography, and especially its *Notes on Soviet Periodical Military Publications*.

The challenge to military scholars presented by that bibliography, with its indication of the wealth of material available even in unclassified form, should completely upset current

and persistent ideas that there's nothing available on the Reds.

The fact is that the Armed Forces, including reserves and National Guards, along with the Regulars, have been badly shown up by this young Yale man, who saw the need, and went ahead on his own, following in the best traditions of Colonel Louis B. Ely (who also has distinguished himself by a similar feat of personal literary enterprise with his *Red Army Today*) and Lt. Colonel Robert B. Rigg (who did *Red China's Fighting Hordes*).

Deficient as this book may be in various respects, it's not going to be enough for officers to gloss over it. The knowledge in this book, and most especially the historical background (to date) of Soviet military thought and doctrine, should be far more vital to every man who values his country and loved ones, than the comics and the sports pages.

Maybe Dr. Garthoff doesn't have the style of a Grantland Rice or a Shirley Povich. Nevertheless this is the only work you can now get on the team you may have to play against, in the greatest game in history. The book is broken down nicely into parts, so that it should form excellent literature. Indeed it deserves to be read and thoroughly grasped by sections, for Part I, at least, is a part you've got to know.

Only by knowing this material and, it is to be hoped, more and better material to come, can we avoid repetition of the disasters, the loss of life, matériel, and territory which have too often unnecessarily occurred in the past. More than that, we can attain that wished-for objective of obtaining and maintaining the initiative at all levels.

But you can't count on getting any initiative (much less hope to maintain it) unless you have a sound idea of how the other fellow thinks, and how he got to think that way. Only with two such reference points—*historical* (and plenty on that), and *current*, can you safely project into the future, and do what Americans should do: outfox the Reds every time.

*Victory by Brainpower* should be America's objective, for that's the way to get the most effective defense. This book will start us on the road to such a victory.



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## LETTERS to the EDITOR

### Any 4th Armored Division Historians?

Dear Sir:

First, on behalf of the Armor students and staff at A&M College, I would like to congratulate you on the many fine articles which appear in ARMOR. The articles supplement some of the courses of instruction.

Second, I have a question which has been asked me by some of the Armor students. In the March-April issue of ARMOR, there is a casualty list (page 10) which compares Armor and Infantry casualties and other pertinent data.

It was observed by the students that only one (1) man assigned to the 4th Armored Division was captured during 230 days of combat. They would like to know the circumstances surrounding the incident, if possible.

Please don't make any detailed search for this information, but if you have it readily available, I would appreciate information concerning the capture.

Thank you for any assistance you can give us.

CAPT. FRANCIS J. BLOOM

Mil. Science Department  
Texas A&M College  
College Station, Texas

• The chart appearing on page 10 of the March-April issue was checked against the official records of the Office of the Chief of Military History, Department of the Army, and found to be correct. In addition several members of the 4th Armored Division were queried about this particular incident but we were unable to shed any light on the matter.

As most combat veterans are cognizant of the fact that many times in

combat men are reported missing in action until confirmation of the actual capture is reported it is quite possible that the official records of the 4th Armored Division could very easily reveal such an unusual oddity. If anyone has knowledge of this particular incident it would be appreciated if they notify this office. Our office force is too small to scan the entire World War II history of this fine outfit which will soon be reactivated. If we can ascertain the approximate dates involved we can call on the OCMH, D/A and check the details.  
—Ed.

### Attention R&D !!!

Dear Sir:

I have been an avid reader of your publication for quite some time. However, there is something that has been kicking around in my mind for lo, these many years.

Now, I know that there must be something wrong with this idea of mine or it would already be in use, but for the life of me I am unable to see it.

Why not an armored tracked vehicle (without a turret), and with a two-man crew? One can drive and fire the bow-gun, and the other to load, gun, and also do what little reconnoitering is necessary? The advantages are many.

Without a turret, the silhouette would be practically nil. The gun, a seventy-five or seventy-six millimeter, need only traverse about sixty degrees, and the ammunition supply needn't be large, principally caliber .30, plus approximately twenty rounds for the gun. Re-supply of ammunition could be handled by Battalion or possibly Regiment (Infantry). Better yet, why not mount a recoilless rifle on it? That would lessen the am-

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munition supply problem, for these vehicles would be attached or assigned to the Infantry. They could be used both in the final assault on the objective, and in defense. They could be used to clear paths through antipersonnel mine fields, and to ferry ammunition and rations to forward positions exposed to enemy fire. On return trips they could bring the more seriously wounded back with them.

Can you imagine the many other uses to which they could be put? Delaying actions, such as roadblocks; overrunning an enemy position along with the infantry, as the artillery and mortar fire is lifted? (That last one or two hundred yards has always been a headache.) Come to think of it, they would come in handy at times as mobile O.P.'s.

The use of this type tracked vehicle would possibly free the Regimental Tank Company from such duties as acting as artillery, ambulances, and pillboxes for the Infantry Regiment, and enable the combining of these numerous Tank companies into Battalions or possibly Armored Divisions, which could better meet and destroy any massed, fast-moving enemy armor that we would surely be faced with in the event the ripe plum of Western Europe should prove too tempting a target to the people in the Kremlin.

Obviously there are disadvantages to this, but wouldn't the advantages far outweigh them?

The Infantry wants and needs close-in armored support for attack and defense. This would give it to them, but not at the expense of parceling out our Armor in "penny-packets."

I am extremely interested to know what other, more experienced Armored people think of this.

SGT. J. E. RHOADES

Co A, 628th Tank Battalion  
APO 35, c/o PM, N.Y., N.Y.

## Regarding Membership

Dear Sir:

I have just finished reading my third issue of ARMOR (March-April) and find it the best of the three I have read to date. They are all excellent I might add.

My purpose in writing this letter is to determine my privileges and status as to my membership in the United States Armor Association as it pertains to voting and attending the annual meetings. I would like to have attended the meeting held this past January but my lack of knowledge as to that possibility held me back. If possible I would like to attend the next meeting.

I am an R.O.T.C. student at Norwich and hope to make the Army my career upon graduation.

ALAN B. BUCHAN

Norwich, University  
Northfield, Vermont

• A copy of the Constitution has been forwarded but for the benefit of all concerned the various classes of members are herein stated. All classes of members are entitled to attend the annual meetings but only active members may hold office and only active members may vote.

"2. The qualifications for membership are as follows:

"a. Active Members: All general officers of the Regular Army or Army of the United States; and all officers and warrant officers assigned to, detailed in, or serving with Armor shall be eligible. Excepting general officers, any change in official status from any one of the above described conditions

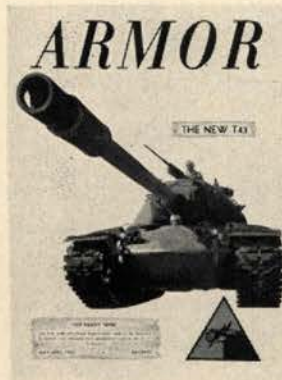
# The German General Staff

by

Walter Goerlitz

The first comprehensive history of the Prussian and later German General Staff from its earliest beginnings in the Thirty Year's War to the German unconditional surrender in 1945. The Modern German General Staff with all its vaunted uniformity of purpose and action was subject to many different intellectual and political strains and tendencies. There were aloof and cold technicians, warmhearted, emotional men with European conceptions, fanatical Nazis, gullible dupes, and true idealistic aristocrats like Stauffenberg.

\$7.50



## THE COVER

At long last the Department of Defense partially removes the wraps from the Army's latest and biggest tank—the T43. Conceived in 1951, this heavy tank joins its smaller brothers in the mobile field—the M48, M47, and M41. Mounting a high velocity 120-millimeter gun the T43 should prove its worth against any tank produced in the world today.



will serve to terminate Active membership on the last day of the calendar month within which the change has occurred, and the individual concerned shall assume the status of Associate member.

"b. Associate members: Those transferred from Active membership and all other present and former commissioned officers, warrant officers and non-commissioned officers of honorable record in the military, naval or air service, shall be eligible.

"c. Honorary members: Persons distinguished in military, naval or air service or learning shall be eligible upon election by a majority vote of the Executive Council. Such members shall not be subject to the obligations of active or associate members nor entitled to the right either to vote or to hold office. Otherwise they shall have the privileges of members, including the privilege to attend meetings and to engage in discussions.

"d. Junior members: Students of the Service Academies, Military Schools and ROTC institutions shall be eligible. Annual dues shall be at a reduced rate as determined by the Executive Council. Such members not to be entitled to vote or hold office; otherwise they shall have the privileges of members."

My father's address was: Jesse W. Finney, ASN 6453875, A Troop, 14th Cavalry, Fort Sheridan, Illinois during the period 1920-23.

He is presently living at 916 Meadowview Avenue, South Bend 28, Indiana.

Any information that you may receive will be appreciated.

MRS. CHARLES BROWN  
1024 North Kensington Ave.,  
South Bend, Indiana

• We don't run a locator file or column as a rule. However, if there are any ex-cavalrymen around who might know this gentleman he can be contacted at either address shown above.  
—Ed.

As reported in the last  
issue,

the feature book review

for May-June

would be

"The Fall of the Philippines"

by Doctor Louis Morton

of the Office of the Chief of  
Military History, D/A.

We have secured a name  
reviewer to do this review  
for our next issue.

His name

Maj. Gen. C. A. Willoughby

He served as General MacArthur's G2 throughout  
World War II and is presently  
writing a book on his  
former Commander—  
General MacArthur.

### A Real Legend!

Dear Sir:

For some years I was a member of Cavalry R.O.T.C. and National Guard units (horse) and I developed quite an affection for the mounted service. As I remember, old-timers used to tell stories about a "Colonel Tommy Thompson" and his exploits. I assumed that this person was a mythical character, but upon reading my local newspaper I saw the enclosed article, indicating that he was apparently very real.

25 Years ago from the *Waxahachie  
Daily Light*

"Col. Tommie Tompkins, one of the army's most picturesque soldiers, is expected here for a visit with Troop C and friends of other days, it was announced today by Dan Newman, former Captain of the local Guard unit."

Do you happen to have information on him? I realize that you are not now concerned with horse Cavalry but I would appreciate any help that you might give me.

ROBERT F. KNOX  
ex-56th Brigade

Waxahachie, Texas.

### Back to the Roarin' Twenties

Dear Sir:

I received your address from *The Washington Star* whom I originally wrote to locate former buddies of my father. The suggestion was made that you may have a locator file column.

## A PREVIEW OF OUR NEXT ISSUE

Read in the  
July-August Number  
of ARMOR . . .

### Armored Leaders—Production

Style  
by

Lt. Col. James W. Cocke

### A Pictorial Spread

50 Years  
of

Tanks and Tractors

### Organization and Employment of

The Armored Division Trains  
by

Colonel Alfred H. Hopkins

### The Fighting Potentialities of a British Armored Division

by

Major General L. O. Lyne,  
British Army





FRONT ROW: (L-R) McMartin, Breeding, Massaro, Anthis, Moses, Eitel, Diller, Hudachek. 2nd ROW: Gilbreth, Brodt, Wells, Wagner, Acers, Darling, Reed, Washer, McGuire. 3rd ROW: Dennis, Ballantyne, Randall, Gomez, Haskell, Delamain, Aitken, Burnett, Halvatgis. 4th ROW: Combs, Wooge, Vinson, Hart, Bonner, Partridge, Vesser, Healy, Sullivan, Ley. 5th ROW: Thompson, Paprocki, Dyer, Palmer, Beringer, Neu, Roderick, Eberhart, Shaw. Missing from photo: Left insert Carroll and right insert Wisniewski.

## UNITED STATES MILITARY ACADEMY: CLASS OF 1954 ARMOR GRADUATES

**F**ORTY-SEVEN cadets of the 1954 graduating class at the United States Military Academy will be commissioned in Armor on the eighth of June and begin their military careers in this mobile arm. After graduation and leave they will report to Fort Knox for the Basic Armor Officer's Course. Upon completion of this course they will be assigned for command duty to armor units within the United States or overseas. It is interesting to note that, due to the close coordination between the Armor Career Management Branch and the Chief Armor Instructor at the Military Academy, each of the cadets knew prior to graduation what his station assignment would be upon completion of the basic course.

Branch quotas at the Military Academy are allotted each year on a proportional basis dependent upon the overall strength of each particular branch within the Army. Cadets of

the graduating class make their choice of branch based on their class standing until all quotas are filled. In this year's class the last cadet able to choose Armor ranked 386 out of 636 graduates.

During the four-year course at the Military Academy, cadets receive instruction in Armor which encompasses organization, communication, tank gunnery, and basic tactics. They also have an opportunity to familiarize themselves with the newest equipment available to armor units since the Armor Section at West Point is equipped with M-41, M-47 and M-48 tanks. The time allotted for the above subjects is limited, but is sufficient to establish a good foundation in armor doctrine and principles. Those cadets who choose Armor as their branch receive additional training during their unscheduled time, directed toward preparing them for the Basic Course in Armor. All of the instruction is de-

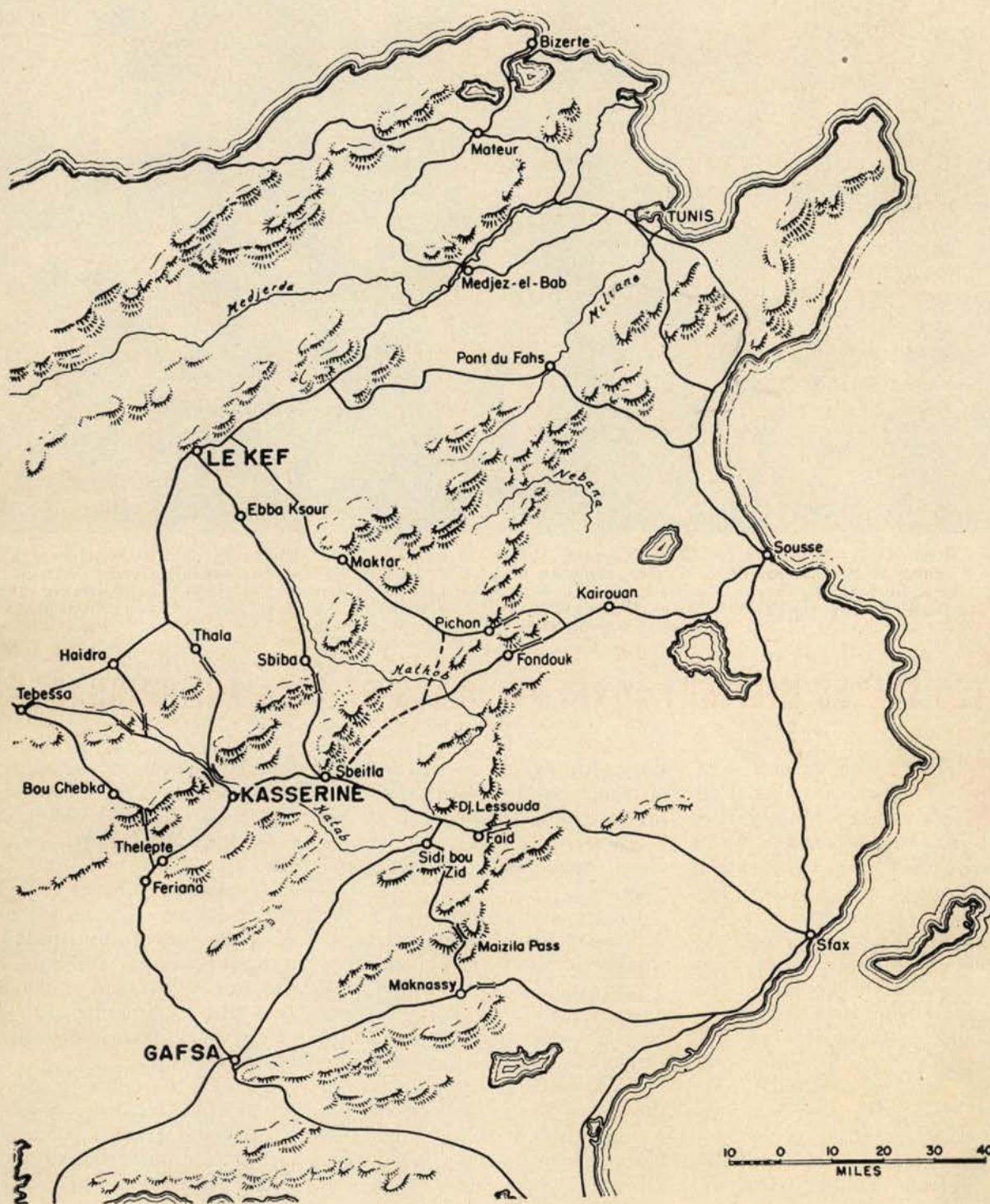
signed to create and instill in each cadet a frame of mind based on the offensive spirit and flexibility so necessary for successful armor commanders.

The armor instruction at the Military Academy is conducted by the Armor Section, Combat Arms Detachment, 1802d Special Regiment. Major Kenneth R. Lamison is the Senior Armor Instructor and Captain James A. Day and Captain Vincent Gannon are his assistants.

Each of the armor graduates received a personal letter of congratulations and welcome from Major General J. H. Collier, President of the Armor Association, on behalf of the entire membership.

Many of these cadets have been junior members of the Association and regular readers of *ARMOR Magazine* for some time and all in Armor are happy to welcome them as full active members.







# THE AXIS OFFENSIVE IN CENTRAL TUNISIA—FEBRUARY 1943

BRIGADIER GENERAL PAUL M. ROBINETT

*The author, commander of Combat Command B, 1st Armored Division, relates how the Germans pushed the Allied Forces out of Kasserine Pass and how we reacted to this setback, turning the tide of battle against our then more experienced enemy.*

## General Situation

**H**AVING lost the race for Tunis the Allied High Command attempted to secure and hold the Eastern Dorsal, a mountain line running generally north and south, as a line of departure for further action to the east. The elements of the French Army that had succeeded in retreating to the west upon the Axis entry into Tunisia and other elements brought up from the west were the main forces deployed on the Eastern Dorsal south of Pont du Fahs. Mixed British and United States troops held the line farther north while elements of the United States Army moved up to support the French in the south and to eventually relieve them while they were being re-equipped. The French equipment was light and obsolete; there was a great shortage of machine guns, mortars, and artillery, and transportation was largely horse-drawn. Their troops included a large

proportion of horse cavalry but the animals were in poor condition. The limited, inefficient railway transportation, used to bring up additional French troops could have been better utilized to bring up American troops, if the political situation would have permitted. Movements to the front were made in a methodical fashion: all feeling of urgency seemed lacking as it always is when aggressive leadership is lacking.

By a series of violent, limited objective attacks the passes through the Eastern Dorsal gradually fell to the Axis forces. The last to fall was Faïd, which was lost on 1 February 1943. An attack by Combat Command A (CCA), 1st Armored Division failed to restore the position lost by the French; thus the stage was finally set for the first act in an operation that had been germinating in the German High Command as the Axis forces withdrew westward before the British Eighth Army. It also put at rest a nebulous but ambitious Allied project to break out onto the coastal plain and prevent the junction of Axis forces in Tunisia under General Juegen von Arnim with those withdrawing from Tripolitania under Field Marshal Erwin Rommel.

Rommel planned to move back quickly before methodical General Bernard L. Montgomery, and while covering his rear with a defensive force on the Mareth Line join armored elements of his own and von Arnim's Fifth Panzer Army. Then, acting upon interior lines, he proposed to strike via Tebessa deep into the rear of Allied forces in Tunisia and force them to withdraw. He would then turn and defeat the British Eighth Army. Von Arnim had other ideas which contemplated a more limited thrust in central Tunisia towards Le Kef and then an attack towards the northeast in conjunction with an attack to the west by the German Fifth Panzer Army with a view to turning the right flank of the British First Army and throwing it back to the west. These conflicting views were never entirely reconciled and a faulty command system on the Axis side subsequently led to friction and contributed to the ultimate breakdown of the Axis offensive.

## The Terrain and Climate of Central Tunisia

Before taking up the operations it is best to get a clear picture of the ground over which they were fought

BRIGADIER GENERAL PAUL M. ROBINETT, a frequent contributor to ARMOR, served as the commander of CCB, First Armored Division in Tunisia during the early days of World War II. He is presently Chief of the Special Studies Division, Office of the Chief of Military History, Department of the Army.



and of the weather encountered. This is important because the terrain is the fixed chess board upon which operations must be conducted in any given area.

The area, which must be considered in arriving at a proper understanding of the operations in central Tunisia, is roughly the region included within a north-south chain of mountains known as the Eastern Dorsal, dominating the coastal plain to the east, and a western chain of higher mountains, running roughly southwest to northeast, known as the Grand Dorsal. These two mountain chains form an imperfect V which is closed on the south by another mountain mass running east and west with one major pass near the oasis town of Gafsa. The two ranges join in the hill mass south of Pont du Fahs.

Both mountain ranges are extremely rough and sharp in places. They are broken by passes—the all-important military features which must be considered by both defender and attacker in the solution of strategic and tactical problems. The passes have been formed by ages of erosion by the streams which generally run from west to east through the Eastern Dorsal and northwest to southeast through the Great Dorsal. The erosive effect of the streams has dictated the alignment of the principal highways, which in turn run generally east to west through the Eastern Dorsal and northwest to southeast through the Grand Dorsal. The best highways are thinly black-topped. Others are dirt and therefore muddy in wet weather and extremely dusty in dry. Many of the traces shown in red on our maps were mere camel trails and hard to find on the ground.

On the western side of most of the passes through the Eastern Dorsal are found isolated hill masses standing like sentinels commanding the exits to the west. Similarly, to the east of the Grand Dorsal is found a secondary chain of hills commanding the approaches to the Grand Dorsal from the east but with an important opening from the south near Feriana and another at the north near Sbeitla, both of which are important road centers. Much of the intervening terrain is a flat plain frequently broken by deep-cut stream lines which tend to restrict cross-country move-

ment. It is also a region of violent winds and storms. Windblown sand deposits and sand dunes exist in a number of localities and tend to restrict movement and in some cases to almost prevent it.

Some olive and almond groves near stream lines, wheat on the low uplands, and pastures for goats, donkeys, and camels on still higher areas, cactus plantations in terrain too rough or arid for planting, constitute the agriculture of the area. In the southern part are a few cases with date palms, almonds, and eucalyptus trees but the region is much less fertile than areas farther north. The area is devoid of forests except in the higher regions of the Grand Dorsal which are covered by scrub growth and some pine of fair quality. Many of the mountains reach a height of over 4,000 feet and Djebel Chambi and Djebel Semmama, standing at the shoulders of Kasserine Pass, are 5,064 and 4,447 feet high, respectively.

The better agricultural lands are generally in the hands of fairly prosperous French farmers. The indigenous people are mostly primitive Arabs and live with their animals at a low subsistence level. In 1943 they were in extreme poverty.

Winter is the rainy season. At that time the plains, which would be a desert in other seasons, may become a slithering morass and a serious handicap to all cross-country movement. February might be regarded as early spring in central Tunisia. But spring in that area is not entirely a matter of season; it is also a matter of latitude and altitude. During the period of the Axis offensive, February 1943, the weather was extremely variable. Wind, rain, hail, and snow were encountered. But at times the days were mild and warm if one were in the sun; but cold if one were not. It is always cold in the shade in North Africa. There were sandstorms and dust, but mostly rain and mud. Sometimes the troops moved from an area of blossoming almond trees to snow-covered pine forests in the mountains. The Axis armored forces, dressed in summer uniforms, were generally attacking from the warm sunny lowlands to the rain-soaked heights beyond. It must have been a depressing experience for troops habituated to the desert as Rommel's were.

This then is a general picture of

the strange land in which the battles of central Tunisia were fought.

### Situation in Central Tunisia

The Allied high command received word of a projected Axis attack towards the west early in February but expected it to fall at Fondouk.<sup>1</sup> On 18 January General Dwight D. Eisenhower, Commander in Chief of the Allied Forces, recognizing the necessity of protecting the area of eventual junction with the British Eighth Army in southern Tunisia, authorized "small raids and minor tactical actions" but no moves that could throw the Allies "off-balance."<sup>2</sup> We shall see how this worked out. He also recognized the fact that the poorly equipped French troops on the Eastern Dorsal could be maintained in their positions only by the efforts of United States and British troops thrown in to plug gaps in the long lines.<sup>3</sup> This plugging inevitably led to an exaggeration of Gen. Kenneth A. Anderson's tendency to disregard the principle of tactical unity and resulted in a further scrambling of the forces of three nations and to complications in command channels. This, in turn, contributed to command by conference, to weak and conflicting directives, to poor planning, to successive usurpation of the normal prerogatives of subordinates throughout the chain of command, and to interference in minute tactical details from remote headquarters. All of this together with the lack of "showing the face" at the front tended to promote uncertainty in the minds of an uninformed command.

Only two splitup armored divisions, the U.S. 1st Armored Division, Maj. Gen. Orlando Ward, and the British 6th Armoured Division, were available to the Allied command, which in all higher echelons lacked experience in the use of such troops. The British division was in process of changing to American tanks. Only a part of these divisions had had serious battle experience. Combat Command B (CCB), 1st Armored Division, Brig. Gen. Paul M. Robinett, had had the most. Air-ground cooperation was lacking or ineffective.

The hard core of CCB was a closely knit force. The medium tanks of the 13th Armored Regiment, generally a part of CCB, were mostly obsolete M3s. Those of the remainder of



the 1st Armored Division were M4s. The primary weapon of the M3 was a side-mounted 75mm gun with limited traverse. This tank was extremely vulnerable in a running battle or in a withdrawal. German tank and anti-aircraft guns were vastly superior to those of American tanks at that time. Tank-infantry cooperation was then rather poorly developed in CCB as indeed it was throughout the U.S. Army. On the other hand the coordination of tanks and artillery was highly developed as it was throughout the 1st Armored Division. On certain occasions Headquarters, CCB was really the fire control center of the entire combat command and all key personnel had been schooled in the adjustment of fire.

The Allied command's tactical problem involved holding a mountain line of over 115 miles with relatively weak forces consisting mostly of French and recently arrived Americans. The passes were all in the enemy's hands and he could take the offensive at any one of a number of places.

The stage was set and the enemy intended to strike with his mobile forces. These consisted of the revitalized but understrength German 10th and 21st Panzer Divisions, and a combat group made up of troops from the German-Italian Panzer Army with attached elements of the Italian *Centauro Division* commanded by the DAK (*Deutsches Afrika Korps*—German Africa Corps) headquarters, and the Italian *Centauro Division*. The German Divisions were commanded by experienced panzer leaders and were made up of skilled veterans of countless armored fights. Their best guns, both tank and anti-tank, were superior to those of their adversaries. They had reduced tank-infantry and air-ground cooperation to a science but their artillery support was woefully weak.

On the night of 28-29 January 1943 CCB, having been pulled out of successful battle in Ousseltia Valley, marched south and joined, for the first time, the 1st Armored Division in the Bou Chebka forest east of Tebessa. The division, except for Combat Command A (CCA), Brig. Gen. Raymond E. McQuillin, at Sidi bou Zid and Combat Command D (CCD), Col. Robert Maraist, at Gafsa, was then in a rest area. CCB

had had a wealth of experience since the initial landing in faraway Oran but it was understrength and its equipment, mostly obsolete, was very badly depleted and worn. It was, therefore, no rest period for this organization, but one of intense activity. The very brief rest period was terminated when a series of confusing razzle-dazzle movements was initiated pursuant to the II Corps, Maj. Gen. Floyd R. Fredendall, concept of the Allied Commander's "small raids and minor tactical actions." The night of 30-31 January CCD moved east on Sened while Combat Command C (CCC), Col. Robert I. Stack, moved on the northern end of Maizila Pass prepared to attack south toward Maknassy. CCD captured Sened and prepared to attack Maknassy from the west in conjunction with CCC's attack from the north on 1 February. CCA counterattacked the enemy at Faïd but failed to win its objective and the Germans improved their hold on the pass as the combat command took up a passive defense, in accordance with detailed corps orders, on Djebel Lessouda and Djebel Kasira with the tanks in support near Sidi bou Zid. On the night of 1-2 February CCB was suddenly ordered to the vicinity of Hadjeb el Aioun under Corps control with no mission. After making some progress on 1 February CCC's attack at Maizila Pass was

cancelled and it was ordered to the vicinity of Hadjeb el Aioun while CCB moved the same night to Maktar in British First Army reserve. CCD resumed the attack on Maknassy 3 February but it was called off in midafternoon. After defending the high ground east of Sened until 5 February it withdrew under orders to Gafsa. The sharp German thrust at Faïd Pass put an end to these "small raids and minor tactical actions" and the stage was set for larger operations to follow. To students of mobile warfare these operations should be of great interest because they were largely fought by armored forces.

During an inspection tour to the U.S. II Corps front on the eve of the impending attack, the Allied Commander found certain things that disturbed him, such as complacency; delay in perfecting defenses, lack of training and experience of commanders, and a tendency to ignore previous experience in the theater, experience which the vast majority of the troops present had not shared. He directed certain corrective measures but it was then too late,<sup>4</sup> because by that time defensive measures were limited to fencing off the western exits of German occupied passes. This was clearly beyond the capabilities of infantry and artillery supported by a limited number of tanks. In an area of plains





divided into compartments by mountain barriers, even the best infantry could only delay at the risk of total destruction unless supported by very strong armored elements and even then might merely become a magnet that would lead to the destruction of armor bent on rescue missions.

A far more drastic decision was indicated the night of 13-14 February 1943 as General Eisenhower stood at the headquarters of CCA, 1st Armored Division, near Sidi bou Zid, looking into the black night towards Faïd Pass where the enemy's bloody valentine was being readied for delivery at dawn.

General Eisenhower had previously visited Headquarters, 1st Armored Division, near Sbeitla where by mere chance the commander of CCB, then in First Army reserve at Matar, happened to be conferring with the Division Commander.

The CCB Commander, General Robinett, had given his estimate to General Ward, Commanding General of the Division, and was asked to repeat it to General Eisenhower when he arrived. In presenting his views he argued that there was no evidence from reconnaissance on the ground to indicate an enemy attack at Fondouk as was expected but that available information suggested an attack at Faïd Pass. He pointed out the untenability of the Eastern Dorsal line under conditions then existing and the futility of piecemeal effort to hold it, and concluded that the position had lost its importance for the time being and should be given up that very night. He further invited attention to the effectiveness of the German high velocity weapons in the wide open terrain of Tunisia with at least the inference that Allied tactics should be adjusted accordingly. This, however, was probably but one piece of advice General Eisenhower got. At the other extreme, perhaps, were the views of the local French commander, once charged with the defense of the pass, who said, "Now that General Eisenhower is here and the Americans are in force, the situation will be restored!"

#### Battle of Sidi bou Zid

As some had expected, the road center of Sidi bou Zid became the focal point for a German attack which was launched through Faïd Pass

and the Maizila Pass to the south. General von Arnim's chief of staff, Maj. Gen. Heinz Ziegler, had been given command of the operation under the German *Fifth Panzer Army* commander. He had the *10th Panzer Division* which had moved down from the north and the *21st Panzer Division* which had moved north from Rommel's army. His information of the terrain and of the allied defense position was complete and he planned accordingly. He had observed, no doubt, that the troops on Djebel Lessouda and Djebel Kasira were not mutually supporting. He planned to destroy CCA and attached troops preparatory to further action to the west.

The attack from Faïd Pass started at 0630, 14 February, with the *10th Panzer Division* tanks leading. Lessouda was surrounded by 0900 and the artillery in position west of Djebel Kasira was driven back in hurried retreat. As the mobile element of the *21st Panzer Division*, by a wide swing through Maizila Pass, made the envelopment from the south, the 3d Battalion, 1st Armored Regiment, Lt. Col. Louis V. Hightower, first counterattacked the armored task force to the north.

It was completely outgunned by the German tank and antitank guns, and fell back. Later, by skillfully fighting, it held up the enveloping force from

the southwest until Headquarters CCA and other elements of the combat command withdrew. The German enveloping forces met west of Sidi bou Zid at 1730. Remnants of CCA assembled near Djebel Hamra near which General Ward had posted a small task force. By nightfall most of the tanks and the artillery had been lost and the troops on Djebel Lessouda, and on Djebel Kasira were cut off and surrounded. The German commander sent out light reconnaissance parties and proceeded to clear up the Sidi bou Zid area. Rommel later criticized the *Fifth Panzer Army* for not promptly pursuing the Americans towards Sbeitla. "Tactical success [he said] must be ruthlessly exploited. A routed enemy who on the day of his flight can be rounded up without much effort may reappear on the morrow restored to his full fighting power."<sup>5</sup> Ziegler's failure to pursue gave the U.S. II Corps an opportunity to bring up reserves for counterattack and led to the second phase of the operation.

General Eisenhower reached General Fredendall's II Corps Headquarters from Sidi bou Zid on 14 February and found General Anderson there also. He approved a decision to hold the Pichon-Fondouk area and to withdraw the troops at Gafsa to Feriana. In a rather vague directive that "covered the water-





front" General Anderson instructed Fredendall to concentrate 15 February on clearing up the situation at Sidi bou Zid, to destroy the enemy, to collect a strong mobile force in the Sbeitla area ready for action in any direction, and to press defenses ordered on 7 February. He also released the 2d Battalion, 1st Armored Regiment, Lt. Col. James D. Alger, from CCB. On release this battalion was attached to CCC by General Ward and ordered to join it near Hadjeb el Aioun.

CCC was drawn from a number of organizations of the 1st Armored Division, some joining as the unit marched south to counterattack. The commander had a poor map and a general idea of the terrain from personal observation. He also had limited information from participants in the previous day's battle which led him to believe that the enemy had about 60 tanks and supporting troops. The mission prescribed by General Ward was as follows:

This force [CCC] will move south and by fire and maneuver destroy the enemy armored forces which have threatened our hold on the Sbeitla area. It will so conduct its maneuver as to aid in the withdrawal of our forces in the vicinity of Djebel Kasira, eventually withdrawing to the area north of Djebel Hamra for further action.

Colonel Stack, the commander of CCC, rightly believed it was necessary to push through Sidi bou Zid to bring off the troops on Djebel Kasira.

CCC closed in an assembly area near Djebel Hamra before noon and launched its attack at 1240, 15 February. Ziegler's forces were in position to meet the attack and prepared to strike it in flank from both the north and the south of the oasis village of Sidi bou Zid. Stack deployed the combat command with tanks in a V formation leading, followed by artillery and armored infantry with tank destroyers covering the flanks. The command post remained on Djebel Hamra which had a view over the entire region. The isolated units on the distant djebels furnished information of the enemy to the 1st Armored Division; this was relayed to CCC and then to the advancing units. The attacking force

was repeatedly bombed and strafed as it maneuvered slowly towards its objective. An observer was impressed by the apparent power of the combat command as it advanced towards its objective, trailing plumes of dust behind each vehicle. At about 1600 the leading tanks crossed the third and last wadi and soon entered Sidi bou Zid. The enemy then sprung the fire trap and by 1645 the 2d Battalion of the famed First Regiment of Dragoons was destroyed and numerous black plumes of smoke drifted skyward from burning tanks. The thin-skinned remnants of the combat command were soon in hurried retreat towards the west.<sup>6</sup>

A considerable number of men from Djebel Lessouda and a few from Djebel Kasira escaped to the west during the night of 15-16 February. Others were killed or captured while trying to escape.

But again the German commander failed to pursue.

#### The Battle of Sbeitla

As the counterattack at Sidi bou Zid ground to a halt and was thrown back into hurried retreat when the tanks were destroyed, General Eisenhower was approving General Anderson's belated recommendations for an Allied withdrawal to the Grand Dorsal. At 1700, 15 February, U.S. II Corps was directed to extricate the infantry, to secure Sbeitla, Kasserine, and Feriana, and to prepare to engage an enemy moving west or southwest from Pichon-Fondouk. CCB was released to U.S. II Corps which promptly released it to the 1st Armored Division. General Fredendall instructed the CCB commander to "Move the big elephants to Sbeitla, move fast, and come shooting!"

CCB marched in two columns on Sbeitla and went into an assembly area northeast of the town shortly after daylight 16 February. The same night troops withdrawn from Gafsa were in Feriana. In the meantime both Combat Commands A and C were attempting to reorganize.

On 16 February the 21st Panzer Division moved on Sbeitla and the 10th Panzer Division on Fondouk. From its assembly area CCB could see the dust and smoke and the air action of a vast, running battle to the southeast. It was a confusing sight but was easily understood on the map

because it was headed for Sbeitla—the most important road center in central Tunisia. During the day the combat command moved across the flow of traffic and the deep streamline of the Sbeitla River into a defensive position south of the town. General Ward had decided to make an active defense and CCB was deployed accordingly. The ground was well known to this command for it had been there in corps reserve for quite a time. The tanks were placed in hull-down positions in sand dunes with a good field of fire. The artillery was well forward so as to secure maximum range, the tank destroyers covered the flanks. The reconnaissance troop was situated in higher ground on the right flank where it could see and report enemy movements, and the 2d Battalion, 6th Armored Infantry, Lt. Col. Elton W. Ringsak, protected a secondary pass on the extreme right flank. The command post was in rear of the tanks in a wadi and later in a cactus patch on a ridge overlooking the troop dispositions. There was not sufficient time for a reconnaissance of troop dispositions before dark. CCA was ordered to extend CCB's position beyond the Sbeitla River to the foothills while CCC was to reform north of Sbeitla. The 1st Armored Division was not advised how long to hold the defensive position.

During the afternoon of 16 February the German commander learned from a radio intercept that the Allies intended to evacuate Sbeitla. He promptly decided to attack with a task force of the 21st Panzer Division. The attack was initiated during the night of 16-17 February. While it was in progress the ammunition and supply dumps and the railway bridge at Sbeitla were blown up with a pyrotechnical display of the first magnitude. This must have convinced the enemy that the Allies were pulling out for he stepped up his attack. CCA was disorganized, thrown back in disorder, and streamed through the Sbeitla bottleneck in flight. Mine-laying detachments were driven from the field before their work had been accomplished. Elements of the 3d Battalion, 13th Armored Regiment, Lt. Col. Ben G. Crosby, covered the rear of CCA and withdrew under the tactical control of its commander. The artillery also dampened the



enemy's self-assurance. Ziegler then held up the attack of the *21st Panzer Division* until reinforcements arrived from Sidi bou Zid.

At 0130, 17 February, General Anderson authorized withdrawal from Sbeitla and Feriana. The U.S. II Corps authorized the 1st Armored Division to withdraw at 1100 but later changed this to withdrawal upon order. Col. Alexander Stark, 26th Infantry, was to hold Feriana until 1800, 17 February, but the DAK combat group entered it at 1200 after a hard fight.

The *21st Panzer Division's* attack on Sbeitla was not resumed at dawn on 17 February as the Americans expected. Later the Germans probed the north flank. Ziegler then switched his main effort to the south and, supported by tactical air, attacked CCB at 1145. The 601st Tank Destroyer Battalion was dispersed and thrown back in flight. The 27th Armored Field Artillery Battalion was in process of displacement by batteries at the time and the artillery support was woefully inadequate. The enemy closed in heading for the area where the 2d Battalion, 13th Armored Regiment, was posted in hull-down position. When the enemy tanks were at close range the battalion delivered volley fire on orders of Lt. Col. Henry Gardiner, the battalion commander, and knocked out or damaged an estimated 15. The enemy halted and pulled back under heavy fire. Then he shifted still farther to the south flank and continued his attack. In the meantime the north flank was threatened and a platoon of medium tanks was sent into Sbeitla and held that flank. CCB received orders to withdraw at 1430 and successfully disengaged at 1730, but in doing so lost nine tanks including Colonel Gardiner's. This battalion and its commander were in large measure responsible for the successful defense at Sbeitla. CCB retired in three columns on Kasserine where certain elements had already been sent to establish a defense covering the southern entrance to the pass. Vehicles were loaded with equipment that had been abandoned by other American outfits. The enemy did not pursue and the combat command refueled from the gasoline dumps near Kasserine before they were destroyed. It then

moved into an assembly area along the Thala road north of Kasserine Pass. Other elements of the 1st Armored Division took position in Sbiba Pass and covered the organization of that pass by other troops of the British First Army.

At the conclusion of the action at Sbeitla on 18 February the *Fifth Panzer Army* claimed: 2,876 prisoners, 169 tanks, 95 motor vehicles, 36 self-propelled guns, 19 antitank guns, 3 105mm guns, and 6 planes. These figures probably included Allied losses near Sidi bou Zid and Sbeitla but not Gafsa.

### The Battle of Kasserine

Following the battle of Sbeitla, Axis forces were busily engaged in reconnoitering the various passes through the Grand Dorsal from Ouseltia Valley to Feriana. The German commander sent elements of the *21st Panzer Division* to the north towards Sbiba and to the southwest to Kasserine where contact was made with the DAK combat group. Rommel sent the *Centauro Division* west to the Bou Chebka Pass. Much farther north a German task force moved on Maktar. When reconnaissance reports were available Rommel correctly estimated that the Allies were still on the defensive and that no counter-attack was to be feared. The time had arrived when a major decision had to be made by the *Comando Supremo* in faraway Rome which exercised strategic and tactical control in Africa.

In anticipation of an attack the Allied command was disposed to meet all possible threats. Fearing an envelopment from the southeast the 1st Armored Division, less detachments, was moved to the Djebel El Ma el Abiod line south of Tebessa from which it reconnoitered to the southeast. The French Constantine Division and important elements of the 1st Infantry Division were posted in the Bou Chebka area covering the pass west of Thelepte. A mixed and very weak force commanded by Col. A. T. W. Moore, 19th Engineer Regiment, was posted in Kasserine Pass with orders to organize and defend it. The mass of the U.S. 34th Infantry Division, with the 18th Infantry Combat Team attached, and the British Guards Brigade, with important tank

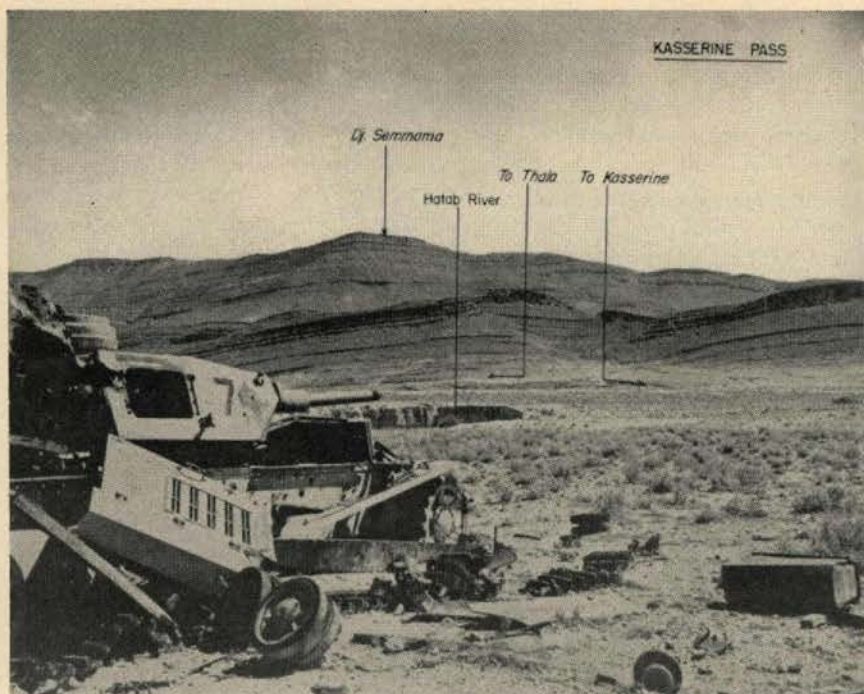
and artillery support, were posted in the Sbiba Pass.

On 18 February German reconnaissance at Kasserine Pass made some progress. At 2000 General Fredendall ordered Colonel Stark to proceed immediately to Kasserine Pass and "pull a Stonewall Jackson." In the meantime Rommel had received reconnaissance reports and was so optimistic that he requested authority to proceed with his plan of striking towards Tebessa and disrupting Anglo-American forces in western Tunisia. In general, Rommel's ideas were favored by Field Marshal Albert Kesselring, Commander in Chief South, but *Comando Supremo* was less sanguine. It modified his plan by changing the objective from Tebessa to Le Kef. When the answer arrived at 0130, 19 February, Rommel was irritated. He felt that his higher authorities "lacked the guts to make a wholehearted decision."<sup>7</sup> Rommel assumed command of the Axis forces allotted for the operation, which included the troops previously under Ziegler, and promptly ordered the DAK combat group to attack Kasserine Pass, *21st Panzer Division* to attack Sbiba Pass, and *10th Panzer Division* to reserve position near Sbeitla prepared to exploit success at either pass. *Centauro Division* was ordered to make a diversionary attack on the Bou Chebka Pass from Thelepte. Rommel established his command post at Feriana on the morning of 19 February.

Colonel Stark had barely arrived at Kasserine Pass that morning when the enemy attacked at 1100. The commander had no opportunity to visit the various commands or to organize a proper communications net. He realized, however, that his forces were inadequate and improperly located. The land mines on the enemy side had not yet been emplaced but merely scattered about. The commanding heights of Djebel Chambi and Djebel Semmama, on either side of the pass, were inadequately held.

The Germans were confident and made their attack straight up the valley. They were met by well-adjusted artillery fire and stopped. Rommel, who had moved forward to that sector, criticized the way Col. Otto Menton had attacked and directed Brig. Gen. Karl Buelowius to make





an outflanking attack on the pass. The mountain fighter of World War I, who will be better known in history as the Desert Fox, noted in his journal that "[Menton] should have combined hill and valley tactics and should have taken possession of the hills on either side of the pass in order to eliminate the enemy artillery observers and get through to the enemy's rear."<sup>8</sup>

Rommel then proceeded to the 21st *Panzer Division* in the Sbiba Pass and discovered that it had made the same mistake that the DAK had made. It had also made less progress than the DAK. He correctly concluded that the Allies were weaker in Kasserine Pass and decided to make his main effort there. The exploitation of a breakthrough at this point would, however, involve Rommel in a new problem dictated by the terrain. Two important roads join in the pass—one running north through Thala to Le Kef and the other northwest towards Tebessa with a secondary pass to Haidra. The deep-cut Hatab River also divides the area beyond the pass into two compartments. For reasons of security Rommel had to advance on both roads. If he could secure the Djebel el Hamra Pass on the road to Tebessa he could then proceed through the Haidra Pass and the Thala Pass with his western flank protected. This he decided to do.

Brigadier C. V. McNabb, Chief

of Staff, British First Army, visited Colonel Stark at Kasserine Pass on 19 February and was concerned about the situation he found there. It was foggy and rainy and the Germans lacked their usual air support but had made progress. By the end of the day they had gained a toehold on the shoulders of the pass and thus threatened the defenders. The pass was reinforced during the night of 19-20 February by miscellaneous units scraped together by U.S. II Corps. American and French troops were present at the pass and one squadron, British 26th Armoured Brigade, and the 3d Battalion, 6th Armored Infantry, were in reserve. Other elements of British 6th Armoured Division were in reserve north of Sbiba. Still somewhat skeptical of his ability to hold Kasserine Pass, General Fredendall issued a warning order to General Robinett, CCB, which concluded with the following: "In event of a penetration of the Kasserine Pass you will be prepared to move a portion of your division [sic] to counterattack in the direction of Bekkain [sic]—Dj Hamma [sic]—Haidra or Thala—Kasserine. . . ." He also moved Maj. Gen. Terry Allen and elements of the 1st Infantry Division into the Bou Chebka forest with a rather indefinite mission.

The Germans continued their attack during the night and resumed and strengthened it at dawn 20 Feb-

ruary. They had orders from Rommel to break through and this time went about the task in a professional sort of way. After a hold on the flanking mountains had been secured, tanks drove ahead on the road in the valley and the defenses crumbled. Here, for the first time in Africa, the Germans used their new rocket weapons with success. The roads to Thala and to Tebessa were opened and the defenders, including many of the reinforcements brought up during the previous night, were either killed, captured, or dispersed. Rommel threw in the 10th *Panzer Division*, directing it towards Thala, and sent the DAK on the road towards Tebessa with the mission of securing the Djebel el Hamra Pass covering the western flank. Again rain and fog restricted the activities of the Luftwaffe. Although they succeeded in making the breakthrough the Germans felt that the defense had been strong.

At 1030 General Fredendall ordered CCB, 1st Armored Division, to march without delay on Thala, and directed the commander to move out ahead and report to him on the road south of that place. Elements of the combat command were then on reconnaissance to the southeast of the El Ma el Abiod position as ordered by the division, but, nevertheless, the movement was initiated immediately on receipt of the order.

The combat commander met the corps commander as directed and was informed verbally of the situation and that the British 26th Armoured Brigade would defend the northern side of Hatab valley. He was instructed to turn CCB off at Haidra and to move southeast and secure the Djebel el Hamra passes, assume command of all troops south of the Hatab River in the Foussana Plain, stop the enemy advance, drive him out of the valley, and restore the Kasserine Pass position. The head of the column had already passed Haidra, but succeeding march units were turned off and the lead elements were fed into the intervals between march units. The command went into a soggy assembly area in the pine trees south of Haidra and reconnaissance was pushed towards Kasserine Pass to make contact with the enemy. A straggler line was established in advance of Djebel el Hamra to pick up troops that had succeeded in with-



drawing following the German breakthrough.

Brigadier Charles A. L. Dunphie, British 26th Armoured Brigade, and General Robinett, CCB, met with Brigadier McNabb in Thala at midnight, 20-21 February. With only the three present McNabb stated that the situation in Tunisia was desperately critical. He informed them that their commands had all available tanks and that any operation undertaken must be predicated upon preserving them. With this in view he invited suggestions as to what should be done. The American commander proposed a line of action which contemplated the use of infantry in the high ground on either flank of the Hatab valley and the deployment of the tanks in the valley in advance of the passes, supported by the artillery and tank destroyers. He suggested that the enemy be allowed to strike and that, while disorganized, he then be driven back and expelled from the valley. The recovery of Kasserine Pass would follow. The suggestion was approved and the conference broke up after overlays had been made. Brigadier Cameron Nicholson, 6th Armoured Division, had been designated to coordinate operations in the Hatab valley but when he failed to arrive McNabb stated that U.S. II Corps Headquarters would coordinate.

Throughout the night of 20-21 February CCB moved slowly through a deeply cut, muddy road and by daylight of a foggy morning most elements had taken up a position in advance of Djebel el Hamra covering the Haidra and the Tebessa roads into the Hatab valley. The communications officer was able to develop a workable communications net with some of the attached units by morning. Among these was the 2d Battalion, 16th Infantry, Lt. Col. James B. Crawford, which was posted in the secondary Bou Chebka pass. Retreating infantry units from Kasserine Pass were rounded up, reorganized and re-equipped, as far as possible, and placed in the mountains covering the pass to Haidra. The 894th Tank Destroyer Battalion, Lt. Col. Charles P. Eastburn, and two companies of medium tanks had withdrawn in good order. Reconnaissance Company, 13th Armored Regiment, contacted the enemy and reported his movements up the valley.

In the meantime Brigadier Dunphie had moved the tanks of his armoured brigade well down the Kasserine-Thala road and established a defensive position in the commanding ground some miles south of Thala.

The enemy continued to move forward through Kasserine Pass during the night of 20-21 February and sent reconnaissance elements up the roads towards Thala and Tebessa pushing hard against retreating troops. Those moving on the Tebessa road encountered deep mud and were slowed down. At dawn the movement was continued: the 10th Panzer Division met the 26th Armoured Brigade and by late afternoon had practically destroyed it. A few tanks escaped to the north. The DAK, with elements of the *Centauro Division* attached, south of the Hatab River advanced on the Djebel el Hamra Pass. Finally, at 1630 an attack was launched on the pass. In the meantime the fog had lifted. The attack soon came under heavy artillery, tank, and tank destroyer fire from three sides. The enemy attempted to jam CCB's communications without success. The American artillery was dive bombed and strafed. For the first time, however, the Germans met strong anti-aircraft fire from attached anti-aircraft automatic weapons. Two of the attacking planes were shot down and

others were damaged. The enemy ground attack was stopped and thrown back. The enemy then attempted to turn CCB's left flank but failed. A German reconnaissance force was also turned back at a secondary pass leading to Bou Chebka. The day ended with the German troops four miles short of their objective.

On the British side of the valley, however, the 10th Panzer Division broke through the defensive position south of Thala at dusk. In a confused and violent battle at close quarters the Germans disposed of most of the remaining British tanks and then turned and killed, captured, or dispersed the defending infantry and anti-tank troops on the pass. The Germans captured 571 prisoners and destroyed 38 tanks, 12 anti-tank guns, 1 anti-aircraft gun, 16 heavy mortars, 3 self-propelled guns, 9 motor vehicles, and 2 airplanes.

Rommel was now faced with a new decision. He knew that Thala had been reinforced and that additional troops were on the way. But he had reason to believe that he could push through the town and continue the attack. He had, however, personally observed the terrific power of the American artillery south of the Hatab River and "Buelowius' men had been astounded at the flexibility and ac-



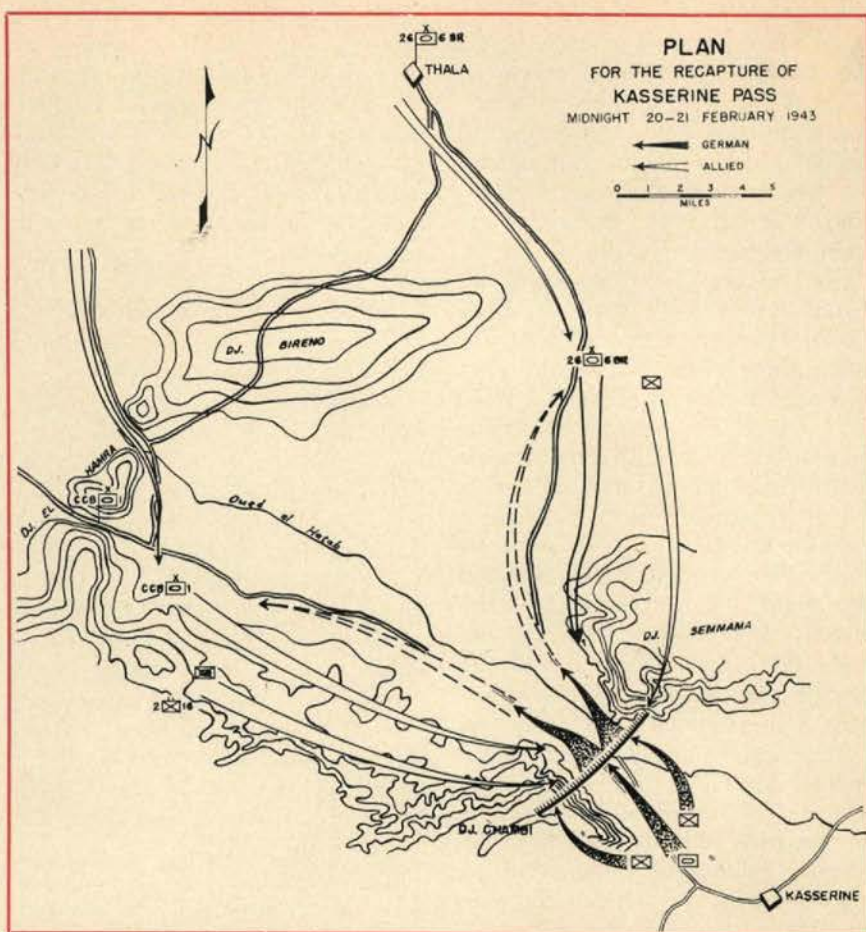


curacy of [it]." A great number of the Axis tanks were put out of action and, when they were forced to withdraw, the American infantry followed up closely and turned the withdrawal into a costly retreat. Noting that "the American defense had been very skillfully executed" Rommel decided to defend at Thala and to continue the attack on CCB with the view of outflanking the Djebel el Hamra Pass.<sup>9</sup>

During the night of 21-22 February the British First Army brought up additional troops, particularly in the Thala area where the artillery of the 9th Infantry Division, Brig. Gen. Stafford LeR. Irwin, went into position after a forced march from distant Tlemcen, Algeria, showing what could be done by an aroused high command. On the other hand, in a moment of timidity, the troops in the Sbiba Pass were withdrawn further to the rear. The 21st Panzer Division failed to follow. To the south CCB, 1st Armored Division, improved its position. The 2d Battalion, 6th Armored Infantry, on its right, was in position from which it could cooperate with 2d Battalion, 16th Infantry, and cover the artillery in that area. The combat command was surprised, however, when the 1st Battalion, 16th Infantry, took up a defensive position flanking its command post in Djebel el Hamra that night. If instead the battalion had been ordered to a position from which it could have secured the high ground south of Kasserine Pass it might have played a great role in subsequent events.

CCB was not informed of the situation on the British side of Hatab valley during 21 February. Neither were the British informed of its activities. The liaison officer's vehicle and radio were destroyed in a bombing attack on Dunphie's command post and the liaison officer was wounded. But worse still there had been no coordination in the Hatab valley on 21 February. Apparently the U.S. II Corps Headquarters knew nothing of Brigadier McNabb's decision at the conference in Thala.

The Axis forces renewed the attack against CCB on 22 February. During a foggy night an enemy task force, consisting of infantry, tanks, and artillery, moved into attack position but was delayed by mud and lost its way. It was surprised at dawn to find itself nearly four miles southeast



of its objective—the Bou Chebka Pass. The 2d Battalion, 16th Infantry, and the 2d Battalion, 6th Armored Infantry, supported by the 33d Field Artillery Battalion, were in position to meet this attack. The enemy closed in aggressively on the field artillery, capturing a part of the battalion. The infantry, supported by the tanks of Company G, 13th Armored Regiment, was ordered to counterattack. The enemy was driven back and the lost guns of the artillery were recovered in serviceable condition. The enemy was then driven in wild retreat towards Kasserine Pass. Some elements were driven back into the path of the 2d Battalion, 13th Armored Regiment, and captured. Near the end of the day *Bersaglieri Battalion* 5 was dispersed by American tanks and left many vehicles behind. Fourteen Italian tanks, some operational, were captured.

During 22 February, under improved but still difficult weather conditions, the American air force, operating from Youks les Bains airfield, flew 114 sorties in support of the British at Thala. Its support of CCB

was sketchy and not coordinated with the ground action. One flight became lost and bombed Allied installations at Souk el Arba, over 100 miles to the north.

During the afternoon of 22 February Rommel visited his troops in the vicinity of Thala where he found Col. Fritz von Broich planning an attack for that afternoon. Discouraged by lack of success at the Djebel el Hamra pass, he called the attack off and put the 10th Panzer Division on the defensive. Following a conference between Rommel, Kesselring, and others it was agreed that the offensive should be abandoned and the troops withdrawn gradually to the east.

It was time for the Allies to exert extreme pressure upon the enemy but General Robinett, still mindful of Brigadier McNabb's instructions, which were not changed, only ordered a limited advance. A major decision was required but no one with authority to make it was at hand. The fleeting opportunity, the golden chance, was soon gone forever, as further changes in the Allied command were in progress.



Important shifts in the Allied command were under way even before the German offensive reached its peak. These changes created uncertainty all up and down the line and led to a slackening of control and the forfeiture of all chances of aggressive action at the moment Rommel lost the initiative. Field Marshal Harold Alexander had assumed command of the newly activated Army Group 18 on 19 February. He had little influence on halting the Axis offensive in central Tunisia. Decisions which he thought influenced the outcome such as the concentration of British armour at Thala and speeding up the Eighth Army's attack at the Mareth Line came too late to influence events. Actually, Rommel was already on his way back to the Mareth Line before Montgomery could act. Alexander's use of the RAF in the last phase of the operations was uncoordinated with the ground action and could not be exploited. He failed to take advantage of the situation when Rommel lost the initiative and allowed him to deliberately withdraw although in an enfeebled condition. It was the time for pursuit but direct pursuit was not the correct method. Better it would have been had the 34th Infantry Division taken over that role from Sbiba and the 1st Infantry Division from Djebel el Hamra freeing CCB, 1st Armored Division, for a quick move through the Bou Chebka Pass against Rommel's rear. In this connection, however, it should be remembered that for a commander in the field the situation is never so clear as it is to the historian with full knowledge of the situation on both sides.

At 1415, 22 February, General Ward was designated to command the troops in Hatab valley and General Allen all units south of the Fousana Plain except those attached to CCB. Ward's mission was "to hold the general line Djebel Hamra—Thala and to cover the left flank of the corps preventing Germans from moving to the west." He was also to undertake such offensive operations as were practicable to recover "Kasserine Valley." General Ward had hardly established his command post at Haidra and called for a report of the situation when he, in turn, was displaced by Maj. Gen. Ernest Harmon who had been flown up

from Morocco. General Ward had prepared and was about to issue orders when Harmon arrived. As U.S. II Corps deputy commander he (Harmon) took over General Ward's headquarters and staff, leaving him only nominal command of the division and no staff or communications with which to exercise it. During the night General Ward pitched his tent near CCB's command post and remained in the area of that command until Kasserine Pass was reoccupied.

While these shifts were going on, CCB had been methodically carrying out the original plan proposed by Robinett without encountering any serious opposition. Rommel abandoned the Grand Dorsal all along the line and moved back without serious interference at any point. Obstructed only by mines, CCB reoccupied Kasserine Pass on the morning of 25 February and pushed reconnaissance towards Kasserine and Sbeitla. Rommel continued his retreat until his troops had reoccupied the Eastern Dorsal from which the Axis had launched the offensive.

Reverses in battle are generally followed by an examination of the professional qualifications of the commanders concerned. Although the Axis failed to attain its objectives in central Tunisia, no official heads fell on that side. Rommel was in fact promoted to the command of an army group which he reluctantly accepted. On the Allied side, however, the outcome was quite different. Lucky indeed were those who survived the ordeal of coalition warfare in North Africa.

The campaign in Tunisia, like the opening campaigns of other wars, can be studied with considerable profit by those who may be involved in similar operations in the future. It became a professional graveyard, particularly for those in the upper middle part of the chain of command. Sometimes they were penalized on the basis of erroneous reports of which they knew nothing at the time; sometimes they became enmeshed in impossible situations which were not of their own creation; and, most unfortunately, some were innocently caught in the web of clashing personalities, interests, and ambitions.

#### Retrospect

General Eisenhower lists the fol-

lowing as reasons for the Allied reverses in central Tunisia in February 1943:

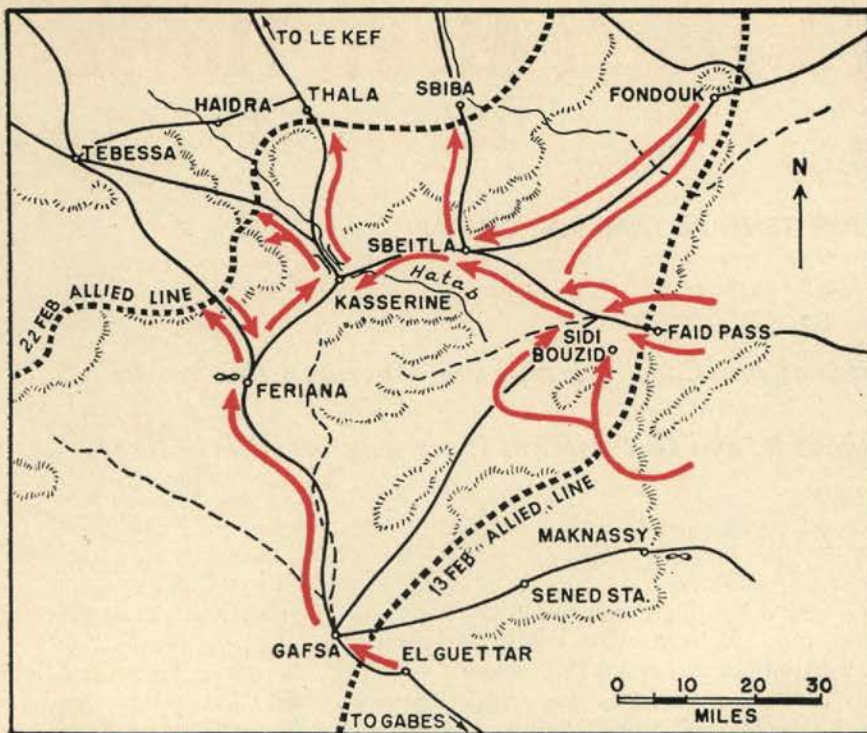
1. Failure to place the French troops under the command of General Anderson from the very beginning of the Tunisian campaign.
2. Overextension and scattering of forces.
3. Overexpansion of the area on the southern flank in which the United States II Corps was permitted to operate in strength.
4. Failure to hold the 1st Armored Division together for active and powerful counterattack.
5. Faulty intelligence including fixed ideas of enemy intentions and underestimation of his capabilities.
6. Lack of troop training and inexperience of commanders.<sup>10</sup>

Rommel attributed his failure in central Tunisia to the following:

1. The decision of *Comando Supremo* to make Le Kef the objective thus placing his troops within reach of allied reserves.
2. Delay at the various passes due to faulty tactics employed by German commanders.
3. The delayed arrival of *Fifth Panzer Army* units which prevented him from making a surprise breakthrough and allowed the Allies time to bring up reserves.
4. Clumsy leadership by certain German commanders.
5. Absence of armored elements held back by the *Fifth Panzer Army*.
6. Failure to clear the Americans (CCB) off the Hamra Plateau which made it impossible for him to free his western flank.<sup>11</sup>

Neither, however, seems to go to the heart of the problem—the inherent weaknesses of coalition warfare and of faulty command channels, which are concomitant with it. The division, corps, and army commanders concerned lacked clear command channels and missions and became enmeshed in a difficult problem that none had the authority to resolve. This led to the progressive usurpation of the prerogative of subordinates, to the mixing of commands, and, consequently, to bad feeling among leading personalities. The problem was finally resolved by the appointment of General Alexander to command Allied ground forces in North Africa. But this change was accomplished too late to influence the outcome of





operations in central Tunisia and to save the professional reputations of some. Fortunately for the Allied cause command arrangements in the Axis forces were probably even less efficient. This, plus inferior means, a dwindling air force, and the inability to control the narrow waters between Tunisia and Italy, adversely affected the Axis offensive in central Tunisia and ultimately led to the elimination of the Axis forces from North Africa.

To the student of mobile warfare, the Axis offensive in central Tunisia affords many lessons. Among the tactical lessons, none is of more interest than that of the attack and defense of a mountain line. Clausewitz, the philosopher of war, has said: "A general who allows himself to be beaten in an extended mountain position deserves to be brought before a court martial."<sup>12</sup> Perhaps he is a little severe for modern methods and equipment might have modified the problem. The orthodox way of defending such a line has been to hold the key-points or gaps rather strongly and the more difficult intervening terrain rather lightly, while maintaining strong mobile reserves in a central position prepared to counterattack and destroy or drive out enemy forces penetrating the mountain barrier. This concept antedates aviation, tanks, and other modern mechanized equipment. Tanks attached to infantry can best

be employed in the defense of a mountain line if deployed on the enemy's side of the barrier in advance of the gaps, with the shoulders firmly held by infantry and with artillery in support of both tanks and infantry. Once a gap is seized and tanks passed through to the defender's side, the enemy is prepared for offensive action. These considerations were demonstrated by the defeat of the American forces at Faid and Kasserine Passes, when the tanks were held in reserve on the defender's side, and again by the successful defense of American troops at Sbeitla and Djebel el Hamra Passes, when the tanks were posted in advance of the mountain line. However, the British tanks posted in advance of the pass south of Thala were destroyed. But this was due to other causes, such as the comparative inefficiency of British tanks and the lack of coordination of tanks, artillery, and infantry.

The Axis command twice demonstrated the correct way to take a mountain line in the central Tunisian offensive: first, while in a delicate situation owing to the lack of means, by taking the Eastern Dorsal with a series of limited objective attacks; and second, while holding the tactical initiative, by a simultaneous threat to all the passes through the Grand Dorsal followed by a breakthrough at Kasserine Pass, the strongest natural

position but the one most weakly held. The tactics employed by Rommel in taking Kasserine Pass, although not aggressively pushed at the beginning, followed the approved pattern of seizing the shoulders of the pass with infantry and then attacking with tanks along the valley road.

Both the Axis and the Allied commanders demonstrated a failure to maintain contact and to pursue a defeated and disorganized enemy. The Axis failed twice at Sidi bou Zid and again at Thala. The Allied command failed after Rommel had been defeated at Djebel el Hamra Pass.

The superiority of German tank and antitank guns and of German coordination of the combined arms was aptly demonstrated. But the coordination of artillery and tanks by CCB, 1st Armored Division, was greatly superior to that of the Axis. The superiority of German high velocity guns dictated that the Allies adopt cautious armored tactics even when somewhat numerically superior in tanks. Failure to do this resulted in serious and instantaneous losses such as those of Sidi bou Zid and Thala. These instances demonstrated again that weapons have a determinate effect upon tactical doctrine.

Allied commanders were inclined to locate their command posts too far to the rear and rarely showed themselves at the front. German commanders, on the other hand, were much nearer the front where they could exert a direct influence on their troops. The tactical methods of the Allied High Command reflected thorough training in World War I static operations but no extraordinary understanding of modern mobile forces.

<sup>12</sup>Dwight D. Eisenhower, *Crusade in Europe* (New York, 1948), p. 140.

<sup>1</sup>*Ibid.*

<sup>2</sup>*Ibid.*

<sup>3</sup>*Ibid.*, pp. 141-42.

<sup>4</sup>B. H. Liddell Hart, *The Rommel Papers* (New York, 1953), p. 398.

<sup>5</sup>David Rame, *Road to Tunis* (New York, 1944), pp. 247-48.

<sup>6</sup>Hart, *op. cit.*, p. 402.

<sup>7</sup>*Ibid.*, p. 403.

<sup>8</sup>*Ibid.*, p. 407.

<sup>9</sup>Eisenhower, *op. cit.*, pp. 146-47.

<sup>10</sup>Hart, *op. cit.*, p. 480.

<sup>11</sup>Carl von Clausewitz, *On War* (London, 1918), I, p. 203.



# Cavalry, and I Don't Mean Horses\*

by

MAJOR GENERAL JAMES M. GAVIN

*"As an enthusiastic supporter of our Cavalry arm, I am convinced that we will never win another war without it, and that without it we may very likely lose."*

**S**OME measure of undying fame was achieved by "Fighting Joe" Hooker in the War Between the States, when he asked, "Who ever saw a dead cavalryman?" From a war in which catch phrases were common, this one has been well remembered among the military; but it is a trifle lengthy for the soldiers of today. They are more likely to ask, "Who ever saw cavalry?"

Today it is the pastime of soldier-historians to speculate about the use of cavalry in that most bloody of all our national conflicts. What would have happened if Jeb Stuart, instead of wagon hunting, had been roving ahead of Lee when he debouched from the Cashtown pass on Gettysburg? If Buford on Willoughby Run had been driven in by the full impact of Stuart's incomparable cavalry, and the heights east and south of Gettysburg had been seized by the Southerners that first day, what effect would it have had on the hesitant Meade? Perhaps the whole course of our history would have changed. Perhaps.

In the meantime, we have fought a few more wars. Recently we reached a stalemate in one of them that historians may judge the most costly and least successful of all. In it, time after time, we committed our forces blindly to battle. While some historians are still lamenting the absence of Stuart at Gettysburg, no one has asked, "Where was Walker's cavalry in Ko-

rea?"—and it is high time that someone did. Where was Walker's cavalry on November 26, 1950, when his handful of divisions was struck with complete and overwhelming surprise by thirty Chinese divisions? Unit after unit stumbled into ambush and suffered the worst defeat in the history of American arms.

Where was the cavalry? It was, and still is, in the minds of military planners and historians. And I don't mean horses. I mean helicopters and light aircraft, to lift soldiers armed with automatic weapons and hand-carried antitank weapons, and also lightweight reconnaissance vehicles, mounting antitank weapons the equal of or better than the Russian T-34s.

Technologically we could have had them. Because of our deification of heavy equipment—and the combat practices of late World War II, which deluded us into believing that heavy armor is cavalry—we didn't have them. We lost the cavalry when we mounted it in weighty tanks and trucks, all of which move (if the terrain will allow them to move at all) at exactly the same speed as motorized infantry, if not slower.

Cavalry is supposed to be the arm of mobility. It exists and serves a useful purpose because of its mobility differential—the contrast between its mobility and that of other land forces. Without the differential, it is *not* cavalry. Cavalry is the arm of shock and firepower; it is the screen of time and information. It denies the enemy that talisman of success—surprise—while it provides our own forces with the means to achieve that very thing,

surprise, and with it destruction of the enemy.

Cavalry is not a horse, nor the crossed sabers and yellow scarves. These are the vestigial trappings of a gallant great arm of the U. S. Army, whose soul has been traded for a body. It is the arm of Jeb Stuart, and Custer, and Sheridan, and Forrest. It is the arm that as late as World War II got there (in Forrest's phrase) the "fustest with the mostest" but is now rapidly becoming, in terms of firepower and mobility, lastest with the leastest. Certainly gallantry, venturesomeness, and willingness to die are abundant in our armored and cavalry units, as they have amply demonstrated at every combat opportunity. But with the motorization of the land forces, and the consequent removal of the mobility differential, the cavalry has ceased to exist in our Army except in name.

In June 1950, when the victory-intoxicated North Korean forces were surging southward from the 38th Parallel, General MacArthur asked and was given authority to get in the ground battle. Obviously, the tactical situation called for a cavalry force to be committed at once, to screen and delay, while the heavier infantry and armored forces built up a more substantial defense.

What did we have that was equal to the occasion? One small infantry command of two-plus rifle companies and a battery of artillery, lifted to Korea by Air Force transport. Once under fire, they were slowed down to the speed of a foot soldier—actually slower than many of the tank-

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mounted North Koreans. They never had the proper means or mobility to perform their cavalry mission.

As Walker fell back, trading his infantry and artillery for time, his flanks were wide open. On his left, particularly, a gap of a hundred miles extending to the sea could readily have been penetrated. The situation begged for cavalry, but we lacked the contemporary kind of cavalry to do the job. As General Walker's forces fell back to the constricted perimeter about Pusan, only the valiant efforts of his fire-brigade infantrymen and their comrades of the Tactical Air Force made it possible to hold on.

Finally, when the landings at Inchon took place on September 15, there was again every promise of fluid action. I was present at Inchon, and after the first crust of resistance was broken it seemed to me there was nothing worthy of the name in front of X Corps. The situation screamed for highly mobile cavalry forces to exploit this unprecedented opening. We should have pressed south to the rear of Naktong River line in hours. Instead, we took almost two weeks to establish a link between these two forces. When the first breakout of our forces from the southern perimeter moved northward, it was a combined tank-truck column, essentially an infantry column limited in its performance by its road-bound equipment. We were fighting an Asiatic army on Asiatic terms.

Walker's divisions shortly thereafter swept forward and the entire peninsula was wide open. Cavalry patrols should then have been on their way to the Yalu; likely concentration areas for enemy forces in North Korea should have been scouted out, and the Yalu crossings kept under surveillance. With a properly composed and balanced cavalry force, this would have been entirely practicable—if we only had foreseen the need. Instead, the divisions of General Walker moved blindly forward, not knowing from road bend to road bend, and hill to hill, what the future held in store for them. If ever in the history of our armed forces there was a need for the cavalry arm—air-lifted in light planes, helicopters, and assault-type aircraft—this was it.

The debacle that followed our acceptance of combat under these terms

is now a tragic chapter in our history.

Today, in Europe, cavalry regiments are in battle positions, assigned the job of covering, screening, and delaying. One of the most frustrating experiences that a professional soldier can now know is to sit in at critiques of war games and maneuvers, and listen to staff officers endeavoring to rationalize the present-day cavalry's inability to fulfill its role. The most common analysis of the problem usually ends with some such conclusion as this: "They're cavalry regiments, aren't they? Their mission is a cavalry mission. The failure must be in the way they are handled." If



**MAJOR GENERAL JAMES M. GAVIN** graduated from West Point in 1929. He made his first combat jump in Sicily as a Regimental Commander in the first major Airborne assault of World War II. Later he gained fame as the Commander of the 82d Airborne Division. Subsequent to the War he held various posts.

Prior to his present assignment as G3, D/A, he commanded VII Corps in Europe.

cavalry units fail to provide timely information, or effective screening, their commanders are suspected of—and sometimes charged with—not having performed with sufficient celerity. Or an umpire is charged with allowing the enemy too much mobility.

What I find alarming is the lack of awareness that Russian motorized and armored forces are just as mobile as our own—if not more so. All the soul-searching in the world, and the most brilliant staff cerebrations, will not conjure up tactical success in cavalry action unless the means of achieving it are provided our cavalry commanders. They do not have the means today. They are road-bound. Even assuming they will be fortunate enough to fight in countries where

roads are numerous, they are no more mobile than the mechanized infantry divisions they are expected to screen from the enemy.

### Hoplites and Pelasts

It is a simple matter to be critical after the event. It is another to provide or attempt to provide, answers to the questions raised. Fortunately, most of the answers to the problems in the soldier's trade are not as difficult to come by as may first appear. Several thousand years of experience lie behind us, awaiting understanding.

One of the most striking aspects of man's military past is his persistent search for the technical means to get an edge on his opponent in mobility. When he was successful, and especially when he could organize elements of varying mobility into a cohesive combat team, he was successful in combat. When he failed to solve the technical problem created by his needs, he failed in combat.

The Greeks were the first to refine their combat techniques to the point where mobility differed; and there was close teamwork between the varying combat elements. The Greek pelast was a light-armed, mobile foot soldier who provided the security screen for the more heavily armed hoplites. The hoplite was a heavily armed soldier who was fitted into the phalanx, the first thoroughly disciplined firepower team of which we have accurate record. Polybius tells of the impression it made on a Roman consul:

The consul . . . had never seen a phalanx in his life until he encountered one—for the first time—in the Roman war with Perseus; and, when it was all over, he used freely to confess to his friends at home that the Macedonian phalanx was the most formidable and terrifying sight that had ever met his eyes.

The Persians who opposed the Greeks were fine horsemen. If they had acquired the teamwork and discipline of the Greeks, they should by all odds have won. The Greeks were not only good fighters, however, but smart enough to learn the handling of horses from the Persians. Philip of Macedon was the first great Greek soldier with the vision and organiza-



tional ability to match horsemen effectively with the superb Greek foot soldiers. He organized heavy and light cavalry, and trained them to fight in close co-operation with his infantry.

His skill was inherited by his son Alexander, the world's first great cavalry leader, who fulfilled his father's vision. "Cavalry was his dominant arm," writes General J. F. C. Fuller, "and in battle he invariably led [cavalry] in person." Alexander developed and exploited the mobility differential between his infantry and his cavalry to the fullest extent possible in his times. There were subdivisions of each, based upon mobility, and the pelast was retained for close-in screening tasks.

Even as the phalanx reached its highest performance, an opponent worthy of its challenge appeared in the Roman legion. The legion had been coming up the hard way, fighting the superb cavalry of Hannibal; it finally defeated him and turned to the east. The legion, like the phalanx, was a traveling fort; yet it had one great advantage over the phalanx: every man was equipped and trained to fight as an individual. As a consequence, the legion was so flexible that it could fight in almost any direction; while the phalanx, in some respects like a modern triangular division, was designed and trained to fight where it was pointed.

The reign of the legion was long, and during it the field of combat experienced Pax Romana. But, as with all victorious ways in war, it could not last forever; and, when the end came, the legion's adversary was tough, combat-ready cavalry. Signs of the coming of the horsemen had been seen but little appreciated until the great disaster at Adrianople in A.D. 378, when Emperor Valius lost his legions and his life under the onslaught of the Gothic cavalry.

The cavalrymen appeared invincible after Adrianople, and with each passing century they improved their armor until they knew no opponent worthy of their mettle. True, they became heavier and more immobile, but in their eyes they became only more invincible. Finally, in the thirteenth century, there appeared on the eastern horizon a horseman laying waste to all before him. On the eighth of January 1258, he came to the

gates of Baghdad and challenged the pride of the Western cavalry to come forth. The story of this meeting is told by an eyewitness.

We met at Nahr Bashir, one of the dependencies of Dujayl; and there would ride forth from amongst us to offer single combat a knight fully accoutred and mounted on an Arab horse, so that it was as though he and his steed together were [solid as] some great mountain. Then there would come forth to meet him from the Mongols a horseman mounted on a horse like a donkey, and having in his hand a spear like a spindle, wearing neither robe nor armor, so that all who saw him were moved to laughter. Yet ere the day was done the victory was theirs, and they inflicted on us a great defeat, which was the Key of Evil, and thereafter there befell what befell us.

The impact of the Mongol cavalry on the West was impressive but, on military men in particular, of limited duration. Barely a century had passed before both men and horses had again been armored to the point of immobility. The advent of gunpowder clearly spelled the end of the armored knight, but this was little realized at the time; those who used gunpowder were often considered criminals and occasionally hanged on the spot. Finally, at Agincourt in 1415, the flower of French knight-hood met its doom at the hands of a lightly armored, much more agile force, armed with the longbow.

Despite this crushing demonstration, the role of the armored knight in the warfare of the Middle Ages continued to be an important one. Often the presence of a mounted man in battle reflected his prosperous station in life, and thus an ability to afford a horse and all its trappings, rather than any awareness of a tactical need. Jousting was a popular military sport, and the charging of armored knights was an approved tactic through all the years while firearms continued to improve. Even after the efficiency of gunpowder had made the armored horse ineffective, many soldiers persisted in arguing that the most decisive and effective tactic in combat was still the cavalry charge.

In our Civil War, the cavalryman

shed his armor and adopted the pistol and saber as proper weapons for the charge. But it was in this war, the era of our great cavalry leaders, that such men as Sheridan first enunciated the heretical view that the purpose of cavalry was not merely to ride hell-for-leather. By the war's end, it was established beyond question that the real purpose of the horse was to deliver firepower where it was needed most. Frequently the cavalrymen dismounted, sheltered their horses, and dug in to let the opposing side destroy itself against the high volume of fire they were able to develop—a shrewd adaptation of an existing weapons-system to the existing combat environment.

Clearly firepower was building up to such intensity on the battlefield that flesh and bone could no longer prevail against it. The efficiency of firearms and the number of automatic weapons continued to increase, until in World War I an impasse was reached. The mobility differential between the components of the land forces had disappeared. The defense completely dominated combat; and Verdun, the Somme, and Passchendaele were the result. British casualties at Passchendaele were 8,222 for each square mile captured—an all-time high in human sacrifice for the real estate gained.

While men were piling up their bodies in battles of attrition in World War I, the commanders and their staffs were desperately trying to solve their dilemma—only to fall back on a still greater massing of artillery, and assaulting infantry, in the hope of saturating the defenses. Yet already a new form of mobility had appeared; the gasoline-driven land vehicle. Its arrival was too late by a small margin for full exploitation in World War I, but to those who read its meaning correctly it showed certain promise of breaking the stalemate. Tank warfare was sufficiently tested to convince a few visionaries of its great possibilities.

Between the wars they preached. J. F. C. Fuller, Liddell Hart, de Gaulle, and Chaffee argued wherever they could obtain a hearing for the new form of war—or new form of cavalry, which it unquestionably was—offering a mobility differential never before seen or even thought of. Unluckily a number of the German sen-



ior officers foresaw its possibilities with equal clarity and instituted an appropriate development program in the Wehrmacht. The German campaign in Poland in 1939 and France in 1940 proved men like Guderian and Rommel to be apt students of their Allied teachers.

Now we are at a point in history where soldiers in the past have often found themselves. In our time, we have seen the great defensive battles of World War I and the great offensive battles of the early 1940s. Understandably, many veterans remember vividly and well how the lessons of ten years ago were applied in battle. But memory can become idolatry of things past and close our minds to the meaning of events. We quote the preachings of Liddell Hart and Fuller in the twenties, as though mere repetition would extend their validity into the present. We run the risk of forgetting that it is not what was said and done, but *why* it was said and *why* it was done, that is important. In the meantime, one of the most—if not *the* most—critically evolutionary periods in military history is upon us.

### The Aerial Instrument

Not many years elapsed between Kitty Hawk and the great offensives of World War II, yet they were years full of intensive search for the proper exploitation of the new air vehicle in combat. There were those, like their predecessors in years past, who saw the new aerial instrument as the absolute weapon—one such was Douhet. Others, like the visionary Mitchell and Hap Arnold, saw it for what it was: mobility, to enable the means for victory to be brought to the area of decisive combat. General Mitchell's definition of air power is still the best written: *anything that flies*.

The common search for the means of survival brought the airman and the soldier together; and, once joined, their imaginative use of the new form of mobility was rapid. I consider myself most fortunate to have been associated with one of our first units in this new field. I was a member of the Army's 505th Parachute Regimental Combat Team in the invasion of Sicily on July 9, 1943. Its mission was to land between the known enemy reserves and the beaches to be used by our assault divisions, and to screen the landings. There were a number

of subordinate missions: to deny the use of an airfield, seize dominant terrain, secure several crossroads, and so on—a typical cavalry mission.

After the landings, the first ground forces we encountered were the reconnaissance elements of the Hermann Goering panzer division, the cavalry of Fuller and Liddell Hart's disciples. We had a rough time. Badly scattered, we found that our mobility was not as great as we thought it was; badly out-gunned—the Tigers were impressive against our 2.36 bazookas—we nonetheless survived. The success of our mission can best be judged by an enemy evaluation of it:

It is my opinion that if it had not been for the Allied airborne forces blocking the Hermann Goering Armored Division from reaching the beachhead, that Division would have driven the initial seaborne forces back into the sea.\*

We came back with a burning conviction on two points: we needed (1) more accurate air delivery and (2) better antitank weapons. Although first priority was immediately given these problems, when we jumped in Italy two months later we fared not much better. The mission was again a typical cavalry one. The 2nd Battalion, 509th Parachute Infantry, was to land at Avellino, a key to the road network leading to Salerno, and block all enemy movement through that area. The remainder of the 82nd Airborne Division moved from Sicily to Salerno as a highly mobile reserve, and overnight was in combat on the beachhead.

Between Salerno and Normandy every effort was concentrated on improving antitank weapons and accuracy of delivery. For the first time we began the search for a lightweight land vehicle to exploit the unexpected opportunities which invariably characterized—so we were beginning to realize—a landing in the enemy rear. For accuracy of delivery we turned to Dr. Vannevar Bush's office in Washington and, through the personal efforts of Dr. Charles Waring (now head of the Chemistry Department of the University of Connecticut), we were able to obtain colored lights that could be jumped with an individual, set up after landing, and trig-

\*Postwar interrogation of General Kurt Student.

gered remotely by code (they were later replaced by infrared lights). For antitank weapons, General Ridgway obtained a company of 57mms from a division newly arrived in North Africa. We also redistributed our individual jump loads so that we could jump seven hundred antitank mines per regiment, and we adopted the British Gammon antitank hand grenade.

The 57mms were the best guns we had, though we rarely had them when we wanted them, since they had to be flown by glider. They had to do until we captured the first German panzerfausts in Holland; these made one man equal to the heaviest German tank and started us on an era of relative prosperity. For the solution to the vehicle problem, we put extra armor plate on jeeps. When equipped with automatic weapons and panzerfausts, they—compared to other forms of mobility in World War II—were the best cavalry known to date. Capable of moving by glider several hundred miles in a few hours, and after they landed of coping with anything they met on favorable terms, they invariably gave a good account of themselves.

The mission assigned to the 82nd Airborne Division in Normandy was to block all enemy attempts to reinforce the beaches and to attack them from the rear—again a typical cavalry mission. Two months after Normandy the division was in the air once more and on its way to Nijmegen. Much had been learned in the interim. The accuracy of the Holland landings was almost perfect, and antitank weapons were soon obtained in abundance. The division's cavalry troop, the reconnaissance platoon, fully motorized with the new armored jeeps, proved worthy of every confidence. Here was cavalry in the historical sense.

After Holland we began to talk about droppable fuselages, track-laying aircraft, assault transports, helicopters. We were not sure what form the air vehicle would take but we knew that we were on the right track. What we needed next was a closer integration with the inheritors of the cavalry role, the armored forces, without loss to the highly mobile and aggressive character of the airborne forces, the "lean and mean" philosophy. This at once suggested a future



for armor in the air-transportable field, possibly the future. Certainly it was the area in which the frontier of military knowledge had to be pushed back.

It should be realized that at this time a complementary development of the greatest significance was taking place in antitank weapons. In several fields of research the antitank weapon was showing itself far superior to the tank, clearly indicating that in the near future antitank weapons would reduce even further the mobility differential enjoyed by armor in the early 1940s. Hence the clear and immediate requirement was for exploration of the airborne-armor field in which a new mobility could be found.

If we failed to do this, the least that could happen would be a war of stagnation in which our armored forces, our so-called cavalry, would be as immobile as the enemy. At the worst, an enemy would develop it and achieve overwhelming tactical surprise at the opening of hostilities—as the Germans did in 1939 and 1940. We should find it worth remembering that the first maneuver of airborne troops was conducted by the Russians in 1930, and that in 1935 they moved an entire division by air from Moscow to Vladivostok—3,500 miles.

As an enthusiastic supporter of our cavalry arm, I am convinced that we will never win another war without it, and that without it we may very likely lose. Korea is eloquent testimony. My own convictions and experiences in World War II led me to write a brief piece on the subject called "The Future of Armor," which was published in both the *Combat Forces Journal* and *Armored Cavalry Journal* in November 1947.

It seemed to me, at the time, that we would have to lighten all items of combat armored equipment, and develop and produce the aircraft to carry the new light armored forces into battle. But I accomplished little. The vehicles in our infantry and cavalry units are no lighter now than they were five years ago—in fact, in most cases they are heavier. Currently, the mobility differential between our infantry and our cavalry—in the form of armored divisions and cavalry regiments—is nil. The same is true of the differential between ourselves and the

Russians—unless, of course, if we have to fight them, they will be accommodating enough to walk while we are rolling on wheels and tracks.

### And the Big Bombs

There is naturally much speculation now over the implications of atomic warfare. In spite of conflicting opinions, it seems clear at least that bombs, guided missiles, and artillery projectiles with destructive power measured in the kilotons and megatons are here to stay. If they are used at all, they will sooner or later be used directly against land forces; and the only countermeasure possible is to reduce drastically the numbers of soldiers per square mile in the battle area, which will itself have to be regarded as a zone hundreds of miles deeper than it is at present. Since fewer soldiers will have to cover much more ground, there will be a proportionately greater need for automatic weapons and for a more rapid and efficient supply system to provide them with ammunition. In the solution of these problems the air vehicle will inevitably play a major part.

Since dispersion—individual and unit—will characterize the defense, the greatest need of all will be for the means of concentrating rapidly in the area, and at the time, of decision. Major reserves will have to move by air, and in the tactical zone smaller units will have to be mutually supporting by air as well as land.

Cavalry-type screening missions will have to be conducted at much greater distances, and with much greater rapidity, than have hitherto been considered acceptable. The mobility differential to make this possible must be achieved. It is within our grasp, fortunately, in the air vehicles now being developed—assault transports, light utility planes, helicopters, and convertiplanes.

Forces so organized and equipped will have a predominant influence on future warfare. Their readiness at the very outset of combat is essential, yet unfortunately they cannot be produced, Aladdin-like, overnight. The lead time to their availability could be measured in years while the lead time to disaster could be zero, and this could happen while we relied almost exclusively on the concept of mass retaliation—a concept which

finds no justification in human experience as an exclusive and self-sufficient means to victory.

The appeal of the weapon of mass retaliation is understandable; it is spectacular, it carries the war far away from our homeland, and most people believe it to be uniquely American. It does have a role to play—that of destroying an enemy's strategic forces before they can be brought to bear. Thereafter it must take its place among the resources, human as well as material, that our people provide to make victory possible. The weapons system that encompasses every decisive role which men can play, with the least drain on a nation's economy, will be in the long run the system to survive. For man is a land animal and he remains the common denominator in war, whatever form it takes.

Today, even the most casual awareness of the historical lesson should suggest that in ground combat the mobility differential we lack will be found in the air vehicle. Fully combined with the armored division, it would give us real mobility and momentum. Military tactics are not so recondite that there should be anything mysterious in such a conclusion. We have an apt Americanism that sums it up: "Hit 'em where they ain't!"

All of this may seem very remote from the Greeks, with their hoplites and pelasts, the Roman legion, the armored knight, and the combat philosophy of Nathan Bedford Forrest. It is in time but not in substance; for, to survive and win in battle, soldiers have always had to think of these things, and to move along the curves of history, lest they giddily precipitate themselves and their people into oblivion.

When a modern nation embarks on an unwise military course, however, not only its soldiers are at fault. "In our democracy," said General George C. Marshall fifteen years ago, "where the government is truly an agent of the popular will, military policy is dependent on public opinion, and our organization for war will be [as] good or bad as the public is well informed or poorly informed. . . ." What we now need, as a nation, is an understanding of the past that can be converted into tactics and battle hardware, and give its soul back to the cavalry.



# Sum & Substance

CARDED

A regular feature in ARMOR, where you may express your views in approximately 500 choice words—the effective medium between the letter and the article. This section is open to all on any subject within the bounds of propriety. Name and address must accompany all submissions. Name will be withheld upon request. No pseudonyms.

*To keep our Army the best equipped in the world is an ever present challenge. As this requirement applies to Armor it is the responsibility of the Army Field Forces Board Number 2. To appreciate the vast undertaking of such a project ARMOR focuses the spotlight on the Board at Fort Knox, Kentucky and its various sections to obtain firsthand information.—ED.*

The writer of the following article graduated from the United States Military Academy in 1920. Commissioned a 2d Lieutenant of Cavalry, he has been associated with *Armor* since 1931. During World War II he commanded a combat command in the 4th Armored Division, subsequently the 17th Armored Group. After the war he became T.I.&E. Officer for Fifth Army in 1946 and Eighth Army in 1949. With the outbreak of hostilities in Korea, he was appointed *Armor* Officer for the Eighth Army. He joined AFF Board Number 2 in 1951 where he is assigned as President of the Board.

Army Field Forces, headed by Lieutenant General J. E. Dahlquist, works with the Army General Staff to determine requirements for arms and equipment intended for the field army and to reach decisions concerning the design, manufacture, and procurement of these items. Board Number 2, Office, Chief of Army Field Forces, an instrument of General Dahlquist, furnishes data on armored vehicles and weapons and on engineer, medical, and automotive equipment, both wheeled and tracked, used by all arms and services included in the field army. Three similar boards advise on other matters.

Anyone in the Army can state a requirement for a piece of equipment, but only Combat Developments Group in Army Field Forces can evaluate that requirement. An item within the field of Board 2, when approved, is referred to us for the preparation of military characteristics. The result may be a design

produced by either an Army agency or a civilian contractor. Board 2 evaluates the design and, if approved, inspects a wooden mock-up of the item and later a prototype in metal. Next, a pilot model is received for test. If

All photos—U.S. Army



Col. William P. Withers

satisfactory, the pilot model then goes into production and the production item is sent to us for test. The results of the test are reported to the Chief of Army Field Forces.

To accomplish our mission, this board is assigned 68 officers, 3 warrant officers, 540 enlisted men, and 143 civilians. Most officers and key civilians possess academic degrees which is important in that they have been trained to accept new problems and to achieve a scientific solution.

This board maintains close contact with troops in the field, with Army development agencies, and with industry. For this reason, officers with recent combat experience are uti-

lized. Further, a mass of reports citing combat and field experience pass through the board, and the meat of these reports is extracted for interested officers. In its endeavor to provide the combat soldier with appropriate equipment, the board corresponds with officers and men in the field and frequently visits field units.

The soldier in the field usually knows his wants, but in voicing them he often is concerned with his own situation and fails to consider other factors. The board and other agencies must examine carefully supply capabilities, costs, training requirements, restrictions imposed by manufacturing processes, and critical materials. Invariably, a finished article of military equipment is based on a series of compromises.

To arrive at the necessary compromises and put them into metal necessitates an interminable series of conferences which require our officers to be absent from the board much of the time. (Currently, Board 2 averages 129 officer-days per month away from Fort Knox.) Often these compromises result from conflicting military characteristics, as is particularly true with reference to tanks. It has been said of tanks that we require a very large interior surrounded by a very small exterior, so we get involved in a dizzy spiral in the development of a tank. Since a big gun uses big ammunition which requires a bigger armor envelope, a larger power plant is then needed which requires more fuel. This leads to a still larger armor envelope adding more weight, hence requiring a still larger power plant needing still more fuel, and so on, *ad infinitum*.



The ideal method for testing of development and production types of matériel is for one officer to have one test project at a time. Some of our project officers must carry as many as seven tests simultaneously. Equipment is tested for performance, durability, ease of maintenance, training requirements and, if powered, for fuel economy. Hundreds of hours of operation are involved, including cross-country courses, secondary roads, 60% slope, side slopes, loading for transport, and endless detailed testing. The testing of a single item is a time consuming, laborious process which sometimes requires several years. The writing and coordination of the final report requires another 2 to 3 months but this insures a service test satisfactory to all concerned.

Board 2 has more than 50 visitors a week. From 14 to 30 civilian technical representatives of industry reside at Fort Knox. Approximately 200 items are on hand at all times for testing, including matériel from several foreign nations. To accomplish testing under desert conditions we send from 50 to 100 officers and men to Yuma, Arizona each summer. At Arctic Test Branch, Big Delta, Alaska, a small detachment conducts cold-weather tests for this board.

COL. WILLIAM P. WITHERS



*The writer of the following article commanded a separate tank battalion in the Pacific Theater during World War II. Subsequent to the war he attended the Senior Staff Course of the Marine Amphibious Warfare School at Quantico. During the Korean conflict he was assigned as G3, Chief of Training, Headquarters Eighth Army. He joined AFF Board Number 2 in the summer of 1951 where he is the Chief of the Analysis and Control Section.*

The Analysis and Control Section of Board Number 2, Office, Chief of Army Field Forces is the smallest section of the board and is charged with the widest variety of duties. Authorized strength is 4 officers, 2 professional civilians, 1 enlisted man, and clerical help.

Editing of plans of test, reports, and technical correspondence originated by other board sections is the

most important duty of the Analysis and Control Section and is the one which accounts for perhaps 80% of the section effort. A single test project invariably requires a plan of test and a final report. The former quite often runs to 10,000 words and the latter is usually several times as long. Most test projects, in addition, involve partial reports and deficiency reports and may require supplemental plans of test and supplemental reports. On one recent troop test of a tank, approximately 3,000 deficiency reports were submitted to the Chief of Army Field Forces. In March 1954, the board was charged with 179 projects. All this paper is edited by the Analysis and Control Section primarily for technical accuracy and adequacy and secondarily for grammatical exactitude and compliance with applicable regulations and directives.

In addition to project reports and



Lt. Col. Alex E. Lancaster

associated documents, which constitute the formal paper work of the board, the Analysis and Control Section edits in a similar manner the daily flow of technical correspondence. Over a period of time this incidental correspondence probably exceeds, in sheer bulk, the formal output of the board and much of this correspondence is of the highest importance.

A second major duty of the Analysis and Control Section is coordination of plans of test, reports, and certain correspondence with other agencies, including technical service, service schools, and allied nations.

Additionally, the Analysis and Control Section takes action on technical

correspondence which falls outside the responsibilities assigned to other board sections and consolidates certain correspondence involving several of or all the other sections.

The section work so far discussed is all concerned with board output. Within the board, the Analysis and Control Section assigns projects to other sections as directives are received, records the progress of all projects, and periodically submits status and progress reports to the Chief of Army Field Forces. The Analysis and Control Section also advises the board president on matters within its field and acts in an advisory capacity to the other board sections. Newly assigned officers and visitors to the board are oriented in board functions by the Analysis and Control Section, which also supervises demonstrations and exhibits occasionally prepared for distinguished visitors.

The chief of the Analysis and Control Section serves as the permanent representative of the board on the steering committee for combat developments at The Armored Center.

LT. COL. ALEX E. LANCASTER



*The writer of the following article served with the 2d Armored Division during World War II. Subsequent to the war he instructed at The Armored School and The Artillery School. He commanded a tank battalion in Korea and served as Chief of Staff of the 3d Infantry Division. He joined AFF Board Number 2 in the Summer of 1953 where he is the Chief of the Combat Vehicle Section.*

The Combat Vehicle Section, in discharging its part of Board 2's responsibilities in the development of combat vehicles, is often accused (with considerable justification) of requiring the following characteristics in tanks, armored infantry vehicles, self-propelled guns, etc:

Big guns and small ammunition.

Mobility which makes any terrain an avenue.

Impenetrable armor.

Small on the outside; large on the inside.

No logistical burden.

Tanks, the more complicated combat vehicle, will be used to indicate



what is desired in a new vehicle.

The Big Three Gun, mobility, and armor protection—remain the principal features to be considered in a new tank, and in that order of priority. Recent developments have introduced a fourth feature to which some quar-



Col. Wilson M. Hawkins

ters accord first priority; namely, fuel consumption. Since gun, mobility, and armor protection requirements have been discussed so widely in armor circles for years, little additional need be said here.

Guns and related family of armaments are subjects of separate development. With experiences of combat against the Germans still in mind, the goal is to insure that United States tanks will never be outgunned again.

Tanks being mobile weapons, adequate mobility is a firm requirement. Consequently, mobility is a characteristic which is checked closely on varied cross-country and road courses, in mud and water, and on steep slopes. As we have gained combat experience, we have realized that high road speeds are seldom required. Therefore, the requirement for top speed has been reduced to that necessary to maintain predicted road-march speeds. Reducing top speed should permit better performance at low speeds, specifically, cross-country ability, fuel economy at most commonly used speeds, acceleration, and hill climbing. There remains an available top speed above the sustained rate for use in emergencies.

Armor thickness is a compromise between complete protection and the

impact of weight and size on mobility and logistics. Board 2's effort is directed to reducing weight by reducing size through smaller, more compact components, not by reducing the present level of protection.

High-fuel requirements of our current tanks have demanded increased attention because of the resulting limited operational range or combat hours and logistical burden. Board 2 is looking for significant economy in engines and transmissions. Extending range by increasing fuel carrying capacity constitutes an unsatisfactory solution.

Reports from using units have cited repeated instances of poor track life. Board 2 is accumulating data for use by designers and manufacturers in improvement of compounds, both metal and rubber, quality control in manufacture, and new conventional and unconventional designs. Board 2 seeks a track life approaching the durability of the vehicle itself.

Present tanks are complicated, and to develop proficient crewmen, considerable training is required. High performance requirements are contrary to simplicity. Unless we are willing to relax our performance requirements, significant improvement in simplicity is not expected. Board 2 seeks to make the essential complexities more reliable and durable; it seeks to discard complexities of a gadget type.

United States tanks must achieve accuracy and first-round hitting ability to win against superior numbers. Our present fire control system, though complex, approaches the desired performance characteristics. Research and development continues under a high priority to achieve better performance at less cost in complex equipment, training, and maintenance requirements.

In addition to the more controversial features discussed briefly above, Board 2 investigates sufficiency of ammunition, stowage arrangement to assure easy availability, arrangement of communications equipment, adequacy of the machine guns to perform in ground and antiaircraft roles, and all components which make up the vehicle.

Armor is firmly entrenched as the arm of decision. More than any other arm it possesses ability to fight an atomic war. Board 2 seeks to insure that Armor's ability is increased.

COL. WILSON M. HAWKINS



*The writer of the following article served as Division Engineer of the 25th Infantry Division and Assistant Engineer of the Tenth Army in the Pacific Theater during World War II. Subsequent to the war he served as Post Engineer, Fort Knox, then successively as Command Engineer*



The Combat Vehicle Section testing a Patton 48 medium tank on a 60% slope.



of each of the Area Commands into which Japan is divided as a part of the Far East Command. Since 1953 he has been Chief of the Engineer Section of AFF Board Number 2.

The Engineer Section tests engineer items to be used by any element of the type field army. Not only does it test equipment for engineer units, but also items to be supplied by the Corps of Engineers for use by others.

Normally, equipment to be tested by the Engineer Section from a user's point of view has been tested already by the developing agency from the engineering viewpoint. This means that the item is responsive to the specifications and is in good working condition. It is up to the Engineer Section then to determine:

1. Will the item perform satisfactorily in the hands of the people destined to use it and without creating for them an unreasonable logistic support burden?

2. What training demands will the new item impose upon the using unit in order to take full advantage of its capabilities?

One such example may be found in the armored vehicle launched assault bridge. One piece of hardware proposed to satisfy the need of Armor for a means for crossing unfordable canals and ditches of moderate width rapidly, under fire and without exposing personnel, was a scissoring bridge mounted on a tank chassis and operated hydraulically. This item functioned properly but it pre-empted exclusively a modified tank which otherwise could have been a fighting vehicle. Moreover, where circumstances necessitated unfolding it on the near bank of an obstacle, it was highly probable that the enemy would be able to bring to bear the modest amount of small-arms fire necessary to wreck the hydraulic mechanisms completely.

Many effective antitank mines could be developed if we could ignore the danger to our own tanks. A proposed antitank mine must be capable of being disarmed and lifted by our own troops, should our plans change. The mine field laid to protect our troops must not become an obstacle

to the advance of our own armor when the situation changes, and an opportunity to rout the enemy presents itself. This requirement emphasizes the search for new and simplified means for recording and reporting mine fields accurately and promptly.



Col. Parker M. Reeve

Painstaking and critical checking pervades all fields of engineer testing: pioneer items, bridging, topography, map production and reproduction, and powered equipment, including airborne. The men and officers doing user tests of engineer items are always grateful for ideas and suggestions from the field. Those that apply to testing are applied to the work in hand; those proposing new items or modifications of existing items are passed on to the developing agencies. The engineers even extend their borrowing of ideas to foreign fields. Recently, discovering that a piece of foreign matériel fulfilled the field army's requirements to an extent unmatched by any item of American origin, the consent of the foreign government was obtained and the piece was incorporated in an otherwise successful standard American item.

COL. PARKER M. REEVE

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*The writer of the following article commanded a tank battalion, later the 1st Armored Regiment in the 1st Armored Division in Europe during World War II. Subsequent to the war he was assigned to the U. S. Army Standardization Group in Eng-*

*land. After attending the Naval War College he joined the AFF Board Number 2 where he is Chief of the General and Special Purpose Vehicle Section.*

The General and Special Purpose Vehicle (G&SPV) Section is responsible for the preparation of military characteristics and service test of all noncombat vehicles pertaining to the type field army, except those specifically assigned to the Engineer Section and the Maintenance Section. The bulk of the vehicles coming within the scope of this section fall into five broad classes: trucks, trailers, tank transporters, tracked amphibious carriers, and cargo tractors and prime movers. The vehicles which are of most interest to Armor are trucks ranging from ¼-ton to 5-ton payload, cart-type trailers from ¼-ton and 1½-ton payload, and tank transporters.

Statements of military characteristics (MC's) are the basic medium by which Army Field Forces makes known its detailed requirements for noncombat vehicles. In preparing drafts of MC's for a given vehicle, the G&SPV Section endeavors to answer the question: What characteristics must this vehicle have in order to accomplish its intended role? The answers to the question are set down in the MC's in terms of what the user expects the vehicle to do under tactical conditions. Various sources are used in arriving at the answers, including: The Army Equipment Development Guide; operational concepts for the employment of the vehicle, as prepared by appropriate schools in coordination with Board 2; comments from the field; and the experience and common sense of members of the board.

What, for example, are the essential characteristics to be looked for in tactical trucks? As viewed by the G&SPV Section they are:

**Cross-Country Mobility.** Trucks must be capable of supporting tactical units across country in the age of nuclear weapons. If any characteristic can be considered paramount, this is it. The characteristic is evaluated in terms of gradeability (to include 60% slopes), stability (to include lateral stability on 20% side slopes—40% in the case of ¼-ton vehicles), mud and sand mobility, and general



mobility over average rolling terrain in the temperate zone and in the Arctic. Speed is considered relatively unimportant. Performance at high altitudes is also considered, but it is unlikely that such performance can equal performance at sea level. Angles of approach and departure, ground clearance, ground pressure, ground contact area, turning radius, center of gravity, and horsepower to weight ratio are some of the physical characteristics affecting mobility. Cross-country mobility equal to that of track vehicles is the ideal in tactical trucks. The ideal may never be achieved, but the gap can be narrowed.

**Fordability.** The importance of being able to pass through shallow fords without dependence upon bridging is obvious. Tactical trucks must be inherently capable of fording at depths of not less than 30 inches (20 inches for ¼-ton trucks). Waterproofing kits are acceptable for deeper fording up to depths of five feet.

**Air Transportability.** Air transportability of trucks is highly important to the type field army. The corollary to this characteristic is light weight and compactness, with the stipulation that these are to be achieved without prejudice to performance and ruggedness.

**Durability.** The present criterion at Board 2, as to life expectancy, is that a wheeled vehicle shall be capable of normal tactical operation for 10,000 miles with only scheduled preventive maintenance and 20,000 miles without replacement of major components. An example of a feature wherein trucks have fallen far below this criterion is short brake life, resulting from inadequate sealing against mud and water. New designs under consideration show some promise of solving this problem.

**Ease of Maintenance.** This important subject pertains primarily to the Maintenance Section, but is also covered by the G&SPV Section from the 1st echelon point of view.

**Interchangeability of Components.** Lack of interchangeability of components has a seriously adverse effect on maintenance and supply. Ordnance, manufacturers, and using agencies, are well indoctrinated with the need for interchangeability.

**Fuel Economy.** Fuel economy is an important factor in evaluating tactical



Col. Edson Schull

trucks. A related factor is cruising range. 300 miles on roads without refueling is normally asked for in the case of trucks.

**Ease of Operation.** Tactical trucks must be easy to operate under all conditions of terrain, weather, and visibility. Controls must be simple, accessible, and responsive. Power steering is an example of an ease of operation feature normally specified for the heavier vehicles.

COL. EDSON SCHULL



*The writer of the following article served in the 2d Armored Division and the XIX Corps in Europe during*

World War II. Subsequent to the war he has been assigned as Mathematics Instructor, United States Military Academy, the Army Security Agency, and returned to the 2d Armored Division in Europe. He joined AFF Board Number 2 in January 1954 where he is Chief of the Maintenance Section.

In addition to normal maintenance of the administrative and test vehicles and signal equipment at Board 2, the Maintenance Section prepares the military characteristics for and conducts user tests on all maintenance equipment, runs ease of maintenance tests on all types of equipment, and coordinates with other agencies the user tests of vehicular-mounted signal equipment.

User tests of the M62 5-ton wrecker and M74 medium recovery vehicle have just been completed and tests on the M51 heavy recovery vehicle have been under way for about one year. An expedited 30-day test on a preproduction model of the M51 was completed on the first of April, this year. All these vehicles should be well known to units by the end of the year.

Many ideas for improvement of an existing tool or a new tool or part come to the board as suggestions from units. These ideas are thoroughly



The Maintenance Section retrieving a T34 Tank with the M74 Recovery Vehicle.



tested, compared, and cost weighed. Many are accepted.

Of special interest is the ease of maintenance testing. The program was established by this board in 1946 as a result of experience in World War II in maintaining vehicles under combat or field conditions. World War II vehicles had many features which made their servicing and repair difficult and costly in time, personnel, and tools. When a vehicle is difficult to maintain, it is lost for action much of the time, and the number of vehicles required to maintain a given fighting strength obviously increases. Moreover, there results a progressively increased burden in the supply services, from the using arm in the combat zone to the sources of raw material in the zone of the interior.

As a part of the user service test, each vehicle is tested for ease of maintenance to insure that servicing and repair can be done in a reasonable time in spite of limitations of space and increases in complexity. The scope of this testing includes the tools required for and the organizational maintenance done by the using troops.

First in importance is the work done by the tank or vehicle crew. The time required must be minimized, otherwise, too many hours are spent on maintenance and certain items may be neglected to the detriment of the fighting condition of the vehicle.

Next in importance is the company, battalion, and regimental maintenance. At this level, emphasis is placed on trouble shooting, adjustment, replacement of assemblies, and periodic preventive-maintenance services. Means for trouble shooting and adjustment are given high priority for they enable a mechanic to locate trouble and to make corrections with a reduction of trial-and-error methods and unnecessary replacement of parts. Because of limitations of time, tools, skills, and spare parts in organizational maintenance, unit replacement is extensively used. Consequently, checks are made to determine if items which are commonly replaced by using units can be replaced easily and quickly. Removable brush guards and engine-hood side panels, integral power packs, quick disconnects, and battery relocation on 2½-ton trucks are examples of the many ease of maintenance accomplishments.



Col. Jasper J. Wilson

Coupled with these tests are studies of the required tools. Recommendations are made as to the type and number of tools to be carried as on-vehicle matériel. The tools to be included in the 2d echelon special tool sets are checked for availability and adequacy. Similar checks are made of other organizational maintenance tool sets.

COL. JASPER J. WILSON



*The writer of the following article served as Regimental Surgeon, 175th Engineer Regiment, and Executive Officer, 52d Station Hospital in Europe during World War II. Subsequent to the war he was the Surgeon, Allied Control Commission in Hungary. Returning to the States in 1947 he was assigned as Post Surgeon, Camp Cooke, prior to his present position with AFF Board Number 2 where he is the Chief of the Medical Test Section and Medical Instructor at The Armored School.*

Nothing but the best for the treatment of the wounded soldier! The Medical Test Section of AFF Board Number 2 is responsible for the testing of medical equipment which is used in medical field installations within the field army. Of basic concern to the medical service is any article of equipment, new or modified, which will improve a casualty's chance of survival, expedite his removal from the field of battle, and provide for his emergency or defini-

tive treatment in army hospitals.

It is of tantamount importance, therefore, that medical equipment must be adequate and suitable for use by highly trained professional personnel in the most intricate of medical procedures. Dependability is the keynote to medical technical equipment, and near perfection must be attained. User reports from the field are of major consideration in the development and testing of medical matériel.

When new equipment is received for testing, several questions are immediately posed: Is the item capable of performing the task for which it is intended? Is it the best possible item for that purpose? Can it be improved upon by modification? Will it withstand the rigors of field use, handling, and transport? If the equipment is a modification of standard equipment, will it be an improvement on or a suitable replacement for the old item? With these questions in mind, equipment is tested to prove or disprove whether it meets the requirements established for it.

Equipment for field use must always be considered from the standpoint of weight and bulk since the installation where it is used may change location frequently. Thus, where possible, items of lightweight metal construction are most desirable if the feature of durability is not sacrificed.

Items which can be folded readily for packing are desirable where this feature can be accomplished. To exemplify this type of development, this board recently tested a telescopic-type leg splint constructed of lightweight metal which resulted in more than a 100% reduction in weight and a 200% reduction in cubage of the standard splint set. Thus, this unit of emergency medical equipment can be pack-carried by one individual together with his personal gear and can be more readily usable for air drops.

Many medical items being tested may be modified, without loss of efficiency, so that they can be packed with other items of medical equipment in the standard family of light metal medical field chests.

Always considered is the problem of ease of repair and parts replacement. In any case, simplicity of construction is of primary importance,





Lt. Col. Harry C. McClain

and the incidence of moving parts is held to a minimum.

All vehicles, including tanks and armored personnel carriers, are intensely studied and evaluated for their potential casualty carrying capacity, since combat experience has taught us that under stress conditions this means of evacuation may be the only feasible and available one.

The US Army Hospital at Fort Knox and the Army Medical Research Laboratory have cooperated wholeheartedly with this Board in extending to it the use of their personnel and facilities in equipment testing.

LT. COL. HARRY C. MCCLAIN



*The writer of the following article entered the Army in 1941. He served with the 21st Tank Battalion, 10th Armored Division, in Europe, during World War II. He joined AFF Board Number 2 in 1948 where he has achieved wide renown as one of the outstanding tank gunners in the Army.*

In this article I want to point out a number of things pertaining to Phase IV fire control system of the M48 tank which I have learned as a result of working with it for over a year.

This system helps the M48 tank commander-gunner team to get a first round hit faster than any other tank, provided the gun is properly zeroed, a prime requisite for accuracy. Even when the gun and fire control system have been boresighted and zeroed, the strike of the projectile at ranges

other than the zeroing range will not be exactly at the point of aim. This means that the gunner should remember how and when to apply Kentucky windage. The amount needed is quite constant and I apply it when on a competitive shoot. I believe that any gunner, once he knows that an error will constantly appear, will try to correct for that error before he fires. When conditions do not permit the gun to be zeroed, an emergency estimated zero may be used. However, this is a poor substitute because a proper zero setting varies with each gun tube and sight combination.

Now a little about time. In the Phase IV system, the T30 computer, which is linked from the range finder to the gunner's periscope through the ballistic drive, automatically puts the proper super-elevation into the gunner's sight as the tank commander ranges. After ranging is completed, all the gunner has to do is put his cross on target using gun and turret controls and then fire. This automatic action really saves time. The Phase III system is slower than the Phase IV since it has no automatic computer, and the range finder is not linked to the ballistic drive but hangs free in the turret. The tank commander has to hold the instrument on target with his left hand while ranging with his right. This is awkward and time consuming.

Crew comfort is a factor which affects time in getting off a round. The gunner's position in this tank is very good roomwise, except as it pertains to use of the telescope. At present, he is unable to use his right eye for sighting while seated with hands on the turret controls. Also, he must shift position as the gun is elevated or depressed since the eyepiece moves with the gun. This is particularly uncomfortable at maximum and minimum gun elevations. The tank commander's position has become very crowded. Since the commander must have all-round observation, he rides with his head exposed. Getting from the exposed position to the range finder and commander's control handle is difficult because the seat gets in the way. A seat that is easier to adjust would certainly improve this situation. The commander's caliber .50 machine gun and ammunition box present another obstacle for him to

maneuver around in going to the ranging position. Also, the dangling cords of his radio chest set can get mixed up within the close quarters of this cupola. At times this causes the chest set plugs to become disconnected. A better appreciation of the commander's necessity to move about is needed.

Obscuration can be a great drawback to effective tank gunnery. If the tank is fired upon dusty ground, the resulting smoke and dust will, in many instances, prevent sensing of the round. In those instances, considerable time may be lost before another round can be accurately fired. At times obscuration, coupled with short time of projectile flight, prohibits its tracer sensing, greatly increasing the number of lost rounds.

Men coming out of basic training are usually not good range-finder operators. They just do not get enough practice readings. I have talked this over with a friend who taught the range finder in basic training and we feel that the answer to this problem might be to conduct training on floor-mounted instruments in a classroom. Thus, tank maintenance would not take up as much of a trainee's time.

Old Armor NCO's tell me that the range finder takes too much training to ever really get any good out of it. These are the men who knew World War II gunnery (adjustment) but haven't had a chance to really work with or understand the instrument. I know it does take time to produce a good range-finder operator; however, it will pay for itself if given the chance.

M SGT. WINFORD B. TUBBS



M Sgt Winford B. Tubbs



# ARMOR in Atomic Warfare

by

BRIGADIER GENERAL PAUL A. DISNEY

**I**N this atomic age there arises the question of the ability of Army forces in the field to survive in the face of the tactical employment of atomic weapons against them. Is there a means of survival which is not so passive in nature that it precludes ever defeating the enemy by accepted doctrine, particularly the doctrine of concentration of force? Must our tactical doctrine be changed?

Present doctrine calls for the concentration of force at a selected point, be it either for the attack or counter-attack. It is by concentration that the greatest blow can be delivered, or the greatest pressure maintained, by the attacker. At the same time, however, such concentration will offer to the defender the greatest opportunity for defeating the attacker

by the tactical use of atomic weapons. Granting a lack of ability by an attacking force to provide complete defense against the application of atomic weapons against it by air or artillery, it would appear that we must evolve a solution for successful offensive action which does not require the concentration of force. However, if practical experience and the history of warfare can be considered as appropriate guides, such a solution appears to be beyond the realm of possibility.

The required solution then seems to lie in a determination of means whereby periods of dispersion can be maximized and periods of concentration minimized. The means must permit the larger forces to remain dispersed in units of a size unprofitable for atomic attack (or even attack

by heavy conventional bombing or artillery) until the ultimate moment for the attack. They then must be able to concentrate rapidly for the attack in such force as to permit easy penetration of the enemy covering forces, or complete avoidance of them, and the rapid attainment of close contact with main defending forces.

The need for rapid closure with the main defending forces is highly essential, in that it will preclude the use of atomic weapons against the attacker. Conversely, if the attacker is blocked by relatively small security forces at a safe distance from the main defending forces, it would lessen the "squeamishness" of the defending force commander in using atomic weapons. This leads to an interesting consideration of present



doctrine that the point selected for the attack should be one at which the defending forces are least prepared to receive it. Under these circumstances, the defenders may be so few in number that there would be little reluctance in employing atomic weapons against the attacker. Further, the possibility exists of the defender intentionally withdrawing his forces in the face of a concentrated attack in order that atomic weapons could be employed against the attacker with a minimum of destruction to his own forces.

The employment of atomic weapons by the attacker requires that the attacking ground forces remain at a relatively great distance from the area of burst. Following the burst, time and space between the attacking forces and those remaining forces of the defender must be overcome rapidly in order to fully exploit the effect of the atomic burst.

In any of the above situations, the attacker must be capable of rapidly concentrating for the attack, pushing it home, and then rapidly deploying his forces to again provide an unprofitable target for enemy atomic weapons. Application of these tactics requires that the forces of the attacker assemble in the attack position and attack in less time than that required by the defender to obtain information of the attack, and to bring atomic weapons to bear on the concentrated attacking forces by air. Also, the speed of movement of the attacker must exceed the speed of adjustment of atomic artillery on the moving forces of the attacker. It may be necessary to avoid assembly in an attack position, with the necessary concentration taking place at the area of contact with the main defending forces.

The mobility of the attacker must be such that at any time his forces are able to disperse from columns on roads and advance rapidly cross-country, or to avoid road movement entirely.

The communication facilities of the attacker must be such that information and orders can be transmitted rapidly while forces are moving and dispersed. This primarily requires radio communication.

His firepower must be of such type that great concentrations may be brought to bear on the defender at selected points with relatively small

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*Rapidity of movement by ground force troops has taken on an increased importance with the advent of tactical atomic weapons on the battlefield. Armor's mobility is the answer.*

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concentrations of personnel and equipment.

Maximum protection against the effects of atomic weapons must be provided for the individual soldier. The shielding effect of armored vehicles may provide the best means available.

What of the defense? Here again, as with the attacker, the defender cannot afford to provide profitable targets by static concentrations of forces in conventional defensive positions. He must remain dispersed, depending on timely information of any attacks in force to indicate when and where he must concentrate for the defense. He must then move rapidly, concentrating at the point of attack in consonance with the attack concentration. In this respect, and as noted in the discussion of the attack, there is the possibility of getting "sucked in" to a defensive concentration against a fake attack—and a resulting danger from a planned atomic "clobbering" while so concentrated. The solution here, also, is to rapidly deploy out of the dangerous concentration. The defender therefore must have forces which have the same mobility characteristics as those indicated for the attacker.

The foregoing concept of tactics imposed by atomic warfare is characterized by almost continuous movement engendered by the requirement for rapidly alternating concentration and dispersion. It is evident that the side with the greatest mobility, everything else being equal, will have the advantage. Mobility becomes the decisive factor in atomic warfare.

The dictate for dispersion for maxi-

mum periods of time leads to consideration of the possibility that ground warfare of the future may be conducted by smaller, but more powerful, self-contained units capable of independent operations. Combat of the future may be characterized by many relatively small battles rather than by the "collision" of large massed forces as in the last two major wars. Under these circumstances, larger gaps will exist between the forces deployed, and greater opportunities will exist for exploitation by forces mobile enough to take advantage of them. The defender likewise must be similarly equipped to thwart the attacker. Here again, if this type of warfare should "come to pass," the victory will be to the most swift.

At the beginning of this article two questions were asked. In answer, the foregoing discussion is believed to indicate that we need not adopt passive measures for protection against atomic weapons on the battlefield and thus lose the initiative; on the contrary the greatest hope for retention of the initiative and the achievement of victory, together with the greatest safety from atomic attack, lies in greater mobility and possibly greater reliance on the use of smaller, more powerful self-contained units. We need not change our tactical doctrine; we do need to stress the provision of ground mobility in implementing our present doctrine.

With respect to atomic warfare alone, never before has there been such a requirement for mobile forces—and a "new look" at the combat unit organization and troop basis of our Army. *Mobility becomes the decisive factor in atomic warfare.*

If the characteristics of the forces required for engagement in atomic warfare are closely examined, there emerges a striking resemblance to those of present-day Armor.

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**BRIGADIER GENERAL PAUL A. DISNEY** served with the Second Armored Division during World War II. He is the author of the book entitled "Tactical Problems for Armor Units." He is presently assigned to G4, Department of the Army.



# THE T43 HEAVY TANK

*Packing the heaviest firepower ever included on a production tank in the United States, the T43 completes our post-World War II "family" of tanks. Although in production for over two years, this is the first information to be made public.*

The long-secret T43 heavy tank was shown publicly for the first time on the 12th of May at the Chrysler Delaware Tank Plant, Newark, Delaware, before a group of Army, Marine, and public officials. Lieutenant General John E. Dahlquist, Commanding General of Army Field Forces, and Lieutenant General Williston B. Palmer, G4, Department of the Army, headed the Army contingent of notables.

Designed by Army Ordnance at the Detroit Arsenal and Chrysler engineers, the T43 is the nation's newest and biggest military tank. The pilot model was turned out in November of 1951. The tank weighs in the neighborhood of 60 tons and mounts a long-barrel 120-millimeter gun as its main armament, the heaviest firepower ever included on a production tank in this country.

In production at the Chrysler Delaware Tank Plant for more than two years, the T43 completes an entirely new series of American tanks designed since World War II. The M41 "Walker Bulldog" light tank, weighing approximately 25 tons, was released in the spring of 1951. In April, 1952 the M47 medium tank was released and in July of the same year the "Patton" M48 was unveiled.

Each of these medium tanks weighs between 45 and 50 tons.

The public demonstration was designed to illustrate graphically the extreme mobility and ease of operation of the T43 despite its great size and weight. Like the "Patton" 48, the T43 is powered by an 810-horsepower, 12-cylinder, air-cooled engine. Also, similar to the 48, it has automatic cross-drive transmission.

The tank is manned by a crew of five—a tank commander, gunner, loader, assistant loader, and driver.

The T43's heavily-armored turret and hull are each cast in one piece and they are contoured to provide the maximum protection against enemy fire. These features were designed to provide the greatest possible safety for the tank's crew while the high-velocity 120-millimeter gun gives the tank the firepower to out-slug any tank in the world today.

Additional firepower on the T43 includes two .30 caliber machine guns and a .50 caliber machine gun which can be loaded, aimed and fired from the inside of the tank without exposing any member of the tank crew to enemy small arms fire.



U.S. Army

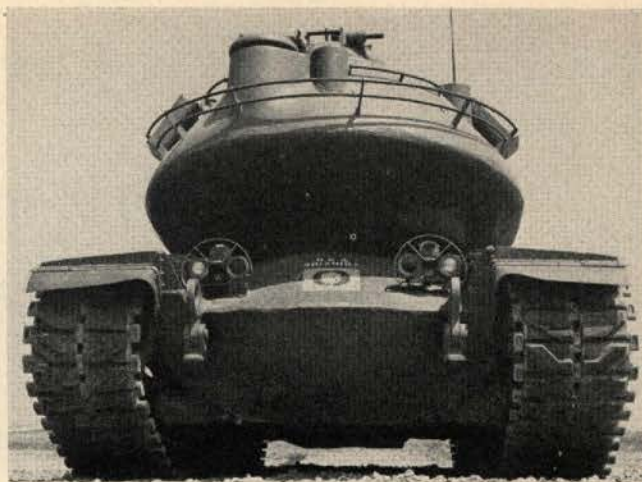
The whole family of tanks. From left to right—the T43 heavy, the M48 and M47 medium tanks, and M41 light tank.





U.S. Army

A rear view of the T43 heavy gun tank with its 120mm high velocity gun resting in the travelling position.



U.S. Army

A worm's-eye view of front of T43, showing its heavily armored one-piece turret, contoured for maximum protection.



U.S. Army

Another view of the family, showing the T43 in foreground, and in rear from left to right, the M47, M48, and M41.



Chrysler

13 years of progress—a view of the T43 and the first tank that Chrysler produced in 1941—the M3 General Grant.



U.S. Army

A low three-quarter view of the T43 moving slowly through the water bath basin at the Aberdeen Proving Grounds, Md.



Chrysler

Three T43's proving their maneuverability during the demonstration at the Chrysler Tank Plant, Newark, Delaware.



# NOTES ON THE TRAINING OF AN ARMORED DIVISION

by

BRIGADIER GENERAL HAMILTON H. HOWZE

## COMBAT FIRING DRILLS

**T**HE first article, appearing in the November-December issue of *ARMOR*, dealt in some detail with battle drill, a drill in which competence is required of all units of the 2d Armored Division. The second dealt with a number of training procedures in effect in the division, and the third set forth certain techniques of fire support—by tanks in overwatching fire positions, by armored artillery, and by anti-aircraft automatic weapons—as practiced here. This article, the fourth, describes in some detail the combat firing drills which tank companies, infantry companies and reconnaissance platoons of the division run through twice yearly.

### The Nature and Purpose of Combat Firing Drills

We are all quite aware that, generally speaking, and with due acknowledgment of the fact that safety imposes certain unrealistic and therefore undesirable restrictions, combat firing exercises are the closest one can come in training to the actuality of battle itself.

It is the normal thing to include this sort of training in the training program of all active units. Normally,

however, the nature of the problem is outlined only in general terms to the unit commander. The commander formulates his plan, and the exercise is run according to that plan; then a critique is held and the exercise considered terminated. This treatment of combat firing is of course sound, and it is included in the annual company and battalion tests specified by Army Field Forces.

The combat firing *drill*, however, undertakes to teach battlefield techniques in a somewhat different way. It is called a drill, as against an exercise, because the thing is "canned," from start to finish. If the reader is inclined to reject the idea of canning, let me ask him to remember that the uncanned combat firing exercise is also a part of our training program, as indicated above.

The combat firing drills in the 2d Armored Division have been worked out in detail at Division Headquarters. Formulation of the problems has

been an exceedingly careful process, to make sure that the firing techniques and the tactics of the problem are absolutely correct, and that the problem is as realistic as safety and range limitations permit. Thus, as finally approved, and as run by the various companies and platoons of the division, each combat firing drill (to the extent that the talents of the division can make it): (1) is a tactically perfect solution to a typical combat problem, (2) exercises the unit in every sort of combat fire useful in offensive action, (3) takes maximum advantage of the range facilities available, operating within but only just within the safety limits respecting impact area and direction of fire, and (4) utilizes ammunition to the maximum advantage of the individuals and gun crews which fire it.

The foregoing is achieved at the cost of denying to the company commander the privilege of making up his own plan of attack. But our company commanders get this practice in countless other exercises, and the drill, as prepared at Division Headquarters, is a scheme of maneuver and fire plan as it might have been worked out (in somewhat unusual detail) by a company commander.

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BRIGADIER GENERAL HAMILTON H. HOWZE is presently assigned as the Deputy Chief of Staff for Plans, Headquarters, Seventh Army. He served in Europe during World War II with the First Armored Division. Prior to his present assignment he was the Assistant Division Commander, Second Armored Division.



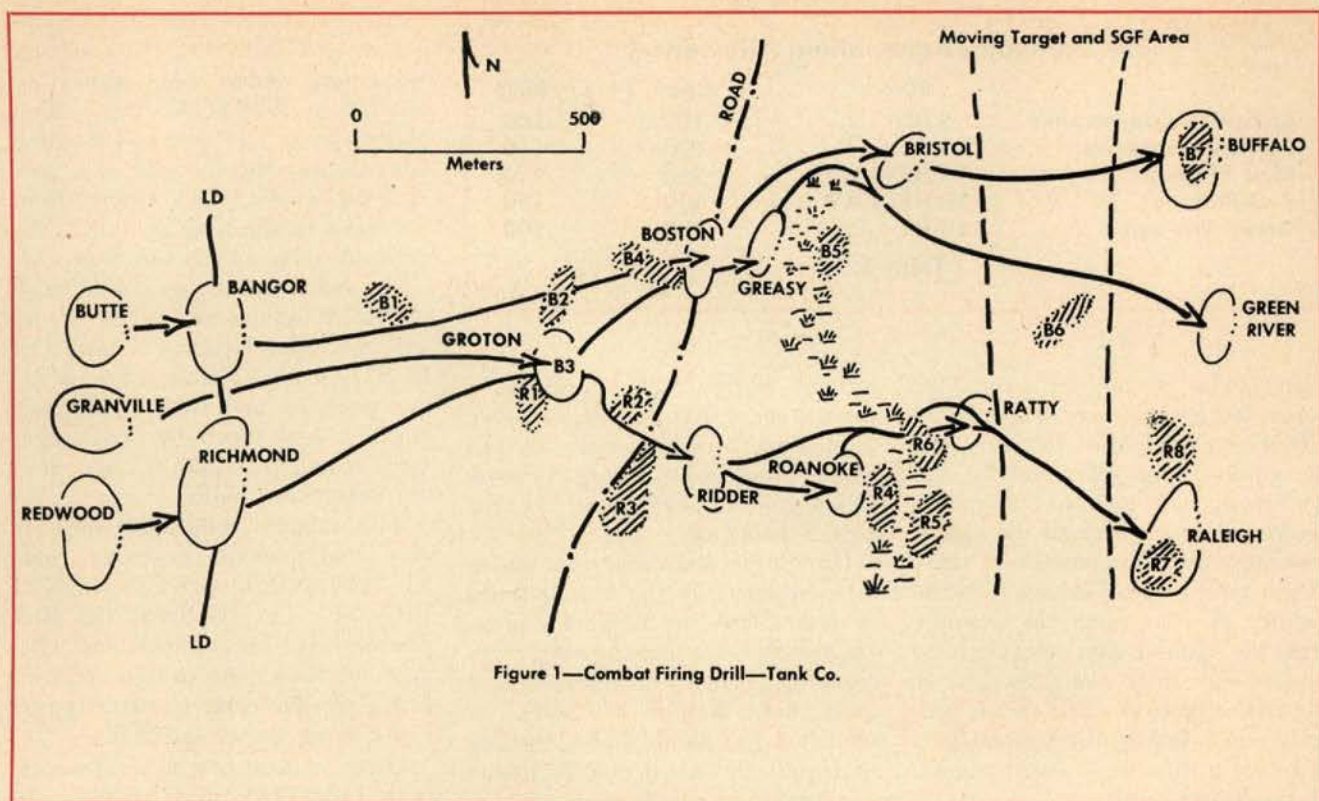


Figure 1—Combat Firing Drill—Tank Co.

The execution of the drill is entirely under his control: it is as though he took a plan of attack formulated by a previous company commander, adopted it as his own because of its presumed excellence, and made his attack according to it.

The end result is that each company executes a very excellent attack, and it does it three times, twice yearly.

There are for each company, naturally, three platoon roles. For the purpose of clarity in describing the drill and the manner of its execution, the platoons are called Blue, Green, and Red; these, however, are problem titles, the company commander being required to refer to his platoons by their normal designations.

The outline of the drill being presented to the company commander some weeks prior to the actual running, the officers and noncommissioned officers of the company are made very familiar with it by means of charts and sandtable rehearsals. On the day of the exercise visual reconnaissance from the line of departure is accomplished. The drill is then run through, the company commander being in unrestricted control of his company. At the conclusion of the drill the company is assembled

for a critique; meanwhile the range targets are reset as necessary, and (in order that units not be hurried) another company runs through the drill. After the critique, a resupply of ammunition is issued to the company which has run it once, the platoons shift roles (Red platoon shifts to Blue platoon, Blue to Green, and Green to Red) and the drill is repeated. At the conclusion of the second run another critique is held, ammunition issued again, platoon roles shifted, and the drill is run a third time.

At the conclusion of the three drills, each platoon of the company will have functioned extensively: (1) in the execution of supporting or overwatching fire in support of assault elements, (2) in the assault, and (3) in the use of all the weapons available to it, including the execution of assault fire or fire-while-moving. The officers and noncommissioned officers of the company (and to some extent the individual soldiers) meanwhile have gained a very considerable understanding of the principles of fire and movement, and the correlation between the two.

As is to be expected in view of the sandtable rehearsals and the repetitive running of the drills, the companies become exceedingly proficient. Ob-

servers are usually impressed by the speed and smoothness of execution displayed—and the companies are equally impressed by their own abilities. This degree of excellence is attained, of course, through the somewhat artificial advantages of repeated practice, and it is sensible to reflect that without those advantages execution would be appreciably less perfect.

On the other hand, the company which has become thoroughly familiar with a first-class combat problem, and has learned to execute it with speed and skill, will operate with greater efficiency in other attacks, on other ground, against a real or simulated enemy.

*At least we think so.*

### The Combat Firing Drill for the Tank Company

Ammunition is issued to each tank, for each drill, according to Table 1.

Companies operate under the direction of the company commander, in a tank; with the company commander is an artillery forward observer, also in a tank.

The terrain may be visualized by reference to Figure 1. On the range available to this division in Germany the distance from the line of departure to the final objective (on the



### Tank Company Ammunition Allowances

	90mm	Coax	BOG
Company Commander	5 HE	100	100
Forward Observer	5 HE	100	100
Blue Platoon	15 HE, 4 WP	250	250
Red Platoon	20 HE, 4 WP	500	150
Green Platoon	10 HE	250	500

Table 1.

right of the sketch) is only 2300 yards: we wish it were longer. The LD is on a ridge line. From the LD the ground drops off gradually, but with many folds in it, to the road, at about mid-range. Beyond the road is a swampy bottom impassable to tanks except where a road crosses it in the vicinity of R6. From the swampy area, the ground rises irregularly to a prominent ridge along the line of the final objectives. The area is generally open, but in the western part there are a number of small patches of woods and brush.

H is taken as the hour of attack, being set by the battalion commander. At H-25 minutes, platoons close in positions BUTTE, GRANVILLE, and REDWOOD. It is significant to note that names given platoon positions, and target area designations, conform in initial letters to the initial letters of the platoon designations, Blue, Green, and Red.

At H-20 Blue platoon moves into previously reconnoitered firing positions at BANGOR and Red platoon into previously reconnoitered positions at RICHMOND. Green platoon remains at GRANVILLE.

From H-20 until H Hour, Blue platoon, from firing positions on BANGOR, engages targets (areas of brush, woods, or high grass offering possible cover to enemy guns) B1, B2, B3, B4, B5, B6, and B7. Targets receive attention in the form of 2 to 6 or 7 90mm HE rounds each, depending on their size and location; the nearer targets are also engaged with coaxial machine guns.

Red platoon engages targets shown as R1, R2, R3, R4, R5, R6, R7, and R8.

The fire of these platoons is organized and delivered strictly according to the technique described in the third article of this series for the execution of overwatching fire by tanks. The fire is deliberately accomplished,

without hurry, each round being made to count. Range finders are used to minimize wasted rounds. By this process the overwatching platoons seek to gain "mastery by fire" over the area of the attack.

During this and subsequent phases there appear (see the area outlined by dashed lines, on *Sketch 1*), an occasional sled-type moving target representing an enemy tank flushed from cover, and a number of "SGFs," or simulated gun flashes. The latter are electrically detonated powder flashes representing the flash of an antitank gun; behind each flash is a very low and difficult-to-see OD panel, representing the gun itself. Great attention is paid to the speed and accuracy with which the overwatching platoons engage these targets, the time in seconds from the appearance of the flash to effective engagement being noted and recorded.

The company commander and platoon leaders on BANGOR and RICHMOND are concerned primarily with control of the fire, and with scanning the area for enemy tanks and guns—which must be quickly and accurately engaged by *any* tank that sees them.

At H-1 Red and Blue platoons place a smoke screen (which is usually a remarkably effective one) along a line about 400 yards short of the line of final objectives.

At H Hour Green platoon, initially moving in line of section columns and then deploying, moves out of GRANVILLE and following the route indicated goes to GROTON, using its machine guns to spray the area before it. Since Green platoon moves over lower ground the fire of Blue and Red platoons is not masked. On GROTON Green platoon takes firing positions and engages with machine guns and 90mm targets B5, B6, and B7, plus any moving targets and SGFs which may appear.

As soon as Green platoon is established at GROTON the company commander orders Blue platoon to proceed to BOSTON. After Blue platoon passes B2 it uses bow machine guns in spraying B4, and as it goes into the woods which extend from B4 down to the road at BOSTON, the tank commanders use their Cal. .45 greaseguns to engage a number of individual silhouette targets representing scattering enemy infantry. On BOSTON Blue platoon takes up firing positions and with 90mm and machine guns continues the engagement of targets B5, B6, B7, and moving targets and SGFs.

The company commander then orders Red platoon to move from RICHMOND through GROTON to RIDDER. On RIDDER the Red platoon takes fire positions and with appropriate weapons engages areas offering possible cover to enemy guns, and moving targets and SGFs.

Green platoon now moves forward from GROTON to GREASY. At GREASY (by the name one can see that the author of the problem ran out of town names starting with Gr) the platoon encounters a swampy area, dismounts its bow gunners for ground reconnaissance as per battle drill (described in the first article of this series), and based on their findings reports the area impossible to cross. The company commander accordingly orders Green platoon to remain at GREASY in fire position and orders Blue platoon to move around the north end of the swampy area to BRISTOL.

The foregoing little procedure is followed faithfully each time, even though the Green platoon leader and the company commander know perfectly well beforehand that the reconnaissance party will find the swamp impassable. It is good practice.

As Blue platoon approaches BRISTOL the company commander orders Green platoon to sideslip the obstacle, follow Blue platoon and come on line with it; as Green platoon draws abreast, Blue and Green platoons together move off on assault of BUF-FALO and GREEN RIVER using their machine guns to spray the ground before them as they move. Red platoon continues to fire, from RIDDER, to cover the right flank of the assaulting platoons.

The tank commanders, as they



move onto their final objectives, see a number of foxholes and machine gun pits into which they lob grenades. We use colored smoke grenades as an imperfect substitute for fragmentation grenades, which are not available to us.

When Blue and Green platoons arrive on BUFFALO and GREEN RIVER the company commander orders Red platoon to assault RALEIGH. Red platoon establishes a section at ROANOKE to cover the other section as it (using battle drill) reconnoiters the road crossing the swampy area for mines. The section then proceeds to RATTY, and takes up machine gun fire from that position; the other section joins it, and the complete platoon makes its final assault on RALEIGH. From BUFFALO, GREEN RIVER, and RALEIGH a few silhouette targets are visible on the eastern slope of the ridge, representing retreating enemy infantry. These are engaged by machine guns.

It should be noted that there is very meager enemy representation by visible targets. This is because we believe that the enemy in a defensive position is practically invisible. Gunners must learn to engage probable or possible enemy locations effective-

ly; it is very bad practice, in our opinion, to show targets so plainly that troops get the impression that the enemy is prone to paint himself white and stand up where one can easily see and as easily clobber him.

### Artillery Fire Plan

Figure 2 indicates the artillery fire plan prepared for the drill by Division Headquarters and made available to the company commander, platoon leaders, and forward observer.

The forward observer uses this fire plan in the first two drills to call on an established artillery fire direction center for *simulated* fire—at the request of the company commander and platoon leaders, and on his own initiative. This procedure follows closely the system laid down for the utilization of artillery in the third article of this series.

On the final drill for each company, artillery fire is actual, one round representing a battery concentration (one 3 round volley of a six-gun battery). The forward observer causes fires to be delivered as follows:

- (1) H Hour: Fire Group K and then Group P.
- (2) As Red platoon crosses IDAR ROAD: Fire Group L.
- (3) As Green platoon approaches

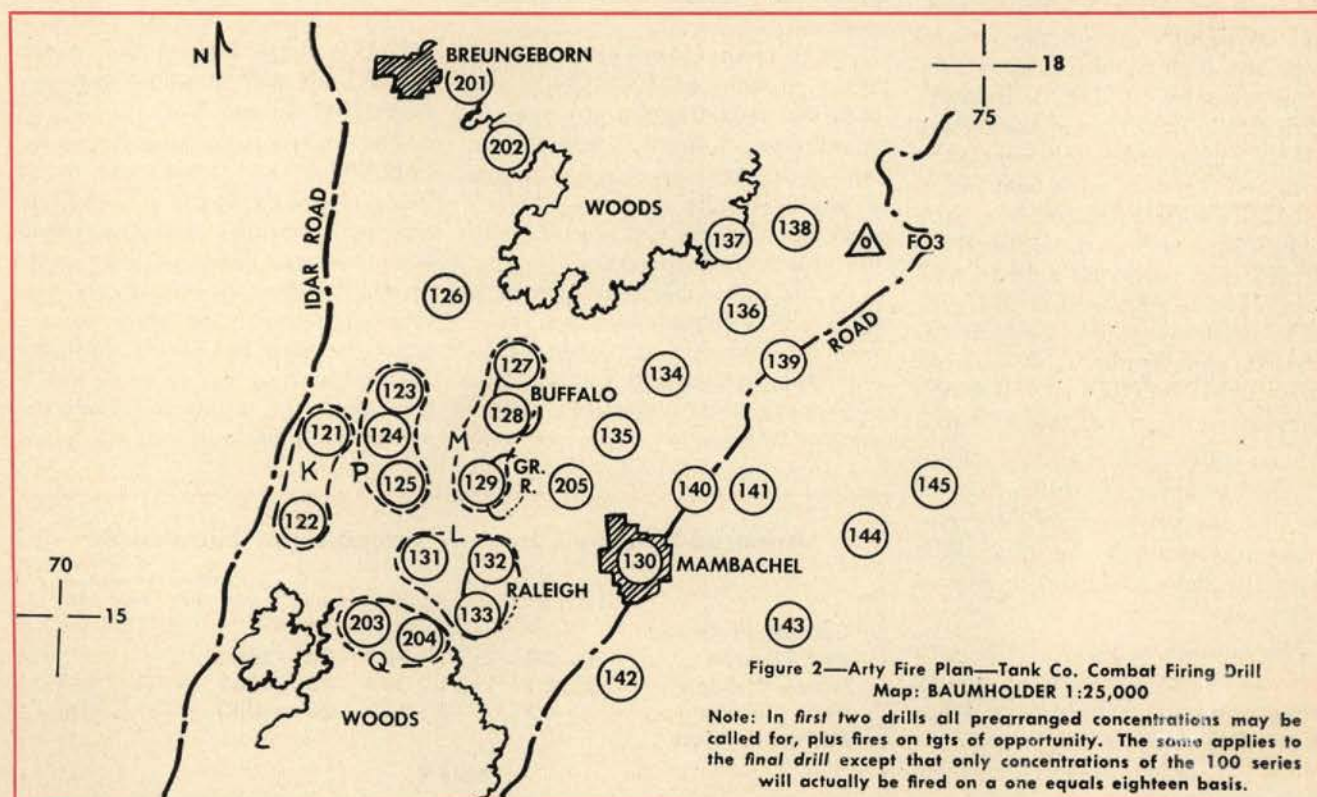
IDAR ROAD: Fire Group P.

(4) As Blue platoon approaches BRISTOL: Fire Group M and Concentration 126.

(5) As Blue and Green platoons jump off from BRISTOL: Fire Group M, then fire Group L and Concentration 126. Fires on Group L or Concentration 126 will be smoke; the decision as to *which* will be smoke being decided in advance by the company commander.

We use one round to represent 18 because we have not enough 105 ammunition to do better. The convention is actually an excellent one, and makes it possible for us to spread the use of artillery ammunition to a large number of combined arms problems.

After the platoons arrive on their final objectives, in the third drill, the tank battalion commander designates to each platoon leader a spot beyond the line of objectives where there is assumed to be an enemy target meriting the use of artillery to destroy it. He selects each spot to coincide with the prearranged concentrations shown in Figure 2. The platoon leader goes through the simple procedure, by radio, to get the artillery fire down; it comes in the shape of a single live 105 round.





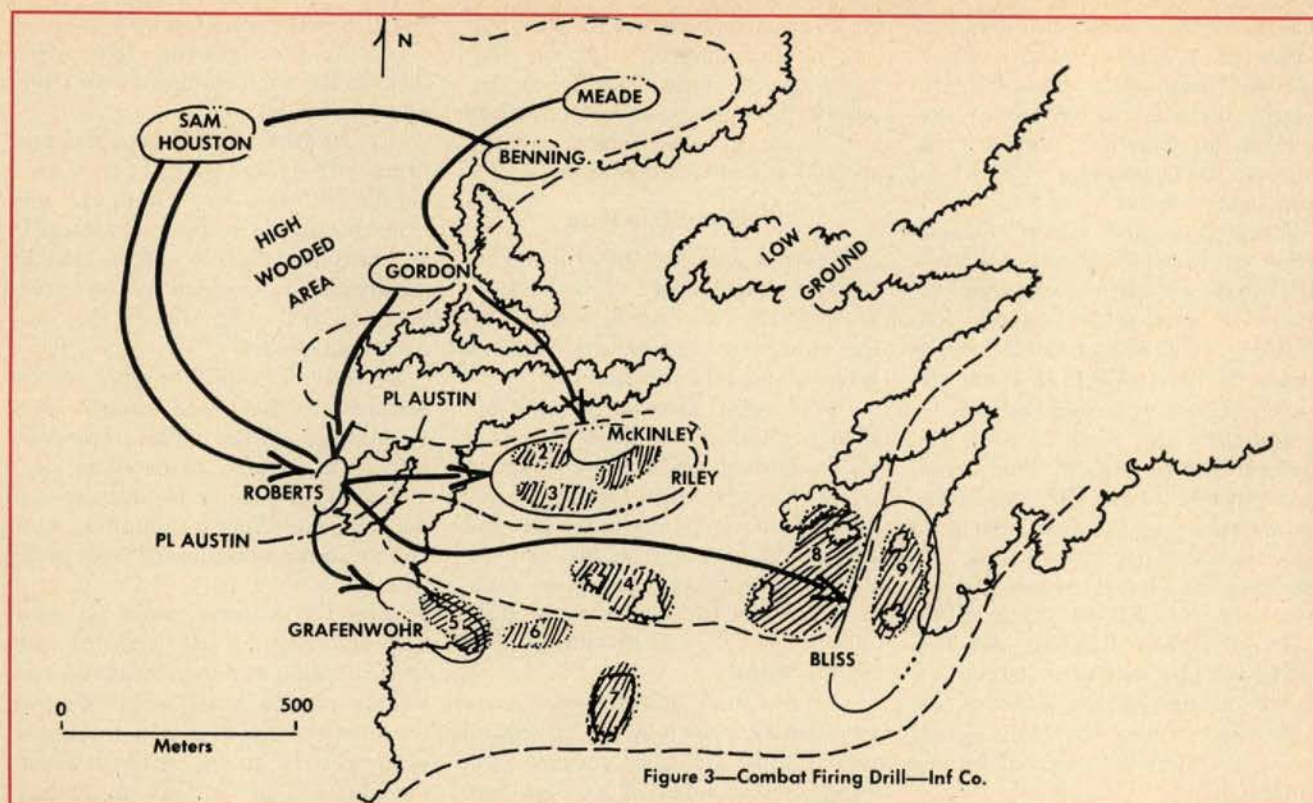


Figure 3—Combat Firing Drill—Inf Co.

### Combat Firing Drill for the Reinforced Armored Infantry Company

A look at Figure 3 will suffice to show the general nature of the terrain. The dashed line represents a single contour. MEADE, BENNING and GORDON are on the forward slope of a high wooded ridge; a deep gorge separates GORDON from RILEY, ROBERTS (in the woods) and RILEY (open, with patches of brush) being on another prominent ridge; GRAFENWOHR-BLISS is a third ridge, separated from the ROBERTS-RILEY ridge again by a fairly deep draw. The area from ROBERTS-RILEY north is rough and mostly wooded, unfavorable tank country; the GRAFENWOHR-BLISS area is open and easily traversable by tanks.

Each company has a tank platoon attached to it for the drill. As with the tank company, each infantry company runs through the drill three times, the platoons shifting in role for each drill.

Ammunition is issued to the company as shown in Table 2, figures being the number of rounds per weapon per drill (Cal. .30 machine gun is shown as total rounds per platoon per drill).

### The Drill

The company closes in SAM HOUSTON at H-25 minutes. At H-20 minutes Green and Blue platoons move out from SAM HOUSTON and at H-5 minutes close in previously reconnoitered supporting positions.

At H Hour Green platoon, from firing positions on GORDON, and with due regard to the principles of distribution of fire (as respects not only area, but time), engages targets 1 and 2 (brushy areas on RILEY) with rifle and .30 Cal machine gun fire, and 3.5 inch rocket fire.

At the same time Blue platoon at BENNING engages targets 1 and 2 with rifle and .30 Cal machine guns, and with its four .50 Cal machine guns firing from ringmounts on the carriers. Also at H Hour the mor-

tar platoon from fire positions on MEADE engages target 3, the reverse slope of RILEY. To get good observation from the vicinity of MEADE the FO must climb a tree—a very commendable practice for young lieutenants and sergeants.

From positions just east of BENNING a single tank section is emplaced, and with machine guns engages targets 1 and 8.

This initial supporting fire is accomplished very deliberately, stress being placed on accuracy of delivery and fire control by officers and non-commissioned officers, to insure proper distribution. No targets are visible: logical defensive areas are engaged as suspected enemy positions.

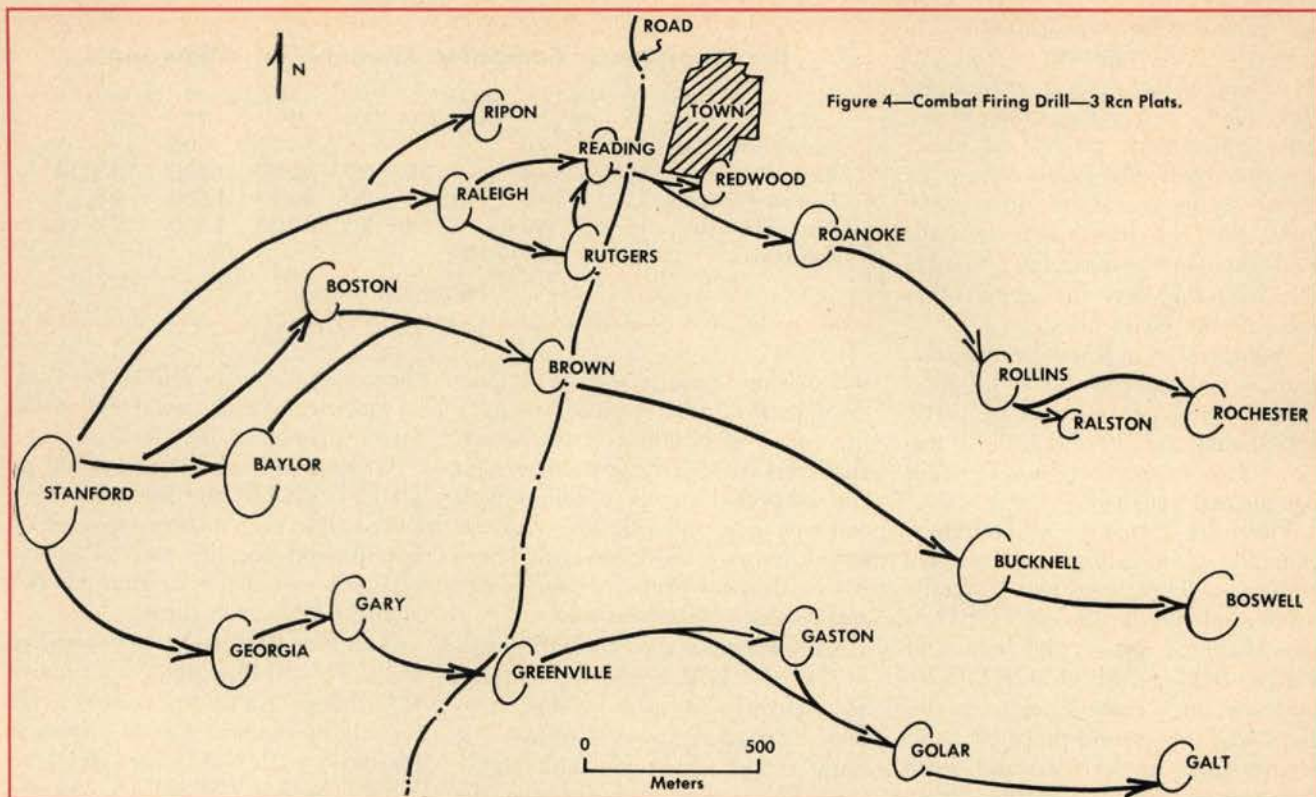
Red platoon, in approach-march formation with a covering force, has meanwhile moved out of SAM

### Armored Infantry Company Ammunition Allowances

	3.5	Smoke					.30	60mm	60mm	.50
		M1	Strms	R/G	BAR	Carb.	MG	HE	Prac	MG
Command Group	32			2		20				
Red Platoon	3	80	2	4	200	20	2000			
Green Platoon	3	80	1	4	240	20	4000			
Blue Platoon	80			2	160	20	3000			400
Mortar Platoon								3	7	

Table 2.





HOUSTON along the route indicated to ROBERTS. On leaving ROBERTS the Red platoon reports to the company commander by radio and by prearranged pyrotechnic signal, takes up an assault formation (*column* of squads in line) and proceeding across phase line AUSTIN (reporting again) assaults RILEY, using marching fire against a number of silhouette targets visible for the first time. The men are required to do a good deal of yelling in course of this assault. In the assault Red platoon must remain on the northern slope so as not to expose itself to enemy fire from GRAFENWOHR and BLISS—a very important matter. As they proceed down RILEY the squads peel off from the rear, in sequence, and take up fire against a few fleeing enemy, and on GRAFENWOHR.

As the company commander receives reports of Red platoon's progress, he shifts supporting fires east on RILEY, and eventually lifts them altogether.

Blue platoon at BENNING now engages targets 8 and 9, using Cal .50 machine guns only.

As the Red platoon occupies RILEY and from that point engages targets 4, 5, and 6 with fire, the company commander orders Green platoon to move out from the

toon to move from GORDON across the deep draw to ROBERTS prepared to assault GRAFENWOHR; simultaneously he requires the mortar platoon to displace mounted from MEADE through GORDON to McKINLEY, and from there to engage target 5. As Green platoon crosses phase line AUSTIN the platoon leader, again using radio and pyrotechnic signal, notifies the company commander who lifts supporting fires from GRAFENWOHR. On becoming established at GRAFENWOHR Green platoon engages with rifle and machine guns targets 4, 7, and 9. Red platoon on RILEY has meanwhile shifted its fire to targets 8 and 9, and the mortar platoon to 9.

The company commander has meanwhile assembled his tank platoon (from SAM HOUSTON and BENNING) and Blue platoon (from BENNING) in the area of ROBERTS. Green and Red platoons and mortar platoon still continuing their fire, the new assault force, tanks leading, assault mounted from ROBERTS to BLISS. The tanks fire their machine guns as they move. In the near edge of BLISS the assault halts, for safety, for one minute while supporting weapons are cleared. After this Blue platoon jumps out of its

carriers and forming on the tanks moves through the objective, using marching rifle fire. Upon success, Blue platoon organizes BLISS against attack from east and south; Green platoon organizes GRAFENWOHR against attack from south and west; Red platoon organizes RILEY as a reserve position, and the tank platoon is assembled in mobile reserve in the draw just south of RILEY.

### Use of Artillery

An artillery fire plan, similar to that which supports the attack of the tank company, is provided for the support of the attack of the reinforced armored infantry company. Prearranged concentrations are made available to platoon leaders again, the fire plan following the principles laid down in the third article of this series. Again the artillery is simulated, in the first two drills; for the third drill live artillery fire is used, on the one-round-equals-18 basis. As with the tank company the battalion commander visits the platoon leaders after they have secured GRAFENWOHR and BLISS and indicates to each a target which the platoon leader must engage by reference to the fire plan and by calling for the fire, actually delivered (one round).



## For the Reconnaissance Company

Although the drill is written for three platoons operating under a company commander, individual reconnaissance platoons (such as are assigned to tank and infantry battalions) may run the drill first in the Red, then in the Blue, and then in the Green role, even though the other roles are not being filled.

Ammunition is issued to the company as indicated by Table 3, figures shown being per weapon per drill, except that Cal .30 and Cal .50 machine gun is shown as total rounds per platoon per drill:

Please see Figure 4. The terrain is generally open, rolling, with patches of woods. The ridges run generally north and south. STANFORD is in a sheltered area at the bottom of a draw; BOSTON-BAYLOR-GEORGIA are on a ridge line; from this ridge line the ground drops off in irregular folds to the road and again rises to a prominent ridge line, ROLLINS-BUCKNELL-GOLAR. ROCHESTER-BOSWELL are on somewhat lower ground, at the lip of another draw.

The company is assumed to be operating in newly penetrated enemy rear areas, the enemy scattered but still fighting.

At H Hour the several platoons leave STANFORD, each with orders to proceed on specified axes to ROCHESTER (Red Platoon), BOSWELL (Blue) and GALT (Green Platoon).

Each platoon has its tactical procedures outlined for it in detail, with due regard to Battle Drill formations and actions. I omit the detail: it is enough to point out that each platoon works its elements forward by bounds, one or more fire positions and the mortar supporting a moving element as it hastens forward to the next position, and artillery fire (using same basic system as in other drills) supporting the whole. ROLLINS, BUCKNELL and GOLAR, being three points of natural strength on a ridge line, are assaulted by the platoons in T formation, the company commander coordinating the timing. Except for this action the platoons act relatively independently, only lateral contact being required, in their forward movement.

Tanks find targets for their 76mm

## Reconnaissance Company Ammunition Allowances

	76 HE	76 WP	M1	Smoke Strmrs	BAR	Carb.	.30 MG	.50 MG	81mm HE	81mm WP
Command Gp.	5		40				1500	500		
Red Platoon	20	5	40		80	20	6000	1500	13	12
Green Platoon	25	5	40		80	20	6000	1500	9	9
Blue Platoon	15	5	40		80	20	6000	1500	9	8
Control		4		10						

Table 3.

and machine guns, as well as for their greaseguns and hand grenades (lurking enemy in buildings); rifle squads and scout squads engage natural cover and suspected enemy positions with machine gun and rifle fire, and the mortar supports the action with 81mm fire on demand of the platoon leader and subordinate commanders.

After arrival on the ROCHESTER-BOSWELL-GALT line the platoons are suddenly engaged by the represented fire of the lead elements of a counterattacking enemy tank battalion. The company commander decides (with commendable wisdom) to withdraw, and orders the Red platoon, having the best position (at ROCHESTER), to cover by its fire the withdrawal of Green and Blue platoons. He orders the latter two back to BUCKNELL and GOLAR respectively.

Green and Blue platoons precede their withdrawal by rapid 76mm smoke and high explosive fires on the areas of enemy occupation. The artillery lends urgent support.

Green and Blue platoons being established in new positions, the company commander orders Red platoon back to ROLLINS. Blue platoon is

then withdrawn to BROWN, there to support the withdrawal of Red and Green platoons.

Green platoon falls back slowly on GREENVILLE, and Red platoon on BOSTON, each platoon moving by bounds and keeping areas of enemy occupation under fire. Blue platoon at BROWN covers them.

The Red platoon being established at BOSTON, Blue platoon is ordered to withdraw (delaying) to BAYLOR, moving by bounds. Green platoon is likewise ordered from GREENVILLE back to GEORGIA. All platoons being closed on BOSTON, BAYLOR and GEORGIA, the problem is terminated. A critique is held, new ammunition issued, and the drill run again, platoons swapping roles.

## Conclusion

The combat firing drills have proven to be exceptionally valuable training devices. They are not difficult to work up, but, of course, it is essential that they be tactically correct.

Naturally the terrain in one locality will always be different from that in another. But the foregoing description of the drills shows, I hope, that equivalent problems may be worked out in any suitable range area. While the infantry drill described is written for armored infantry, a similar drill—modified as respects weapons—would do as well for dismounted infantry.

Targets for tank and reconnaissance company drills are relatively simple: moving sleds drawn by cable, and issue flash simulators M110, detonated by means of buried electric circuits. The infantry drill uses only a few silhouette targets.

Despite—or perhaps because of—the fact that the drills constitute a pretty severe physical workout, they are very popular with the troops that run them. A good unit always likes to demonstrate its professional competence.

## Part V of this series entitled

## TRICKS OF THE TRADE

will appear in the  
July-August issue

of  
ARMOR



# The Outstanding Senior 1954

## ARMOR ROTC Cadets

**F**OR the third consecutive year the United States Armor Association presented awards to the outstanding graduates in the Armor Reserve Officer Training Corps at the fifteen institutions where Armor instruction is being given.

This year the awards were similar to those given in 1953. Each recipient was awarded a certificate signed by

America" by Brigadier General Paul M. Robinett were awarded. Several of these cadets have been tendered Regular Army Commissions upon graduation from their respective institutions.

It is our privilege to salute these gentlemen for achieving this outstanding recognition. Nor do we salute them alone. Much credit should

gap between the military and the school authorities.

With the continuing emphasis on Reserve activities, the value of proper training takes on increased importance. Where can it be more important than at the basic level of ROTC instruction? For it is here that the student receives his initial impressions about the service. It is here that he

### INSTITUTION

### RECIPIENT

Norwich University .....	George C. Ackley
University of Massachusetts .....	Malcolm R. Miner
Virginia Military Institute .....	Edward M. Newton, III
Alabama Polytechnic Institute .....	James Everett Martin
The University of Georgia .....	William Brice Nelson
Clemson Agricultural College .....	Ben K. Chreitzberg
Furman University .....	Charles Leslie West
Middle Tennessee State College .....	Thomas Whitfield Patton
The Ohio State University .....	George R. Jacoby
University of Illinois .....	Dale Bury
Michigan State College .....	Thomas J. Wyllie
New Mexico Military Institute .....	Leo Fulton Wollard, Jr.
University of Arizona .....	Richard E. Coutchie
Texas A&M College .....	Carl B. Sterzing
Oklahoma Military Academy .....	Lewis A. Rockwood

the President and the Secretary of the Association, for his outstanding achievement. In addition a year's gratis membership in the U. S. Armor Association, and a package of books consisting of "War As I Knew It" by General George S. Patton, Jr., "Panzer Leader" by Heinz Guderian, and "Preparation for Leadership in

be given to the Army representatives at these schools.

The Military Science & Tactics instructors assigned to these schools have indeed an important task to fulfill. In addition to being emissaries for the Army and its various branches, they do much to fulfill the needs of the service and bridge the

often decides to make the Army his life's career.

Letters of appreciation received from several of last year's recipients, in addition to favorable comment by many of the military instructors at these institutions, lead us to believe that these awards go far to assist in the enhancement of Armor.



GARDED



# ROKs

## Forge The Thunderbolt!

by

MAJOR GENERAL GORDON B. ROGERS

**T**HE necessity for stiffening the infantry-artillery teams of a fast-developing, but infant Republic of Korea Army became apparent early in the Korean conflict. To meet the needs of modern warfare, top-level planners devised a system of training in armor. The Ko-

rean Army Armored School (reported in the January-February, 1953 issue of *ARMOR*) was established with the mission of producing a hard-hitting, battle-efficient force that could stand firm on the defensive as well as lash out at the enemy with offensive action. To create combat tank units from a people with little or no mechanical background or history of armored warfare, was a challenge now met.

The Armored School first came into being April 15, 1951, as a section of The Infantry School, located at the Korean Army Training Center

(KATC), near Kwangju. On May 15, 1953, the group was reorganized into a separate service school.

The Korean Army Training Center, functioning under the supervision of KMAC, is home to The Infantry, Artillery, and Signal Schools, in addition to The Armored School, thus affording an excellent opportunity for instruction in tank, infantry, artillery teamwork, and the training of communications men. The mission of the school is to train armored personnel, both officers and enlisted men, in all phases of armored operation. In addition, the school trains track

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**MAJOR GENERAL GORDON B. ROGERS** is presently assigned as the Commanding General of the Third Armored Division, Fort Knox, Kentucky. During World War II he served in the Pacific, where he was awarded the DSC with Oak Leaf cluster for heroic actions at New Guinea. Prior to his present assignment he was the Chief of the Korean Military Advisory Group.



mechanics for ROK Ordnance units and the ROK Marine Corps.

The 14-week training period of the enlisted tanker at the school begins when he arrives from a Replacement Training Center, after his eight weeks of basic infantry training. Recruits come to the school in 225-man groups to form a student company. They are interviewed by the school's classification staff, and assigned to specialty courses according to aptitude tests.

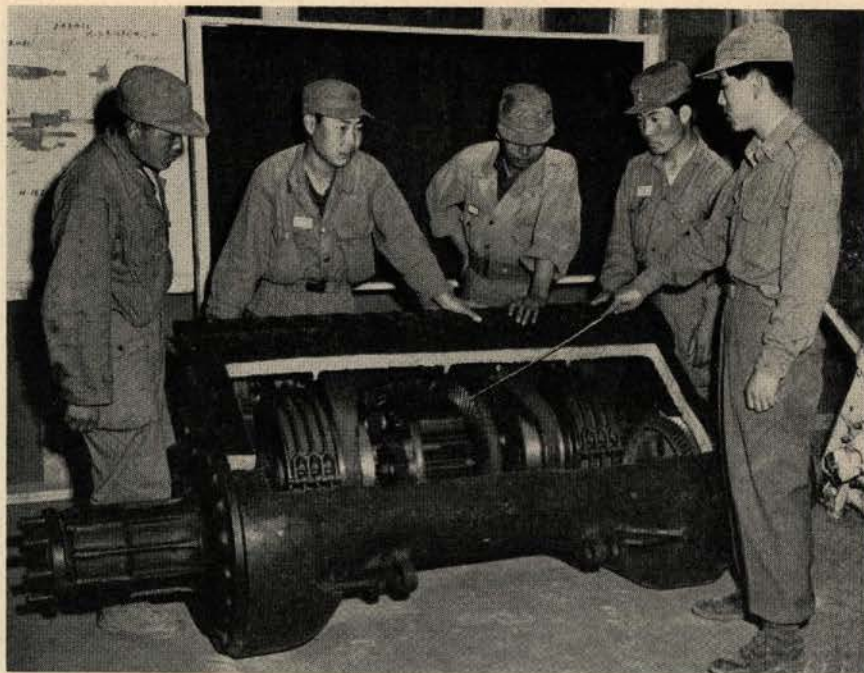
Out of the group, 15 men with the highest mechanical aptitudes are selected for a 14-week tank maintenance course. The next 30 best qualified men are placed in a 10-week commanders' course, which prepares them as leaders and familiarizes them with all operations of a tank.

The remaining men are formed into three groups, and start training as gunners, drivers, or radio operators. The first five weeks of instruction gives the student a basic job. The next five weeks are spent in another of the three courses, assuring that each crew member can perform at least two jobs in the tank. Upon completion of their 10-weeks training in two courses, they are joined by the tank commanders, forming tank crews.

Crew and unit training is stressed for the next four weeks. As the climax of the fourteenth week of armored training, each tank crew participates in a proficiency test, which was recently added to the last week of the unit-training cycle. An elaborate tank course, or range, presents a mock battle situation to test the crew in the fire and maneuver of a tank in combat. The basic consideration is the performance of the tank crew as a fighting team.

Prior to the test, each tank commander is briefed on the general situation, who in turn briefs his crew members and prepares them for the course. The tank commander moves out with an instructor riding on the rear deck as an observer. A control vehicle follows the tank, communicating with target operators via radio.

As the tank and crew progress through the course, the instructor scores gunnery speed, accuracy, selection of weapon and ammunition, conservation of ammunition, reaction to surprise targets, communications, and tank-infantry coordination. Prior preparation by the commander and



High mechanical aptitude is required to be selected for tank maintenance course.

crew, as well as after-action maintenance, are also scored by the instructor.

Tank mechanics join the crew at the end of their 14-week course. The heavy tank company is then activated, equipped, and assumes the role of the school demonstration company. The previous demonstration company is transferred to the front lines for operational assignments.

The Armored School does not conduct officer candidate courses. Rather, officers come from front-line units, usually as armored volunteers, and from The Infantry School OCS. Arriving in groups of 50, they are placed in a 14-week Armor Officer Basic Course. Upon graduation, they are given administrative and instructional duties at the school to further familiarize them with armored operations.



Weapons and training aids are the same. Only faces are different at the school.





Embryonic tank crews learning the "inter-com" procedure in this school mock-up.

When the student officer is considered eligible as a leader, he is placed in the framework of a new group of trainees. He handles the operation of the student company and acts as an informal instructor. Eventually, when the heavy tank company is activated, he becomes a company officer. With this policy of early command assignments, commissioned leaders are under the eyes of their senior officers

and KMAC advisors for more than two full training periods.

To assist the ROK armored program, select Korean Army officers have been sent to The Armored Center, Fort Knox, Ky., under the Mutual Defense Assistance Program. Spaces are allocated to students with a sufficient knowledge of English to attend officers' basic, maintenance, communications, and associate courses. Grad-



Driving instruction tests the driver's skill and the teamwork of the tank crew.

uates of Fort Knox are used primarily at The ROK Armored School as senior instructors, thus insuring high standards of instruction and sound doctrine.

In the early stages of the armored program, tank companies were sent to the front individually, and were assigned operational missions in the various corps. As their numbers increased, the school began training Headquarters and Service companies. The school developed a 14-week training program for these units, including all phases of general and special staff sections, ammunition handlers, truck drivers and mechanics. Completely trained and equipped Headquarters and Service companies now moved up to the front to combine with three tank companies, and form a battalion. The Battalion Commander, in addition to his other duties, is Corps Armored Officer.

The ROK tanker's role in Korea, by the nature of the operation, often has been a defensive action. ROK divisions, supported by their own armor, established direct fire positions on and behind the main battle lines. With the help of ROK engineers, tankers were dug in at hitherto inaccessible places. From these positions, they successfully engaged enemy bunkers, gun positions, troop concentrations, and pillboxes. The presence of ROK tankers boosted infantry morale. Often the mere presence of a tank inspired the infantry to hold a position.

Where terrain and tactics permitted, ROK tankers eagerly accepted the opportunity for offensive action. Exemplary of this fact was the raid on "Big Nori" by the 11th Infantry Regiment, 1st ROK Division, in January, 1953. A composite force of three U.S. tank platoons and one ROK tank platoon was placed in support of the infantry, to be used as the maneuvering force. The remaining three platoons of the ROK tank company were used as the base of fire, and also to replace the tanks of the maneuvering force that had expended their ammunition. Although staged in the bitter January cold, besides being the initial appearance of ROK tanks in support of their own troops in the division, Colonel Choi Ju Jong, commander of the 11th Regiment, directed the strike with overwhelming results.



A part of the same terrain complex, "Big Nori" was communist-held, and overlooked and dominated "Little Nori," occupied by the ROKs. To eliminate incessant Chinese raids, the mission of the U.S.-ROK team was to destroy positions and manpower, and take prisoners if possible. A tank-infantry double-envelopment was decided upon.

As air, artillery, and tank fire neutralized enemy positions around "Big Nori," infantrymen pushed off as the right element of the enveloping force. One ROK and three U.S. tank platoons became the left prong of the pincer. Remaining ROK platoons utilized high terrain and a nearby frozen river bed, in a direct-fire position on "Big Nori." Completing the pincer, the infantry and the maneuvering tanks closed in, cutting off possible reinforcements from nearby enemy reserve areas.

The infantry swept up to "Big Nori" positions, a scant 50 yards behind the close-in bursts from the tanks. The ROK support platoons, forming a base of fire, became maneuvering elements as they replaced the tanks utilized in the pincer when the latter expended their ammunition. The enemy was blasted and burned out of his deep emplacements with satchel charges and flame throwers. Stubborn resisters were engaged in hand-to-hand combat by the infantry.

Two hours after the initial push-off, the ROKs planted their Korean flag on the crest of "Big Nori." As the summit was of no tactical value to the division, the ROK Infantry troops returned to their own lines, covered by tank fire, taking a prisoner with them, and leaving 80 per cent of the enemy positions destroyed.

As a final demonstration of unexcelled teamwork, one tank platoon covered the armored withdrawal by fire and maneuver. Then the light tank section of that platoon covered the heavy, with the last tank to return to friendly lines that of the platoon leader.

Lieutenant Colonel John A. Rankin, the 72d U.S. Tank Battalion commander, planned and supervised the operation. Laudatory, he stated: "The coordination in the use of infantry, tanks, and communications was the best I have seen in two wars. The ROK tankers were so well trained that they followed instructions to the



Superior gunnery was proven at "Big Nori" as were driving and communications.

letter. They were fresh to the line and in their first action. Their training must have been good, for they demonstrated good driving, superior gunnery, and outstanding use of communications. From my position in the OP, I could not tell which were U.S. and which were ROK tanks."

The more than 3,000 graduates of The Armored School, plus outstanding offensive and defensive actions,

are evidence of a job well done. Superior gunnery, excellent maintenance records, and the teaming up of armor and infantry have reflected the school's sound training and tactical doctrines.

Despite its short existence as a separate service school the Armored School has proven itself a vital factor in the development of a balanced Republic of Korea Army fighting team.



The final test before going to battle is to test the proficiency of the tank crew.



With the publication of the present issue of *ARMOR*, it is noted that a year has elapsed since the incumbent has been in the editorial chair. During this time much water has flowed under the bridge. We have witnessed the cessation of hostilities in Korea. We have heard a great deal about an entirely new concept of our Armed Forces with the emphasis shifted to new weapons, and have seen the Red pressure concentrated on Indo-China, and the heroic stand made by our outnumbered French Allies. Despite these changes and economic cutbacks within the services, we have seen the Army regroup its combat forces with an increase in Armor. A reexamination of present Armor doctrine is being made at Fort Hood during operation "Spearhead" as reported in *News Notes* of this current issue. We have seen the completion of our post-World War II "family" of tanks. Yes, we have come a long way but we still have a long way to go. Let's take a look where we are going.

One of the most significant looks into the future is made in this issue by Major General James M. Gavin, who is presently G3 of the Department of the Army. It is believed by

many Armor personnel that this article should be read, re-read, studied and discussed by every Army officer regardless of branch. It contains much food for thought concerning ground force employment.

It appears that this article goes a long way toward advancing the theory of welding airborne, armor, atomic, and tactical air units into a combat team. This thought was first speculated on editorially in *ARMOR*, September-October 1953.

With an Airborne Corps operational at Fort Bragg and a Corps located at Fort Hood, which includes our two Stateside Armored Divisions, it appears that we have the nucleus for developing Airborne-Armor operations of a scope greater than ever conceived to date in this country. The methods of employment, how to increase the mobility of this type unit, proper logistical support, and how to maintain momentum once gained, could be the mission of these Corps. Better still, they could work jointly under one Army command. The past experience of the officers assigned to these Corps should provide sufficient background to meet and solve these



# Of Hoplites, Pelasts and a Concept

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problems NOW before we must learn the hard way—remember II Corps in Tunisia in the Winter of 1942-1943.

We lacked mobile organizations of sufficient size in Korea to assist General Walker in his mission during the dark days of 1950; hence we were forced to fight an enemy on their terms, with their methods, and with equipment that was road bound, to say the least. To make matters worse, the road net was one to compare with the most backward areas in the world.

We should take action now to make our forces more mobile. To get an edge on your enemy in mobility is a constant challenge facing the military man. To keep this edge is an Army-wide problem. Maintaining momentum once gained keeps the enemy off balance and throws him on the defensive. Wars aren't won on the defensive. The force that knows the enemy's disposition and has the mobility to attack, disperse quickly, and regroup again to strike the enemy's rearward salient weak points, will make the penetration and become the decisive factor on the battlefield.

From time immemorial, battles have been won by decisive mobile action. Many times the conquering heroes have been the "Davids" in that they were smaller in numbers, lacked equipment, but were superior in knowledge. They obtained the momentum, maintained it, and shifted it as the situation dictated; hence they won.

Regardless of interpretation, this significant article by the Army G3 is a contribution which represents the forward thinking of one of our top officers. We cannot and must not overlook it. It deserves careful consideration, and ARMOR, which continually believes in looking forward, is happy to present it. At the present time mobility on the ground is dependent upon cross-country vehicles and upon the engineer and logistical support of them. Airborne personnel are dependent upon air to transport them to their destination. A prompt link-up of these two vital forces is a must for a quick decision.

A link-up effected NOW for training, planning, and operations will serve the Army well in an emergency.



**T**HE Department of the Army announced recently the addition of the Corporal Guided Missile to the fast-growing list of new weapons to be used in support of ground combat operations. Equipped with either an atomic or conventional type warhead, the Corporal is a surface-to-surface guided missile capable of engaging tactical targets far beyond the ranges of artillery or the new 280mm gun and "Honest John" rocket. The weapon gives the field commander far greater firepower on the battlefield and enables him to strike selected targets deep in the enemy rear areas.

The Corporal follows a ballistic trajectory in its flight to the target. Weather and visibility conditions place no restriction on the use of the weapon. Motive power is supplied by a powerful rocket motor. The missile travels through space at several times the speed of sound.

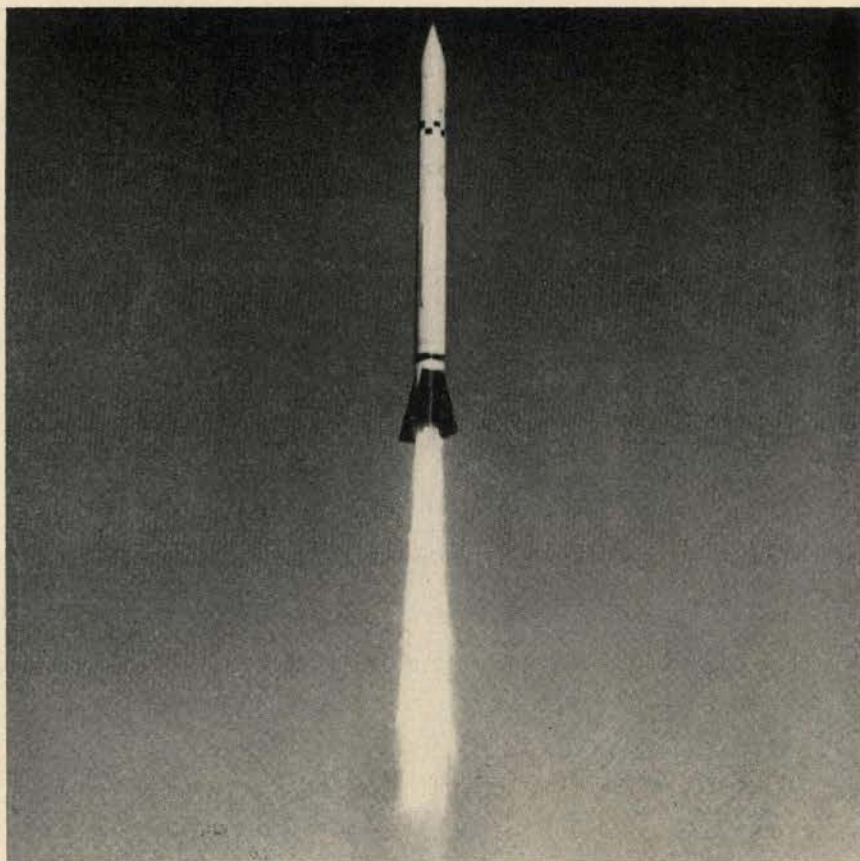
Essential components of the weapons system include the missile, a mobile launcher and guidance equipment. The launcher is a comparatively simple device consisting of a light metal take-off pedestal. A self-propelled, hydraulically operated erector places the missile in firing position on the take-off pedestal.

As early as 1944, the California Institute of Technology, under an Army Ordnance contract, began experiments in the application of rocket propulsion to artillery range missile. These predecessors of the Corporal were named the Private, the Private First Class, and the WAC Corporal. Much of the field test work was conducted at White Sands.

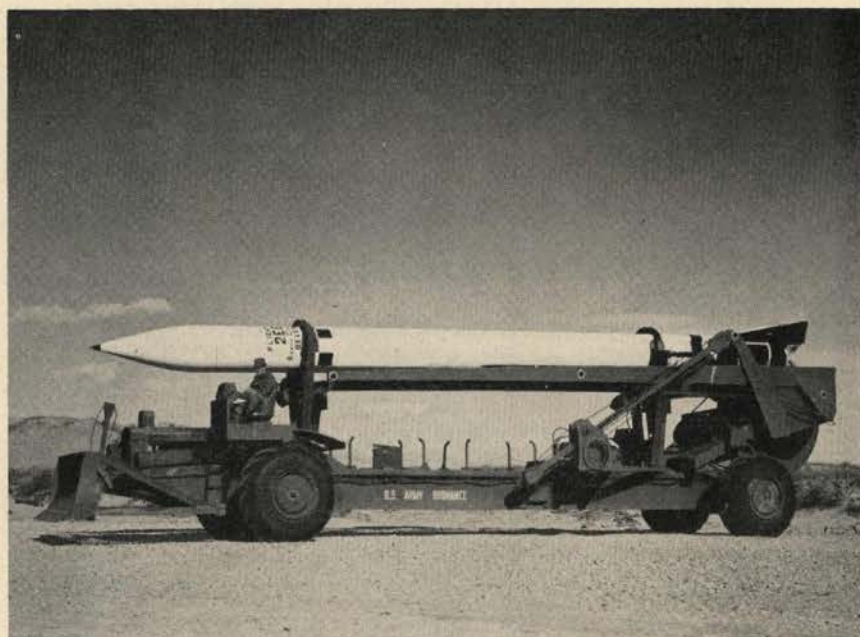
The early success of the experiments and the great potentialities of rocket propulsion led to the establishment of the Jet Propulsion Laboratory, an Army Ordnance owned installation operated under contract by the California Institute of Technology. Recognizing the progress made in the fields of rocket propulsion, aerodynamics and guidance, the Army requested the California Institute of Technology and the Jet Propulsion Laboratory to undertake a full-scale guided missile development project. The result of this program is the present model of the Corporal.

The Corporal is produced by the Firestone Co. and Gilfillan Brothers, Inc. Delivery is being made to troops.

## THE CORPORAL



Climatic conditions do not affect the use of this latest guided missile.



This surface-to-surface missile, the Corporal, on its tactical transporter-erector.



**T**HE "Honest John," project name for a long-range artillery rocket, has been added to the arsenal of Army weapons. Capable of carrying both atomic and high explosive warheads, the weapon will be used tactically to provide close fire support in ground operations.

Approaching the accuracy of standard artillery weapons, the "Honest John" is a free flight rocket as distinguished from guided missiles. Having no electronic controls, the "Honest John" rocket is simple in design and simple to operate. Normal crew training and standard fire control techniques are employed. Range is equivalent to that of medium-to-long range artillery. The weapon has considerably more battlefield mobility than conventional artillery and one high explosive round can deliver on a target the demolition effect of hundreds of artillery shells.

The "Honest John" consists of a rocket weighing several tons and a highly mobile, self-propelled launcher. The rocket itself comprises a forward compartment which houses the warhead; a motor at the center, in which the rocket propellant is fitted; and a fin assembly at the rear.

Major parts of the "Honest John" rocket—such as the head compartment, pedestal and motor, and fin assemblies, are assembled at the factory or arsenal. Final assembly of the explosive warhead and fins to the rocket occurs at the point close to the firing site. Once assembled, the rocket is moved rapidly forward on a self-propelled launcher. On site, the rocket is aimed much the same as a gun is laid on its target, and fired.

The development history of "Honest John" is brief considering its importance as a primary weapon. Studies for a large caliber artillery rocket were begun by Army Ordnance in May 1950. Shortly thereafter, Douglas Aircraft Corporation submitted proposals for a rocket based on Ordnance specifications. Initial firing tests completed at White Sands in August 1951 justified production of additional models. By January 1953, further successful tests with improved rockets manufactured by Douglas and fired from self-propelled launchers, developed by Army Ordnance, resulted in contracts for large scale production of the present type rocket. Delivery is being made to troop units.

## HONEST JOHN



The latest in long-range artillery rockets taking off from test type launcher.



This free flight artillery rocket shown on its tactical transporter-launcher.



# SPECIALIZATION

## FOR COMBAT ARMS OFFICERS

**I**N general, the purpose of the various programs of specialization is to train and utilize, to the fullest advantage to the Army, officers with special knowledge in certain fields of business, physical and social science, public administration and public relations. No officer, regardless of his possession of special knowledge, is considered a specialist unless he volunteers to become one.

There are seven presently authorized broad fields of specialization. These are: (1) Atomic Energy with assignment to boards, agencies and staff sections engaged in research in the military use of atomic energy; (2) Intelligence with assignments in high level staffs, CIA, CIC, attaché duty and other similar activities; (3) Army Security with worldwide assignments to that agency; (4) Foreign Area Specialization with worldwide assignment to D/A and high-level staffs needing officers with knowledge of the total culture and language of a people; (5) Budget and Comptroller with utilization on any level where a comptroller section is authorized; (6) Public Information leading to assignment on any level where a Public Information section is authorized; (7) Legislative Liaison leading to assignment to agencies engaged in the drafting of laws applicable to the Army and the coordination of such laws with congressional bodies.

Any Regular Army or Reserve Component officer on active duty who has completed three years active duty service and is in the grade of first lieutenant or higher is eligible for specialization (for intelligence specialization two years service as a first lieutenant or higher is required). To be selected, the applicant must also have demonstrated common sense, good judgment, initiative, adaptability to all phases of military life and an aptness in the specialist field of his choice. The combat arms branches consider the completion of five years service and the branch advanced course as desirable but not mandatory

prerequisites for Regular Army officers.

It should be made clear that a specialist has less opportunity for assignment to branch material duties than the non-specialist. Before applying for specialist training and assignments an officer should be sure that he desires to pursue a career which will be characterized by frequent or repetitive assignments in one field.

Methods of applying for Atomic Energy, Intelligence, and Foreign Area Specialization are outlined in SR 605-150-20, SR 605-150-30 and SR 350-380-1, respectively. Specialization in ASA is governed by letter AGAO-S 210.31 (2 Apr 52)-M, Subject: "Career Specialization in Army Security Agency for Regular Army Officers," dated 11 April 1952. No specific regulations have been published regarding the fields of Budget and Comptroller, Public Information, and Legislative and Liaison. Officers interested in repetitive assignments within these fields should apply through channels to their career branch. Applicants should state fully their qualifications, training and experience in the particular field.

An applicant who has been approved for specialization will be notified and, at first opportunity, will be assigned duties appropriate to his field. He may expect repetitive assignments in that field, his specialist status receiving first consideration on each reassignment effected by the Department of the Army.

The Army's peacetime mission is preparation for war. Obviously, it is not possible to anticipate future events to the extent of earmarking large groups of individuals for specific type duties in time of war. An important aim of individual career development must be the creation of a reasonable degree of versatility. A specialist normally should not expect to seal himself off by assignments only within his field. Thus, it is anticipated that specialists will have occasional assignments outside their field, particular-

ly to branch material duties. Such assignments are desirable in order to permit specialists to compete with other officers for higher schooling and assignment to highly responsible command and staff duty.

In the intelligence specialization program, there are certain exceptions to the general rules. First, Reserve Component officers are transferred to Military Intelligence Reserve on approval of their applications. The combat arms branch to which they were assigned then becomes a detail branch. It is unlikely that these officers will receive further branch material assignments. Secondly, Regular Army officers serving in the ASA specialization field cannot be released from that duty except with the express approval of OACofS, G-2, Department of the Army.

In summary, the Army needs specialists but it is not the intent of Career Management to allow a specialist to lose contact with the normal duties of the officer corps. The specialist must cooperate and have his own interests in mind in this matter of general career development. Specialization should not be considered as an easy path to early recognition. To warrant such recognition the specialist must excel in his field. For those officers who desire to pursue a career in one field, specialization is encouraged, but before becoming specialists such officers should closely scrutinize their background to determine if they have previously established qualification in their own branch. The specialist who fails to excel in his field and has not established qualification in his branch can expect no special treatment in the matter of schooling and promotion simply because he is a specialist.

If the specialist excels in his field and maintains his branch qualification, specialization can prove both rewarding and satisfying.

Answers to specific questions on this subject may be obtained by writing to your own career branch.



# THE CAMPBELL EXERCISER

by LIEUTENANT COLONEL A. H. HISLOP



**N**CESSITY, as well as an Ordnance directive, requires that the recoil mechanism of the tank gun be exercised weekly in order to prevent leakage of recoil oil around the seal. The best method of keeping this seal lubricated, thus preventing leakage of recoil oil, is to fire the gun at suitable intervals. This method, however, is not generally practicable for use in Armored Cavalry units stationed along the inter-zonal border in West Germany since ranges are sometimes many miles away and the normal mission of these units precludes frequent movement from the assigned sector.

As a result of these circumstances the Tank Company of the 3d Battalion, 14th Armored Cavalry Regiment, set out to devise an acceptable method of exercising the recoil mechanisms of the 90mm tank guns of the assigned M47 tanks. During the course of the search for a method suitable for use in the motor parks, various means of causing the piece to recoil were tried. Among these were the use of hydraulic jacks and the driving of the gun against a solid object. Both these approaches to the problem were discarded as too time-consuming and cumbersome. In addition a method was required that would rule out the possibility of over-recoil with resultant damage to the mechanism.

At this point in the proceedings 1st Lt. John A. Campbell, the Motor Officer, conceived the idea for the device described herein. The device was designed and built by Lt. Campbell with the help of M/Sgt. Paul H. Pelto, the Company Motor Sergeant, and is becoming known in the Regiment and in 7th Army Ordnance units as the Campbell Exerciser.

## Description

The Campbell Exerciser is constructed of salvage pipe and strap iron welded to form a frame. A 12-inch square of steel plate is welded to the top of the large member of the frame to receive the muzzle of the gun. This metal plate is faced with a wooden block to prevent damage to the muzzle. The upper horizontal members of the frame are extended toward the position of the tank to be exercised. The ends of these horizontal members are fitted with strap iron V's designed to fit the front slope plate of the tank. This feature prevents over-recoil and consequent damage to the mechanism by stopping the forward motion of the tank at the proper time.

When the exerciser has been suitably anchored it is ready for operation.

## Method of Operation

The Campbell Exerciser is used by driving the tank into position and positioning the gun muzzle against the wooden faced plate. Then the tank is driven forward until the slope plate comes into firm contact with the safety V's on the horizontal members of the frame. This action moves the gun into the proper recoil position and moistens the oil seal in the recoil mechanism. The tank is then moved to the rear and the operation repeated. In cases where tanks are kept in the motor park for extended periods, this method has the additional advantage of making use of the periodic engine turn-over time to exercise the recoil mechanism as well, thus killing two birds with one stone.

The following steps are recom-

mended for use in exercising a recoil mechanism with the Campbell Exerciser:

1. *Unlock the gun tube and traverse the gun to the forward position.*
2. *Check the recoil oil.*
3. *Move the gun to the horizontal (approximately level) position.*
4. *Place the muzzle against the wooden faced plate and exercise the mechanism six (6) times as described.*
5. *Check recoil mechanism for leaks.*
6. *Check the recoil oil.*
7. *Traverse to travel position and lock.*

## Future Development

This device was designed and built for use with the 90mm gun tank M47.

The exerciser is now being modified in order that it may also be used with the light tanks of the Reconnaissance Battalion. This modification consists of the provision of a sliding adjustment on the horizontal members of the frame. The addition of this adjustable feature will provide for virtually any length of gun tube, and for variations in the length of recoil required to properly exercise a gun.

Upon completion of this modification it will be possible to exercise the recoil mechanism of all the tanks of the 3d Battalion in a minimum of maintenance time, and with no danger of damage due to excessive force being used on the gun, tank, or recoil mechanism.



## 65 Years Ago

When it is considered that from 1866 to 1888, there have been in Europe but a few instances of deviation from the manner of using cavalry prescribed by Napoleon, it is not surprising that a modern European writer, not a cavalryman, should incline to a conservative use of the horse-soldier, employing him as a sort of body-guard to his comrade of the infantry, or as a butler to set the battle-banquet, prevent intrusion, stand behind the host during the repast, and remove the dishes at its close. Surely auxiliary service must be performed, but it will not, in future, constitute the whole duty of the cavalry, else the lessons taught by Sheridan, Stuart, Wilson and Forrest, in this country, have been learned in vain.

While these lessons emphasize the value of mounted troops as a screen, to obtain intelligence and to perform the functions of "Divisional" cavalry, before, during, and after a battle, yet they also demonstrate their value as an independent force, operating at a distance, cutting an enemy's communications, anticipating his occupation of strategic points, and engaging his infantry, with improved firearms, on more advantageous terms than ever before.

*Cavalry War Lessons*

COL. THEO. F. RODENBOUGH

## 50 Years Ago

Everything new in the world, of importance, is bound to come from this country, for the Americans are doing something all the time. They are forced to, to meet the conditions constantly arising. This may apply to Russia some day, but the rest of Europe is old and finished—little new. People go to new countries to find new adventures, and adventures make men warlike amongst other things, develops their faculties, mental and physical, and for that reason the American is by nature the modern soldier. The soldier of a modern country is up-to-date in his ideas. Perhaps in the future Russia will play the same part in Europe when she has more school houses. The modern soldier of the best type must be taken from a school house, preliminary to his military training. For the reasons stated, it is not seen why Americans should go to Europe for military ideas. If they will study the operations of their own armies under their own famous leaders for the past hundred years, they will learn all that can be learned theoretically of the science of war, as it applies or will apply to them for many years to come.

*The American Cavalryman*

MAJOR C. G. AYRES  
Eighth Cavalry

## 25 Years Ago

Constant study by the General Staff and practical experimentation at maneuvers carefully planned to give effect to these studies have fully demonstrated the desirability of a new major unit endowed with capacity for maneuver and speed of movement far superior to that of the usual divisions and corps. This unit in most cases will be pushed forward on the front of the field army. It should be able to secure to that army full freedom of movement until such time as contact is gained with the enemy main forces. And this unit must have the strength and fire power to remove any obstacles to its advance, such as enemy reconnaissance troops or hostile centers of resistance.

This corps cannot, therefore, be composed entirely of cavalry, like the cavalry corps and divisions of pre-war days. It must have within its own organization all other weapons which complement the action of the cavalry and allow it to be employed on its characteristic missions. Nor, on the other hand, can it be composed entirely of mechanized forces as many misguided enthusiasts have recently advocated. Instead, it must be a balanced combination of the two—the natural result of the war-time union of the bersaglieri cyclists and the old cavalry corps, with the additional aid of the mechanical arms.

*Il Corps Celere*

LT. COL. AFREDO BACCARI  
General Staff

## 10 Years Ago

The mobilization, concentration and deployment of modern armies requires time. Naturally, it follows that for a country with great expanses of territory, such as the Soviet Union, considerably more time is required for this purpose. That is why, at the outset of the war the first strategic echelons of the armed forces of the Soviet Union had to wage a bitter struggle against an enemy possessing overwhelming numerical superiority and consequently had to fall back deep into the interior of the country.

In the course of its withdrawal the Red Army inflicted heavy losses on the enemy in gruelling defensive operations and wore down and exhausted his forces. It is now universally recognized that no other army and no other country could have withstood the blows that the Red Army and the Soviet Union parried during the early months of the war. The Red Army fought back, mobilized its forces and by the winter of 1941-42, having mastered the art of waging modern warfare, wrested the initiative from the enemy.

*Military Art of the Red Army*

LIEUTENANT GENERAL E. SHILOVSKY  
Red Army



# How would you do it.?

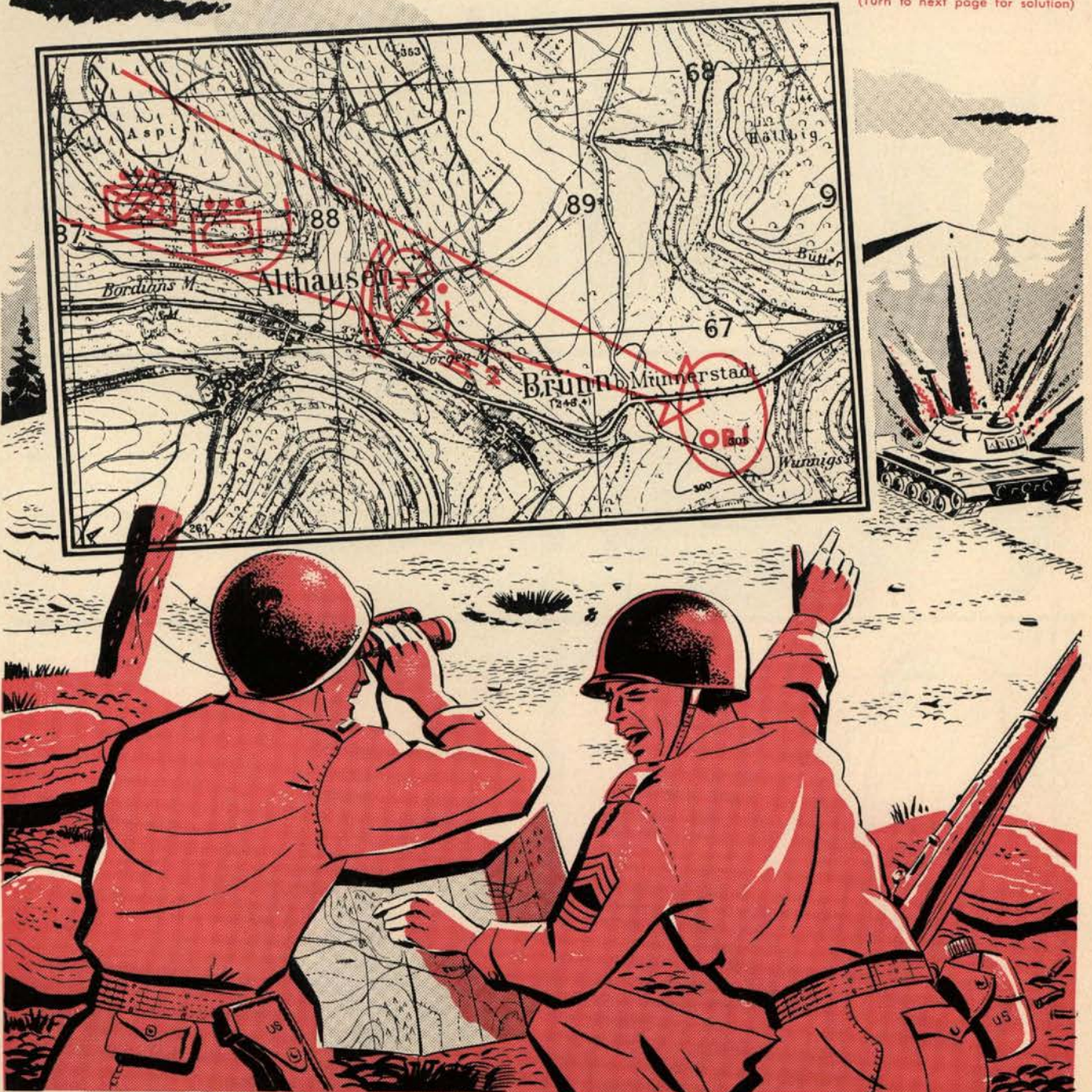
Company A, 101st Armored Infantry Battalion, reinforced, has been advancing to the southeast with the mission of seizing BRUNN and cutting the main roads to the east. The 1st Platoon, Company A, 101st Armored Infantry Battalion, reinforced with a platoon of tanks, has just succeeded in driving the enemy from the high ground at 874679 and is continuing its advance toward its objective east of BRUNN.

You are the platoon leader of the 1st Platoon, reinforced. In continuing your advance you have your attached tank platoon leading, followed by your armored infantry rifle platoon in its armored infantry vehicles. As the tank platoon reaches the edge

of the woods at 87906735 two enemy tanks appear from the woods at 886670 and begin firing. This enemy fire knocks out the tank platoon leader's tank, killing the tank platoon leader. At the same time, two antitank guns supported by approximately a squad of infantry open fire from a position generally along the line 886670-885673. The area along the line 880680-885673 is densely wooded. You report the situation to the company commander, who instructs you to eliminate the resistance and continue on toward your assigned objective. The other armored infantry rifle platoons of Company A are busily engaging the enemy elsewhere.

How would you eliminate or overcome this enemy resistance?

(Turn to next page for solution)



AN ARMORED SCHOOL PRESENTATION • AUTHOR: MAJ M. KRIEGER • ILL. BY PFC MANDARINO AND PFC ZOELICK

ARMOR—May-June, 1954

53



# "How would you do it.?" solution



**A**

You would order the tank platoon sergeant to get his tanks into defiladed firing positions and fire on the enemy force, primarily on the two enemy tanks.



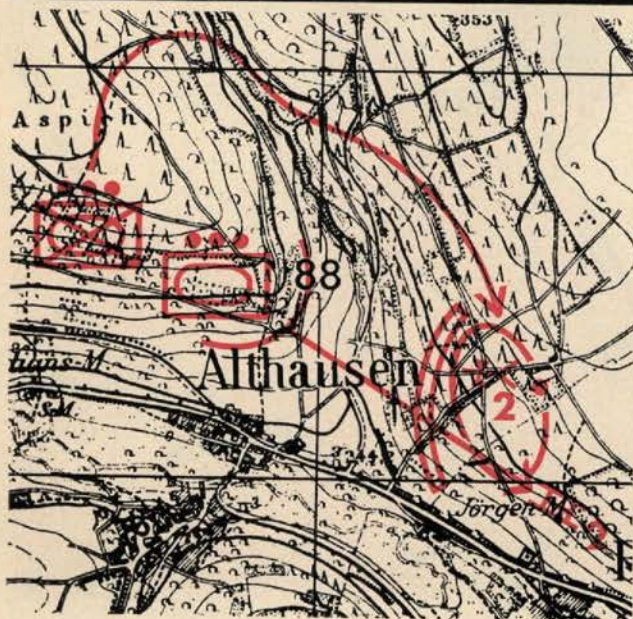
**B**

Realizing that the enemy resistance and terrain cannot be overcome by the tanks alone without sustaining heavy losses, you would dismount your armored infantry and maneuver the platoon against the enemy infantry and antitank guns while your tanks support your advance by fire. You would take with you the two 3.5-inch rocket launchers organic to the armored infantry rifle platoon. These weapons are effective antitank weapons and can also be used against enemy antitank crews and other crew-served weapons emplacements. You would plan to use the woods to conceal the movement of your platoon, striking the enemy on his right flank.



**C**

You would request, from your company commander, mortar and artillery support to fire on the enemy position in general and on targets of opportunity on call as they appear.



**D**

As the enemy is brought under the fire of your armored infantry rifle platoon, or as you close in on his flank for the assault, you would order your tank platoon to move forward rapidly to join you in the assault. The method of attack you have decided upon is "tanks and armored infantry attack on two converging axes." Your plan of attack will achieve surprise and will force the enemy to fight in two directions. It is desirable for tanks to arrive on the objective first so that they may utilize their full firepower and shock action. Your armored infantry should come in on the objective right on the heels of the tanks, mopping up and consolidating the objective. Following the elimination of this enemy resistance, you would immediately continue the attack toward your assigned objective.



## NEWS NOTES

### M59's Being Troop Tested

The Army's new armored personnel carrier is being troop tested during Exercise Spearhead by the 701st Armored Infantry Battalion of the 1st Armored Division.

A troop test is one of the three rigorous examinations all new Army equipment must pass before being accepted throughout the service. The test is conducted under simulated combat conditions by a unit of the type for which the equipment is designed.

The vehicle to be tested by the 701st is similar to an older model personnel carrier. However, there are many advantages which the new APC enjoys over its parent vehicle.

First, the engine of the new personnel carrier, M59, is many times quieter. This, of course, means that a force using the new vehicle can sneak up on an enemy and surprise him more easily.

Second, the silhouette of the new carrier is lower and presents a smaller target for enemy fire.

Third, the M59 armored personnel carrier is easier to service and keep rolling than the old M75 model vehicle. Many of its parts are interchangeable with parts of other military vehicles. Thus, a personnel carrier inoperative because of a broken part will be repaired and returned to action more quickly.

Fourth, whereas the old carrier was strictly a land vehicle, the new one can be used to cross relatively calm streams. It is amphibious. This additional feature requires no extra equipment.

The amphibious quality of the new APC revolutionizes warfare at streams. Instead of crossing the water in unprotected boats or waiting until a bridge is built—both at possible high cost—the infantry can now rocket across streams in personnel carriers under protective fire of friendly tanks and artillery.

In addition to these advantages, which make the new vehicle better than the old, the M59 costs about half what the M75 costs. The armored personnel carrier, as its name implies, is armored and carries a squad of infantrymen.

The unit to test the M59 is one of the

1st Armored Division's four armored infantry battalions. Lieutenant Colonel Howard P. Schaudt, battalion commander, marked his pleasure at commanding the organization to test the vehicle.

The colonel noted that the potential of the infantry will be increased with the use of the new armored personnel carrier, but cautioned "it's a little early to forecast or make any tactical evaluations" of the vehicle.

The M59 study is one of 24 tests to be conducted by the 1st Armored Division units during Exercise Spearhead. Object of the tests is to determine the adequacy of an armored division as now organized by the Army.

*The M59 was featured in the March-April issue of ARMOR. In addition to carrying this news note on this new Armored Personnel Carrier we have called on the Battalion Commander of the 701st Armored Infantry Battalion to prepare the Sum & Substance feature for the July-August issue in order to give us first hand information of the results of the tests.—Ed.*

### Spearhead Testing Armored Division

What type of armored division do we need?

During the first three weeks in May the organization of an armored division is being field tested at Fort Hood, Texas.

In the M48 tank and the new M59 armored personnel carrier the Army has the finest armored vehicles available. The basic questions to be answered by Spearhead, however, are not what kind of vehicles, but how many. Do we have enough tanks in the division? Or not enough? Are there enough infantry? Can an armored engineer battalion operate with fewer trucks? These are some of the hundreds of questions that must be answered.

Supplying these answers is the 1st Armored Division. The first armored division in our Army, "Old Ironsides," was formed from the old Seventh Mechanized Brigade in 1940. Reorganized during the war, the 1st Armored

changed to the present system of combat commands when the earlier regimental organization was abolished. Now, once again, the 1st will serve as a test unit.

The current division organization is based on World War II combat experience. In general, postwar reorganization added more tanks to infantry divisions and more infantry to armored divisions. All divisions gained a light antiaircraft battalion and two additional guns in each artillery battery. In the armored division all battalions are separate battalions, with combat commands to control them in battle. With the extensive radio nets in the armored division and the mobility of all combat vehicles, battalions can be shifted from combat command to combat command as the battle situation changes.

Armor experts are convinced this system is still sound, but they want to re-examine the details of organization in the light of current battlefield conditions. They want to be certain the full potential of modern armored divisions can be achieved with the present organization.

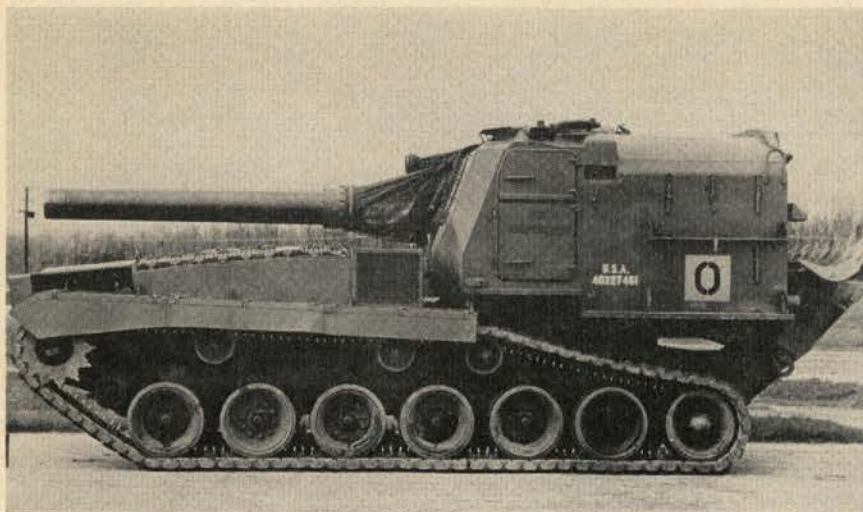
The current organization will be tested under all conditions of modern combat, from atomic attack to the raids of small guerrilla bands. The ability of the division to fight for extended periods with only air-dropped supplies will be a special part of the exercise.

At the end of each phase of the test, unit commanders will answer a set of carefully prepared questions. When the answers are in and evaluated, the Army expects to have a better idea about the armored division of tomorrow.

### Washington Chapter Hears Army G4

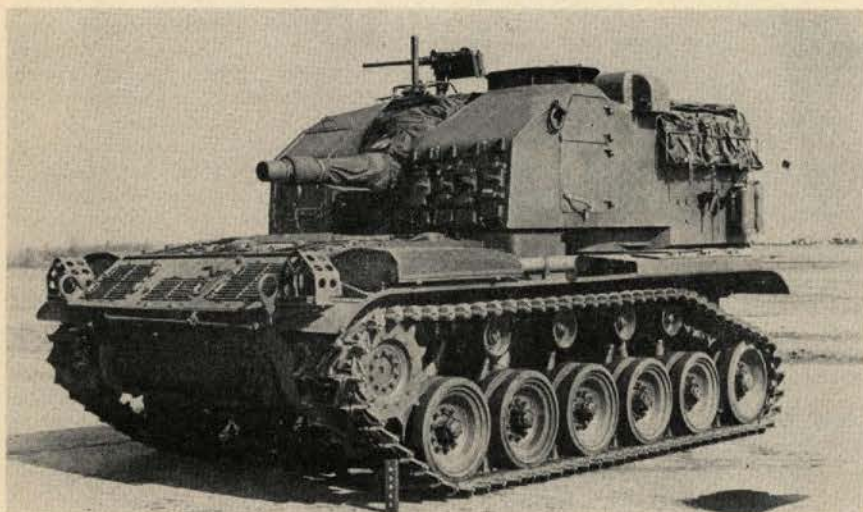
Lieutenant General Williston B. Palmer, Assistant Chief of Staff, G4, Department of the Army, was the principal speaker at the May meeting of the Armor officers in the Washington area. Approximately 120 officers enjoyed the talk by our Army G4, who is also a member of Council of the U.S. Armor Association. In addition to the principal speaker, a film was shown. Plans for the





The T108 self-propelled eight-inch howitzer.

U.S. Army



The T98E1 self-propelled 105mm howitzer.

U.S. Army



The T97 self-propelled 155mm gun.

U.S. Army

next meeting will be reported in this column as soon as they are made firm.

## Bonn Defense Chief Urges Atom Guns for German Army

West Germany's defense chief urged recently that the future West German army be trained to handle atomic weapons, including the American Army's new 280-millimeter cannon now stationed in Europe.

Theodor Blank, 49-year-old World War II corporal assigned by Chancellor Konrad Adenauer to prepare for West German rearmament, said in an exclusive interview with the United Press:

"We hope that when the West European army comes into being European soldiers of German origin will be trained in the use of atomic weapons. We feel that the value of these weapons would be greatly reduced if the soldiers of the country in which they are stationed were not able to use them."

The force West Germany is scheduled to contribute to western defense will consist of 500,000 men—400,000 ground troops, an 80,000-man tactical air force and a coastal navy of 20,000 men.

The ground force, of 12 divisions, will be made up of four armored divisions, two light armored divisions and six infantry divisions partly equipped with tanks. Informed sources have estimated the total number of tanks at about 1500.

"The air force will be made up of 20 wings," Blank said. It is expected to total between 1500 and 1800 planes.

"The Navy," Blank said, "will be equipped with ships of up to 1500 tons—mainly submarine-chasers, minesweepers, PT-boats and convoy escorts." Its job will be to guard the Baltic coast and supply lines through the big North Sea ports.

## Former Cavalry Journal Editor Succumbs

Lieutenant General Robert C. Richardson, Jr. died in Rome, Italy in March of this year. During the period of 1920-21 General Richardson (then Major) was assigned as the Editor of the *Cavalry Journal*. He graduated from the Military Academy in 1904 and returned there to serve as Commandant of Cadets. General Richardson served in three wars. As a Lieutenant in the Philippines he was wounded in action. During World War II he served under General MacArthur and was on the USS *Missouri* during the signing of the Japanese surrender.

## World Wars Tank Corps Association to Hold Annual Meeting

The World Wars Tank Corps Association will hold its annual meeting during the period 27-28 August. These two dates tie in with the American

ARMOR—May-June, 1954



Legion Convention which convenes in Washington immediately after this affair. The Tank Corps will convene at Fort George G. Meade, Maryland on the 27th of August and will hold its annual meeting at Gettysburg, Pennsylvania on the following day.

For additional information contact Mr. Tom White, National Adjutant, World Wars Tank Corps Association, 708 N. Wallace, Street, Indianapolis, Indiana.

#### **Tropic Lightning Division to Meet in Chicago**

The 25th Infantry Division (Tropic Lightning) Association is planning to hold its Fifth Annual Reunion in Chicago during the period, July 2-4.

For further details contact your association headquarters, Post Office Box 101, Arlington, Virginia.

#### **First Cavalry Division to Hold Seventh Annual Meeting**

The First Cavalry Division Association will hold its Seventh Annual Meeting in Washington, D. C. during the period 3-6 September.

For further information contact the First Cavalry Division Reunion Committee, The Willard Hotel, 14th & Pennsylvania Avenue, N.W., Washington, D. C.

#### **Sixteenth Armored Division Association to Hold Its Third Annual Reunion**

The Sixteenth Armored Division Association will hold its third annual reunion in Louisville, Kentucky during the period 13-15 August.

For further information contact your Association Headquarters at this address: Col. C. H. Noble, 828 Ivy Lane, San Antonio 9, Texas.



**Col. Gen. Heinz Guderian**

#### **Famed WWII Panzer Leader Dies**

Col. Gen. Heinz Guderian, creator of the Nazi Wehrmacht's formidable Panzer armies, which he led in the Polish, French and Russian campaigns died May 14 at the age of 65 in Fuesen, Bavaria.

Leading military authorities considered Guderian the foremost World War II armored force commander and agreed that he exerted tremendous influence on the military events of this period. One of a handful of military men who believed that tanks could be organized into highly mobile armies to revolutionize ground warfare, General Guderian translated this belief into reality in the face of opposition from the military leaders of his own country.

Heinz Guderian was a rugged, imaginative and highly skilled combat commander, whose troops called him "Hurrying Heinz" among other things.

As Acting Chief of Staff toward the close of World War II, he sought in vain to bring prudence and reason to Hitler. But he had no part in the plots to assassinate Hitler, negotiate peace behind his back or depose him. He could not forget that it was Hitler who had had sufficient imagination to support him in seeking enlarged armored formations when less forward-looking officers of the German high command clung to older conceptions of war.

In March 1945 Hitler suggested that Guderian needed treatment for a heart condition. It was the end of his career.

General Guderian was held a prisoner of war for a time but no reason was found to bring him to trial as a war criminal and he was released. His memoirs, entitled "Panzer Leader," were published in 1952 with a foreword by Capt. Liddell Hart and to date has been the best seller in ARMOR's Book Department.

#### **New Amphibian Assault Vehicle in Production for Marine Corps**



**U.S. Marine Corps**

An improved new amphibian assault vehicle is now in production for the Marine Corps, the Defense Department announced recently.

Developed by the Ingersoll Products Division of the Borg-Warner Corporation, the new assault vehicle is called the LVTP-5, a modern version of the old LVT (Landing Vehicle Tracked), which put thousands of Marines ashore in World War II over the treacherous reefs of Pacific atolls.

The new LVTP-5 combines the amphibious qualities of the old LVT with improved speed, range and maneuverability to give future Marine assault forces a mechanized capability never before attainable in the initial phases of an amphibious operation.

Manned by a crew of three, the new LVTP-5 is an armored personnel and cargo carrier that can hit the beach with more than two squads of combat-ready Marines in faster time than its World War II predecessor could. On land, it is much more versatile.



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# THE BOOK

## Kesselring: A

**KESSELRING: A SOLDIER'S RECORD.** By Albert Kesselring. With an introduction by S. L. A. Marshall. Illustrated. 381 pp. William Morrow & Company, New York, N. Y. \$5.00.

Reviewed by  
**CHARLES V. LUETTICHAU**

The task of writing contemporary military history is an exceedingly difficult one if the yardsticks of exactness, truthfulness and professionalism are applied. Some doubt that such high standards can be achieved immediately after the events have taken place. The Chief Historian of the Army and General Editor of *UNITED STATES ARMY IN WORLD WAR II*, Dr. Kent Roberts Greenfield is convinced that "... unless history is written promptly it cannot be written either correctly or adequately." Pointing to the mass of records which the Army alone has produced during the last war amounting to 17,120 tons or 188 miles of filing cabinets, he states that "... the mass of records that has survived is so enormous as to make it increasingly doubtful whether history can be successfully written except by the generation that has created the records and knows how to use them selectively."<sup>1</sup>

Unfortunately, however, official documents cannot tell the whole story. With the growing complexity

of modern warfare there has arisen the necessity of supplementing these records with the personal accounts of those who participated in the actions which have become history. Historians as well as the interested public will continue to look forward to the publication of memoirs of those who helped make history on the many battlefields of World War II.

Field Marshal Kesselring's memoirs

are therefore especially welcome. They fill a gap that could not have been closed by the account of anyone else.

Kesselring was not a student of the great strategist Schlieffen like von Rundstedt, nor was he the dashing panzer leader like either Rommel or Guderian; but he was a competent administrator, an imaginative commander, and above all, he remained loyal to Hitler, his commander in chief. Starting his career with the Army as an artilleryman, Kesselring served in World War I as a general staff officer, and was retained in that capacity during the period of the Weimar Republic. He gained early recognition, after his assignment to the Luftwaffe, when he became Goering's second chief of staff.

"Smiling Al," as he was called by the American officers of SHAEF's historical section when he assisted them to reconstruct the operations of the Wehrmacht, had acquired early in his career the gift of getting along with his superiors and subordinates. After Hitler's rise to power he learned to admire the "brilliant and smooth-running organization" of the Party, and found it possible "to ignore the less pleasing things." Kesselring had the highest respect for Goering. While he could not help but observe his chief's "extravagant luxury," he attributed it to "eccentricities" and when informed that the art collections would eventually be turned over to

### The Author



U.S. Army  
Albert Kesselring held various important positions in the German Third Reich during World War II. Commencing in 1940 as an Air Fleet Commander he rose to be German Commander in Chief in the Mediterranean and in the waning months of the war he commanded the German Forces in the West against the Allies. His sentence to death at Nuremberg was commuted to life imprisonment in 1947. Five years later he was released by an act of clemency.



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## Soldier's Record

the Reich, Kesselring asked no more questions.

Considering the high rank the author held years before the outbreak of the war, he must have led a most sheltered life. He claims that he was never "informed of political events" and "in retrospect . . . surprisingly little came to [his] ears."

The test for the generals of the new Wehrmacht came with the so-called Fritsch affair in 1938. General von Fritsch had been the Commander in Chief of the Army until Himmler and his henchmen forced his resignation by presenting to Hitler false evidence of von Fritsch's homosexuality. A court of honor, presided over by Goering, conducted an investigation. The only "witness" was unable to identify Fritsch and the case collapsed. Evidently Kesselring never got the background information, and "when Goering afterwards told me how he had succeeded in unmasking the informer and how glad he was to have done so—one could see the satisfaction in his eyes—I had not the slightest doubt that Goering's hands were clean. I presumed the same of Hitler when he had the Court of Honor's verdict read out before the assembled C.-in-C.'s. . . ."

The fact remained, however, that Fritsch was not reinstated and that Hitler never publicly cleared the ranking Army general. The generals, in turn, did not have the courage to demand a formal apology despite the

fact that the collective honor of all generals was at stake. The Army never recovered from this shameful humiliation, while Himmler's position continued to grow at the expense of the Army.

The author comments: "Whether our indifference to political events was right or wrong, we had no need to, nor could we, bother our heads about them." Since the Army was the only power in Germany which

might have stopped Hitler then, it can only be regretted that the majority of the generals could not be bothered. In 1944, on the 20th of July, it was too late.

Today Kesselring admits that this indifference was a mistake. Then he, like many others, was under the almost hypnotic influence of Hitler. The start of the war found Kesselring mildly surprised. Only a week earlier Hitler had addressed the leading generals. It was "a calm and controlled speech" and the author was pleased "to hear no word of a final rupture." The Nuremberg Record, however, reveals that Hitler made it clear beyond doubt that this time he was going to have his war since Chamberlain had spoiled the whole thing with Munich a year earlier. "I am only afraid," said Hitler, "that some *Schweinehund* [S.O.B.] might submit to me a proposal for mediation."<sup>2</sup>

From these examples it becomes evident that Kesselring chose to do his job as a soldier and steer clear from all political involvement. But as he rose to higher positions toward the second half of the war, such aloofness was no longer possible. After the fall of Tunisia in 1943, Kesselring realized that the war was lost and authorized SS General Wolff to sound out the Allies in regard to armistice negotiations, but it soon became apparent that the unconditional-surrender formula would preclude any

### The Reviewer



Rich Studio

Charles V. Luetichau was G2 of a German Antiaircraft Division in the Southern sector of the Russian front during World War II. He came to the United States in 1949. Since that time he has instructed at the Foreign Service Institute, Department of State, and for the last three years he has been employed as an historian and a cartographic editor by the Office of the Chief of Military History, Department of the Army.



separate negotiations by field commanders. When the war reached its final stage Kesselring was realistic enough "not to share the belief of the Supreme Command that the Western Allies, recognizing the danger of communism, would move forward and establish a front against the Soviet armies . . ." In the meantime the German military situation deteriorated so rapidly with the Russians closing in on Berlin that "It was no longer a question of fighting to obtain a generous peace. The absolute duty not to let our German brothers-in-arms fall into the hands of the Russians was all that mattered now. For this reason, and this alone, we just had to fight it out to the bitter end."

The bitter end for Kesselring was to be captured on May 6, 1945, to have to serve as a witness in Nuremberg, and finally to be sentenced to death by a British military court mainly because of the shooting of 335 Italians in the Ardeatine Catacombs. Claiming that the massacre was executed by SS detachments not under his jurisdiction, he pleaded not guilty. The controversial verdict was later commuted to life imprisonment and on July 15, 1952, Kesselring was paroled to undergo surgery. Three months later he was released as an act of clemency.

Kesselring divides his book into three rather uneven parts. The first

part deals with his early career and includes the first two years of the Second World War. The second part, taking up almost half of the volume, is devoted to the war in the Mediterranean. The third part covers the last months of the war beginning with Kesselring's appointment as Commander in Chief West and his postwar experiences. The manner in which the author treats the operations of the campaigns in Poland, France and Russia is disappointingly sketchy. In each of these campaigns Kesselring commanded an Air Fleet—the equivalent of an army group—and contributed materially to the success of the operations. Far more interesting than the operational aspects of the battles, which have been described more thoroughly and competently by others, are Kesselring's opinions at the time with regard to some of the crucial points of the war. In the Battle of Britain the Field Marshal commanded the Luftwaffe units which were ordered to bomb Britain into submission. Only too soon he realized that the costly attacks would never be followed up by a cross-Channel attack. This operation SEA LION could, in Kesselring's opinion, have been successful. "I am thus convinced," writes he, "contrary to Churchill's view, that at least until the middle of August a properly prepared offensive must have been successful." Proper preparation in terms of the author would have

meant the commitment of at least two airborne divisions. He blames the Army and Navy High Commands for having shelved the operation.

In this case, as during the initial phase of the Russian campaign, when Kesselring backed the Army High Command's intention to strike at Moscow without diverting strong forces for the battle of Kiev, his voice carried insufficient weight. Kesselring still believes that Moscow could have been captured and that the campaign would have thus ended with a German victory. This controversial opinion has been expressed in a number of postwar publications and will undoubtedly be debated for many years.

In November of 1941 Kesselring was appointed Commander in Chief South, a position he held for more than three years. He soon found himself in a most confusing and frustrating situation of responsibility without adequate authority. Rommel, who was nearing the peak of his fame, conducted his African campaign with an air of "fatal insubordination" although he was under the command of the combined authority of *Commando Supremo* and Kesselring. The Italians failed to take the war seriously enough and were found to be "exasperatingly inefficient." There was little the Field Marshal could do about it since Hitler and the Armed Forces High Command (O.K.W.) "failed altogether to understand the



Inspecting North Africa

Captured German Photo



Witness at Nuremberg

U.S. Army



importance of the Mediterranean and the inherent difficulties of the war in Africa." Kesselring's main problem at the time was to keep Rommel supplied. The key to success or failure in this task was the island of Malta. Kesselring therefore pleaded for the seizure of the British fortress as a prerequisite for any further advance of Rommel's army beyond Tobruch and into Egypt. Against the urgent advice of the Commander in Chief South both Hitler and the Italians decided to let Rommel go ahead and Kesselring was advised to mind his own business. Meantime Rommel had also been made a Field Marshal which further strained the relationship between the two men. At El Alamein Kesselring's estimate was proved right.

When the first reports reached Kesselring that a great Allied fleet had passed Gibraltar—heading for the landings in French Morocco on November 8, 1942—he was among the few on the Axis side who interpreted Allied intentions correctly. He suggested to move one division to Sicily in order to have it immediately available for an occupation of Tunisia. He realized the tremendous threat to Rommel's army which "was already in headlong retreat"; only prompt action on the part of Hitler and the O.K.W. permitting the occupation in strength of all of Tunisia could, in the Field Marshal's opinion, prevent the destruction of the Axis forces in North Africa. Again Kesselring's advice was disregarded, and he was told by Goering that his estimate of the situation "was all wrong." Precious time was thus wasted and the occupation of Tunisia, although it was a brilliant maneuver, never could be considered more than an improvisation ending in a disaster second only in magnitude to the fall of Stalingrad.

The Allied invasion of Sicily on July 10, 1943, gave Kesselring the opportunity to make some very important observations which, if observed during the Allied cross-Channel attack less than one year later, would have made the landings in northern France infinitely more difficult. Epitomizing the lessons learnt, Kesselring writes: "Positions in depth were an indispensable complement to coastal fortifications, as, in view of the powerful effect of naval gunfire on visible coastal fortifications, a linear defense was useless . . . In fighting from



U.S. Army

#### Surrender to General Taylor

depth local reserves must be so strong and so close that they could *immediately* equalize their own repulses. The first main reserves must be . . . so near to the coast that they could move up into their battle areas as far as possible in the hours of darkness."

After the Allies had gained a foothold on the Italian mainland, Kesselring became the master tactician of a delaying action which denied the American and British armies the Italian boot for more than two bloody years. Falling into this period is a phase of partisan warfare which, after the war, led to Kesselring's sentence. In a time when guerrilla tactics have caused the United Nations Command in Korea a good deal of trouble, not to speak of Indo China, readers will find most interesting what the author has to say from his first-hand experience. It appears to this reviewer that the problem will be with us for a long time to come and deserves careful study.

The reputation of the Field Marshal as an able defense strategist made him the logical choice to succeed the aging von Rundstedt during the last phase of the war. By then Kesselring "had won Hitler's unreserved confidence," more than most generals could claim at this late hour of the war. Loyal to his instructions he held off the Allied armies until the final collapse of the Reich.

Kesselring's account of his life and

the events of the war should stimulate thought and discussion. His experience proves that it is not sufficient for a top commander to be a good soldier and an able tactician; in addition he needs the qualifications of a diplomat to competently discharge the responsibilities arising from coalition warfare; above all he must have character and courage.

This book again reveals the weird and confusing manner which Hitler used to direct all German operations. It illustrates how distrust leads to division of effort, how the absence of clear-cut directives disrupts the chain of command, and paralyzes the initiative of subordinate headquarters.

There is also a note of tragedy: Here is a general who was defeated in battle, frustrated by his supreme command, and tried and convicted by the enemy. Despite such misfortune Kesselring bears no grudge against those who inflicted injury and injustice upon him. His attempt at describing the war as he saw it is honest and impartial. These facts alone would qualify this "Soldier's Record" as a valuable addition to the sources that shed light on actions and background of World War II.

<sup>1</sup>The Historian and the Army. By Kent Roberts Greenfield. 93 pp. Rutgers University Press, New Brunswick, New Jersey, 1954.

<sup>2</sup>Nuremberg Record, Vol. XXVI, p. 343, Document 798-PS. Page 6 of the German original.



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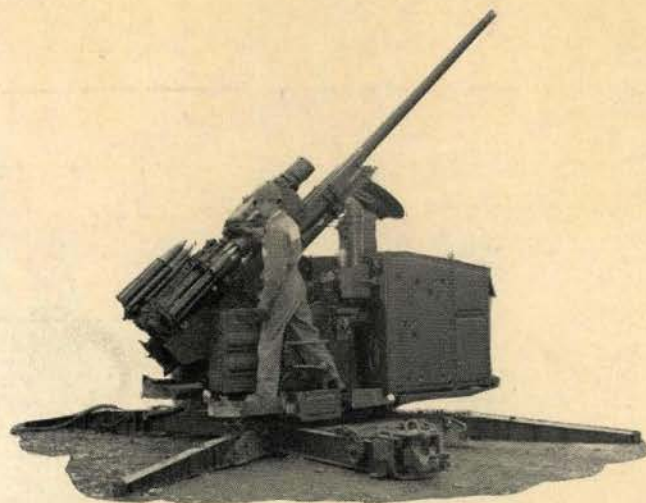
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# ARMOR

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## ARMORED POWER

Armor is firepower, mobility, and shock action. This power is only as strong as the supply elements that are supporting it.

(See Page 4)

JULY-AUGUST, 1954 • 85 CENTS





# THE UNITED STATES ARMY IN WORLD WAR II

## EUROPEAN THEATER OF OPERATIONS

# THE SUPREME COMMAND

by Forrest C. Pogue

THE SUPREME COMMAND tells the story of President Eisenhower's wartime exercise of command over the Allied Expeditionary Force as it seized a foothold in German-held Western Europe in 1944 and completed its mission of liberation by the following year. The headquarters, SHAEF, which General Eisenhower used as his instrument of command,

emerges from these pages as the greatest Allied headquarters of the war. As a history of coalition warfare, this volume, published a decade after D Day, has a significance that spreads far beyond this country's borders and grows more timely with each new headline.

The author has focused his account on General Eisenhower and his staff, including those decisions of Mr. Roosevelt, Mr. Churchill, and the Combined Chiefs of Staff which affected the activities of the Supreme Commander. On the enemy side, he has included enough detail on Hitler and his commanders to provide a contrast between the Allied and enemy command organizations.

The narrative covers not only the decisions that led to victory, but the discussions, debates, conferences, and compromises that preceded decisions. The controversies that arose between Allied nations and individuals figure prominently. Here is Eisenhower becoming impatient with Montgomery, Patton chafing under restraint, Bradley irritated by his British colleague, Roosevelt huffy with de Gaulle, and Churchill arguing in vain against the landings in southern France. Notwithstanding the disputes that highlight much of the story, the author makes it abundantly clear that, on the big issue of uniting against Germany, the Allies ended in agreement.

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# ARMOR

*The Magazine of Mobile Warfare*

Continuation of THE CAVALRY JOURNAL

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JULY-AUGUST, 1954

No. 4

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# LETTERS TO THE EDITOR

## Better Security—Better Reconnaissance

Dear Sir:

During the past two years I have been reading your very fine magazine and I am thoroughly convinced that your magazine is the finest military publication today. There is however one subject which I have felt has not been covered adequately. That subject is the Armored Cavalry. ARMOR is not the only publication which has failed to deal very extensively with this subject. The Army as a whole has failed to supply much information on this vital arm, including the very brief and incomplete field manuals on armored reconnaissance. The doctrine and tactical employment of this arm has been neglected by all levels of command. In a very recent article in *Harper's* General James Gavin puts forth the idea of an Air Cavalry, because of the inability of the present cavalry organization to accomplish its mission. (Ed. Note: Reproduced in May-June issue of ARMOR.) I am in agreement with him in almost all respects.

During the past 14 months I have been the reconnaissance platoon leader in an Armored Infantry Battalion. During this period I have had the opportunity to also work very closely with the 2d Armored Cavalry Regiment, and to observe a number of deficiencies in Armored Reconnaissance units.

The first and by far the biggest deficiency I have experienced and observed is the inability of the reconnaissance units to overcome the time factor between reconnaissance elements and main bodies. In a normal reconnaissance screening mission for any armored unit of tank battalion or armored infantry battalion size it is necessary that the recon unit travel as rapidly as possible with minimum security, in order to remain out in front of the main body, or to remain on the flanks. The need for this minimum security arises from the fact that the unit which is being screened is also a highly mobile unit. This means that even short delays for maximum security by the reconnaissance element must often be sacrificed. The present tactical doctrine states that the scout sections will move by leaps and bounds or leapfrog from one hill, curve or prominent terrain feature to another. This is done rapidly, but does consume time when you consider the fact that the lead element for this reconnaissance unit is a scout squad mounted in ¼ ton trucks. All the rest of the reconnaissance unit and the main body are mounted in armored vehicles. Thus, our present

doctrine dictates that units without any armored protection are to be in the lead. It is true however that the reconnaissance leader has the option of leading with his tanks or M75 personnel carriers, but these are his Sunday punch and must be utilized to overcome any light resistance that is encountered. If he leads with his M41 he takes the risk of having them ambushed and making his unit ineffective for its screening mission. What then is the answer to overcome the loss of time between main bodies and reconnaissance units, and to make our tactical doctrine a little more sound? The answer of course is a lightly armored, highly mobile full tracked reconnaissance car. It is not necessary for the car to be invulnerable to antitank weapons. What is needed is an armored car with armored protection against small arms, artillery, and mortar fire. This would then allow the reconnaissance unit to move with much less loss of time as a great deal of security would be sacrificed without too great a gamble. It would also allow the reconnaissance leader to use his organization as it should be used, by leading with his scout section for seeking out the enemy and destroying him with his power of tanks and infantry.

The next deficiency which is now very inherent in our present armored cavalry units is the great dependence upon supporting units from the rear, in order to maintain rapid mobility. This problem has been steadily increased with introduction of the M75 and the T41 into these units. Both of these vehicles consume large quantities of gasoline, which greatly decreases their range. The problem of resupply is always acute. Last year during a large exercise

here in Europe there were instances when whole companies found themselves perilously close to being stopped completely, because of a lack of gasoline. This of course means that the present-day cavalry unit cannot perform the mission by which it gained its reputation for dash, daring and decisive action. The great dependence on a continuous line of supply from the rear forward makes it impossible for an armored cavalry unit to operate on an independent mission behind or within the lines of an enemy force.

What then in view of the present restrictions imposed upon our armored reconnaissance units can we do to give them back the ability to perform reconnaissance missions for the battalion and division commanders, and to enable them to perform independent and decisive missions. The answer, I believe, is that given by General Gavin. We must be able to move these units by air. The aircraft will then become to the tank, what the horse was to the foot soldier. However along with this we must give them light armored vehicles with high velocity antitank guns. Presently this seems fantastic to some people and highly impracticable. But to those who have seen our present armored cavalry unit perform, it is the only sound answer to a force which at present cannot perform its true purpose. By the use of helicopter the lightly armored vehicles with high velocity antitank guns and infantry could be moved from one prominent terrain feature to another, where they could be set down to fan out and wipe out light resistance groups. Then they could be picked up by their air transport and moved on, continually remaining well ahead of the large tank columns. All of this I realize would require a great deal of thought and work to make it a practical working force, but is it any more practical to maintain our highly costly armored cavalry units which have so many restrictions placed upon the performance of its mission?

I realize this letter is rather long to

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**Rates:** See bottom of contents page.



ask for more material on our cavalry units, but I strongly feel that it is a subject well worth looking into and devoting some time and thought

1ST LT KEN A. DAVIS  
Hdq & Sv Co, 31st AIB  
APO 696, c/o PM, N.Y., N.Y.



Carl B. Sterzing, Jr.

#### In Appreciation

Dear Sir:

This is to express my appreciation for receiving the Armor Association Award of 1954 for the A&M. College of Texas.

This year is the thirty-fifth anniversary of the mobile arm at Texas A&M. Tracing their many traditions back to the cavalry, and known respectfully throughout the Corps of Cadets as "Jocks," this unit has for this many years been turning out men who have gone on to become leaders in the "Arm of Decision."

The pride these men have in their branch is equalled by no other unit in the Corps, which includes all branches of the Army, plus the Air Force and

comprises the largest military college in the United States.

It is for this reason that I am especially grateful to you, and for my association with these men, who for thirty-five years have received little publicity, but have been the backbone of the Cadet Corps at Texas A&M. College.

CARL B. STERZING, JR.  
Austin, Texas.

#### Wanted—Back Copies of The Journal

Dear Sir:

The University of Texas Library has referred to you for information on the Buffalo Wallow Fight—specifically the *Journal*, Vol. 14, Pp. 367 ff. This seems to have occurred in "Record of Engagements with Hostile Indians in the Division of the Missouri from 1868 to 1882."

I would like very much to see this reference, and if it occurs in a series of articles, I would like to have the entire series, as my field of study is centered on this type of activity on the Plains and in the Southwest. If they are available, please quote price. If not available from your office, can you suggest a dealer who might have them?

NOEL M. LOOMIS  
Western Writers of America  
3917 Cedar Avenue  
Minneapolis 7, Minnesota

• This article appeared in four issues of the *Journal*. Specifically these issues are numbers 49, 50, 51, and 52 of Volume XIV published in 1903-04. If anybody has these issues and desires to assist please contact either this office or the address shown above—Ed.

#### To Maintain That Spit and Polish

Dear Sir:

I suggest that custodians of unit funds consider buying a small electric motor

**A PREVIEW FOR  
THE SEPT-OCT ISSUE**

---

A book review by Mr. Charles  
B. MacDonald, famed writer  
and historian, of the new  
book entitled  
"Combat Actions in Korea"

---

Sum and Substance  
The 50th Armored Division  
at their summer encampment  
by key personnel  
of the division

for their units. A motor installed in the day room, and equipped with a cloth buffer wheel impregnated from a stick of jewelers' rouge, makes brass polishing a snap.

While I have not seen it tried, I believe that changing to appropriate buffer wheels might turn the motor into a fine boot and shoe polisher.

If the unit is bothered by surreptitious day room mechanics, the motor can be protected by enclosing it in a slotted (for ventilation) box with only the switch and power shaft exposed.

The local I.G. office tells me that this is a legal expenditure of unit funds.

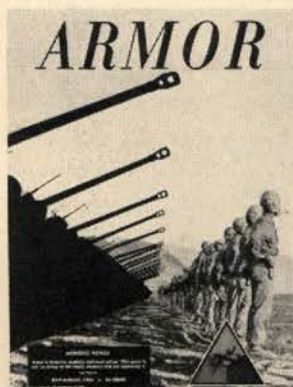
MAJ. POWELL A. ANDERSON  
15th Armor Group  
Fort Knox, Kentucky

#### Indo-China

Dear Sir:

During the past couple of years news commentators and columnists have mentioned repeatedly the use of tanks and armored vehicles in Indo-China. I have searched in vain through the pages of *ARMOR* for articles dealing with this campaign. Because of the possibility of becoming involved in this conflict, I believe that *ARMOR* would render a service to the nation and the military profession by presenting whatever information is available on the use of armor in this part of the world, stressing the terrain and other problems that have been encountered, and the tactics and techniques that have been developed to overcome these problems.

1ST LT. ROBERT L. BURNS  
Haddonfield, New Jersey



#### THE COVER

This interesting pattern of Armored might represents men and machines of A Company, 245th Tank Battalion, as they lined up for the 45th Infantry Division Armistice Day Review in Korea on 11 November 1953. The silhouetted effect is not for security reasons but rather to emphasize the power assembled in one tank company.



# The Armored Division Trains

CARDED

by

COLONEL ALFRED H. HOPKINS

*The feats performed by the man behind the man behind the gun often go unheralded. For a better appreciation of the functions of the Armored Division Trains, ARMOR has turned to an officer who has had experience as an Armored Division Trains Commander in peace and war.*

All photos U.S. Army



You have to turn in "an empty can for a full can," is the motto of the Quartermaster Battalion which comes under the command of Armored Division Trains.

**I**T is believed that of all commands in an Armored division today, its Division Trains are least understood. The Division Trains are the essential rear echelon elements for the combat commands. They provide the maintenance, supply, evacuation, and transportation facilities required for the division's operations.

The man behind the man behind the gun must perform effectively to provide a good fighting team.

## Peculiar Need and Mission

An Armored division's need for support in combat is unusual in that supplies and maintenance for the new tanks are considerably greater than has been heretofore visualized. Tremendous quantities of gasoline and ammunition are required for each day of combat. Medical evacuation has always required transporting wounded much greater distances than with the Infantry division. Transportation required for these functions keeps growing with the improvement of equipment and weapons. An Armored division's operations provide for fast movement, frequently at some distances from the Army Headquarters' bases of supply. This, of course, means that the Division Trains and all supporting activities have to be geared to frequent and, occasionally, long moves deep into enemy territory.

To provide security and tactical control, as well as to plan the movements of these units, an Armored division has its Armored division trains with a senior officer in command and his staff. He is also charged with the non-technical training of all units assigned to the Division Trains.

This headquarters is included among the major commands of the division.

## Division Trains Organization

The organization of Division Trains in garrison follows a neat pattern: A Headquarters & Headquar-

---

COLONEL ALFRED H. HOPKINS served in Europe during World War II with the 1st Armored Division, part of which time he was Trains Commander. Subsequent to the War he served in AFF Board No. 2. Following an overseas assignment to Pakistan and Kashmir he returned to Fort Hood and his present assignment as Division Trains Commander, 1st Armored Division.

ARMOR—July-August, 1954



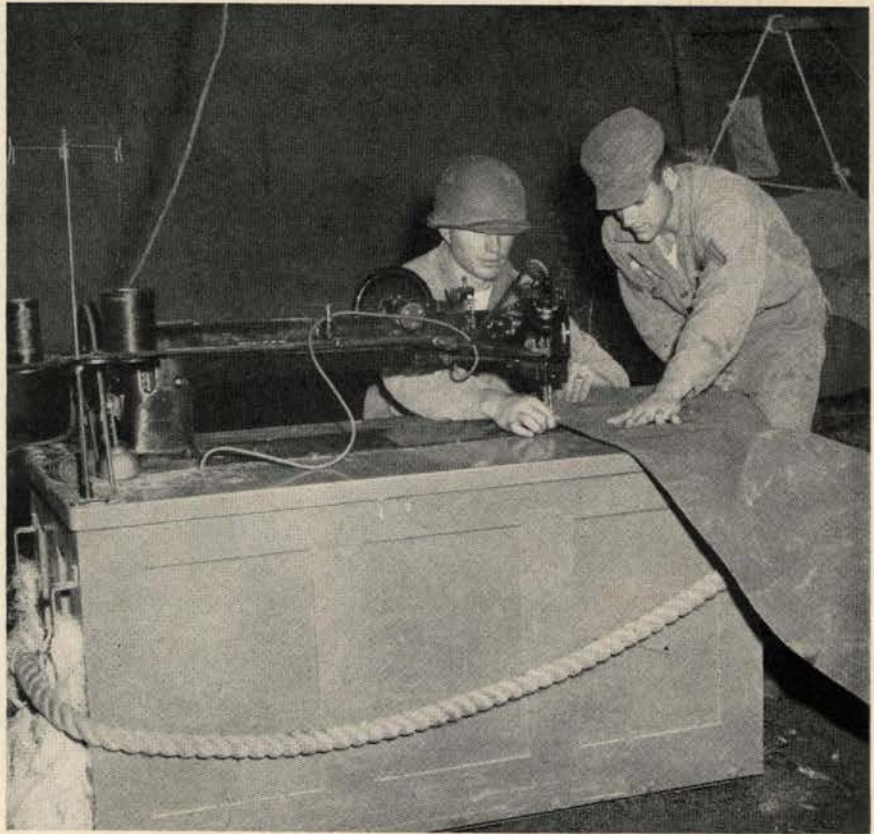
ters Company, Division Trains; a Medical Battalion; one Ordnance Battalion; a Quartermaster Battalion; Division Band; and a Replacement Company.

In the field, the Division Trains takes on a very flexible character and may have a multitude of variations. There are three usual attachments in addition to those assigned as shown here. Division Headquarters Rear Echelon is attached to the trains for protection, control and movement. This consists of all the Headquarters Staff Sections not needed for combat; the Adjutant General, Finance Officer, Judge Advocate, Inspector General, Chaplain, Special Services, and Medical Sections. In addition, a Division Administrative Center consisting of all personnel sections of the division units is formed in the trains area under control of the Adjutant General. The Headquarters Commandant of the division normally travels with the forward echelon of that headquarters. Baggage of the units is usually dumped in the Division Trains area or stored in an Army Headquarters area. If moved forward at all, it must be moved by a shuttle system as the Division Trains displaces. If not, it is stored indefinitely under guards furnished by the units concerned.

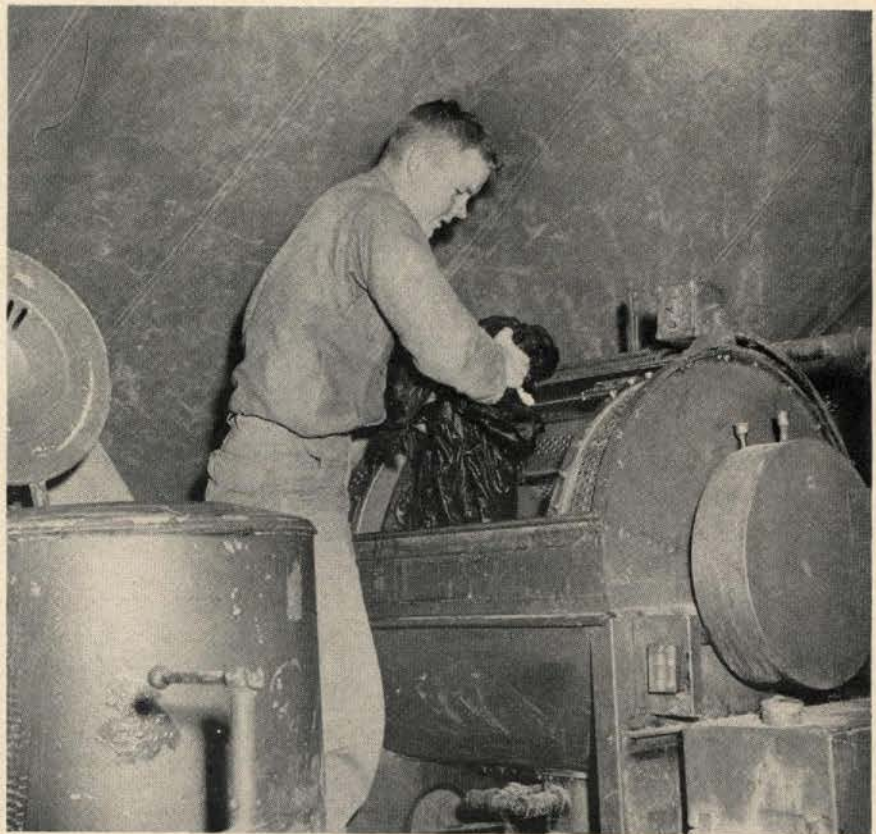
For communications, a Signal Relay Team as well as the Division Signal Rear and Supply (Signal Company minus detachments) travels with the Division Trains.

Headquarters & Headquarters Company, Division Trains, supports the Trains Commander's mission by providing mess, administration, supply, maintenance and transportation functions.

The Motor Transport Platoon of Headquarters & Headquarters Company, Division Trains, has 6- $\frac{3}{4}$ T Trucks, 9-2 $\frac{1}{2}$ T Trucks, and 9- $\frac{1}{4}$ T Trucks assigned. No vehicles are assigned to Trains Headquarters in the T/O&E. Because of this, it has been found necessary to assign 3- $\frac{1}{4}$ T Trucks and 2-2 $\frac{1}{2}$ T Trucks for the operation of the Trains Commander CP. The 2-2 $\frac{1}{2}$ T Trucks are equipped as a mobile CP with an AN/GRC-3 and SCR 506 mounted in each. The SCR 506 operates in the Division Command Net. The three jeeps provide transportation and one of them has an AN/VRC-8 to



The repairing of tarpaulins is the responsibility of the Ordnance Battalion. The sewing machine, weighing 600 pounds, is loaded by a tank wrecker onto its truck.



The Field Service Company's Laundry Section is kept quite busy during Exercise Spearhead. Another QM responsibility under command of the Division Trains.





Casualties of Combat Command B, one of the three major commands of the First Armored Division, being processed through the Medical Clearing Station.

provide communication for the Commanding Officer, the Executive Officer, and Liaison Officer, respectively. Three drivers for these five CP vehicles must be provided from the Headquarters clerks, while the other two men come from the Truck Platoon.

The Motor Transport Platoon, after having provided CP vehicles, has 19 vehicles for day-to-day operation. This is the transportation which is used to move Division Headquarters Rear Echelon, the Band, and personnel of Headquarters & Headquarters Company, Division Trains. Six jeeps of the Transport Platoon are allotted to the Adjutant General to provide daily transportation of the staff. Cargo transportation will be on a dispatch basis from Headquarters & Headquarters, Division Trains, according to trains needs. The Division requirements for cargo transportation are provided from 6 Truck Platoons (96-2½T Trucks) in the Quartermaster Battalion. With the added requirements, due to gasoline and ammunition factors mentioned earlier, it is certain that this transportation will not be sufficient to effectively supply

the division. Additional means will have to be acquired from outside sources, either Corps or Army Troops.

#### Unit Trains and Combat Command Trains Organization

The unit trains of an Armored division are not assigned to the Division Trains; but they function as an integral part of their parent combat unit. These consist of the battalions' field trains and combat trains. The field trains consist of unit kitchen, supply, maintenance, and baggage trucks and are under control of the Battalion S-4.

The combat trains consist of a maintenance detachment (including the recovery vehicle and mechanics), and a medical detachment to operate

**A tank without gasoline or a vital part might better be a pillbox. A rifleman without ammunition must use his bayonet or club with his rifle. A modern army without food will not long survive.**—Orlando Ward, Maj. Gen., U.S.A.

the Battalion Aid Station.

Combat Command Trains are a consolidation of all unit field trains and combat trains of the CC Units. They are controlled by the Combat Command S-4. He will operate a CCCP (Combat Command Control Point) for all his units and will be responsible for the security, and operation of this organization.

The CC S-4 is not an operator in the normal sense that S-4's operate. His function is to control the movement of the field trains in combat, provide security for them and all technical services located in his area, and to keep the Combat Commander informed concerning logistical matters. He does not process requisitions, nor does he operate in supply channels. Battalion supply and evacuation vehicles pass through his area performing their normal mission from unit to Division Supply Area only to assure the Commanders that control and protection are afforded.

If a Combat Command is detached to another Division, Army, or Corps far removed from their own Division, their supply points will change accordingly. Then, the CC S-4 will be called upon to operate *per se*.

#### Employment of Trains on the Offense

On the offense, while an Armored division is moving forward, the Division Trains are close behind the combat echelon and usually not more than 15 miles in rear. The G4 of the division in most cases will decide when the Division Technical Services will move, and usually indicates to the Trains Commander the general area for bivouac after coordination with G3. Any movement of a division trains unit is subject to approval of the Trains Commander for security reasons. Under such conditions, the medical battalion will send its medical companies well forward to establish Collecting Stations in the Combat Trains Areas,\* usually within five miles of the fighting area. The Ordnance Battalion, would normally send an Ordnance Company well forward to support each Combat Command. Vehicle evacuation and maintenance are facilitated by being in close proximity to the tanks and vehicles damaged or broken down on the battlefield.

In this situation the Ordnance and



Medical Companies are located in the Combat Command Trains Area; but remain under control of their respective Battalion Commander.

Correspondingly, Combat Command Trains are usually located about 3 miles from the front and generally in close proximity to the Division Reserve for protection.

The Combat Trains of all units are part of the unit field trains and are immediately in rear of their fighting units for quick support. In all cases, the supply vehicles of the field trains operate between the units and Division supply installations located at an intermediate position between the Division Trains and Combat Command Trains areas. The division supply area consists of supporting services from the assigned units of Division Trains under direct control of the technical services. They are supervised by Division G4. A DSCP (Division Supply Control Point) operated by the Division Quartermaster is located near or in the supply area and on the MSR (Main Supply Route). This control facilitates traffic regulation of convoys and supply personnel en route to the rear for resupply of their units, as well as provides information on location of supply installations in both the Division and Army areas.

It is not feasible for the Division Headquarters Rear Echelon to keep up with the trains because of the undesirability of frequent movement of these installations. This is particularly true when the rear echelon is left in an Army area for protection, until it can rejoin the division.

#### **Employment of Trains on the Defense**

In a defensive action, the rear areas of the fighting units must be cleared of traffic to permit withdrawals rapidly. Supporting services must displace quickly since all their areas are located still farther to the rear. The Division Trains area under these circumstances may be as much as 25 miles in the rear of the fighting front. Ordnance and Medical support of the Combat Commands is then provided by detachments of the division technical service companies normally supporting them. Combat Command Trains may be placed as far as 10 miles to the rear since it is desirable to keep these trains, consisting mainly

**The bravest men can do nothing without guns, the guns nothing without plenty of ammunition, and neither guns nor ammunition are of much use in mobile warfare unless there are vehicles with sufficient petrol to haul them around.**—Field Marshal Erwin Rommel.

of thin-skinned vehicles, out of small arms range.

#### **Employment of Trains in Exploitation**

The Armored Division in exploitation is a special problem resulting in frequent and often long moves deep into the enemy territory. Division Trains must keep up in order that supporting services do not impede or delay the operation. Certain elements in the trains cannot and need not be in close supporting distances at all times.

In such rapid moving situations the Combat Command Trains are still in their same relative position; but the distances from their position to the

leading elements of the battalions is increased because of road distances involved when the tanks, artillery, and infantry are moving. For this reason, supply and ammunition trucks from the field trains are usually sent forward to travel with the combat trains in order to effect quick resupply on the move.

#### **Comments Lessons Learned**

During World War II and in training since then, a number of lessons have been learned which will help those interested in the effective operation of the Division Trains. One calls for a change in present T/O&E and is as follows: The present T/O&E for the Trains Headquarters calls for a Major, as an executive officer. An officer of at least equal grade to battalion commanders is necessary for several reasons. In Africa, the 1st Armored Division supply points were many miles forward of Division Trains area and needed a tactical commander for proper supervision and protection. The Trains Commander was given this function. The Division Commander would fre-



Awaiting darkness to perform a resupply mission under the cover of night are these gasoline trucks of the Quartermaster Battalion, Division Trains.



quently give miscellaneous, and additional missions to the Trains Commander. Additional troops from higher headquarters were attached to the Trains. The Trains Commander frequently operates at a great distance from his command headquarters. A high ranking Lieutenant Colonel as executive officer is deemed to be more desirable than the present T/O&E setup of a Major.

#### *Armored Infantry Support*

On many occasions, the Trains will operate through territory which, although cleared of organized enemy units, may be infested with guerrilla groups. These may reach such proportions as to require combat troops for support and to avoid loss of valuable supplies and equipment. An Armored Infantry Company reinforced by a tank platoon may be required to protect the Division Trains.

#### *Disposition of the Bridge Company*

The Engineer Battalion in certain cases may pose a problem of needless traffic in forward areas if bridges are not a serious problem. When this occurs, the Bridge Company is usually located in the Division Trains area rather than following immediately in rear of units supported or Division Headquarters. These vehicles of awkward size contained in the Bridge Company can be sent forward quickly to supported units if needed. Otherwise, the bridges can be off-loaded and these vehicles used for cargo transportation. This was done during the Tunisian Campaign in World War II and in Italy.

#### *Prisoner of War Problems*

Since the Division POW inclosure is usually located in the Division Trains area, consideration should be given to situations when special prisoner problems develop. In Africa, on one occasion, many German and Italian prisoners were handled by the 1st Armored Division. A planned organization must be made to afford additional troops, until Army can resume responsibility for this problem.

#### *The Division Trains—A Flexible Organization*

Just as the Combat Commands are flexible organizations, so are the Division Trains. Each situation means adapting the organization to the need.



An M62 five-ton wrecker, preparing to haul in a ¼-ton for repair, another Ordnance responsibility coming under the Commander of the Division Trains.

All commanders must treat this as a necessary function of their units in order to provide the best in service support.

#### *Morale—A Key Factor*

The basis of morale in service units is the same as with combat units—good leadership, knowing your job, and doing it well. When these exist, the individual soon develops a sense of real achievement—feeling that he is accomplishing a worthwhile task in helping the fighting team.

#### *Self Reliance is Essential*

Leadership is especially important in Division Trains units. A small weakness in one part will be reflected over a wide segment of the Division. Its leaders must be self-reliant to a large extent, because they operate at a great distance from their parent units causing a great reduction in supervision from their own units. Garrison training as well as field training must, therefore, emphasize self-reliant leadership.

#### *Coordination Between Staff and Units*

The constant need for coordination

between technical units, the division staff and the supported units is mandatory. Maintenance and supply will lag behind, if the plans of the fighting elements are not known early and worked into the support plan. Although the primary interest in this matter lies with the G4, the Trains Commander is greatly involved in matters of training and control of these units. He should be included in the over-all planning of the support of the division.

#### *Conclusion*

In conclusion, the Division Commander looks to one man, the Trains Commander, for tactical control, movement and security of his rear installations. A small headquarters is provided to the Trains Commander for this purpose. The Division G4 is the supervisor of trains units in so far as technical support is concerned. This heterogeneous command must be kept mobile and within supporting distances of the combat echelons wherever they go.

Without the Division Trains, Armor cannot function continuously and expeditiously.



# THE 40th ARMORED DIVISION

**C**ALIFORNIA joined the States of New Jersey and Texas on the 1st of July, when its 40th Infantry Division was converted to the 40th Armored Division. This brings the National Guard total to three Armored Divisions (50th—New Jersey, 49th—Texas) but does not change the numerical troop basis of the National Guard which remains at 27 divisions including 24 Infantry divisions.

The 40th Infantry Division was ordered to active military service by the Department of the Army on September 1, 1950, one of eight National Guard divisions ordered to active Federal service during the Korean emergency. It reverted to State control on the 30th of June.

Major General Earle M. Jones, state adjutant general, said the Department of the Army had requested the State of California to convert one of its infantry divisions to an armored force in keeping with the current Army trend for greater mobility and striking power.

General Eaton, the Division Commander, said the conversion climaxed several weeks of exhaustive planning designed to facilitate the complicated transfer of more than 5000 men and officers, as well as hundreds of thousands of dollars worth of military equipment.

Every effort has been made, the general said, to maintain the integrity of subsidiary units to satisfy the personal desires of individual Guardsmen and to assure that the 40th emerges



Maj. Gen. Homer O. Eaton, Jr.  
CG, 40th Armored Division

from the conversion with the efficiency and *esprit de corps* which have marked its past operations.

"In some cases, however, it has been necessary to make adjustments in company-size units to create a well-rounded armored team," he explained.

The organization will journey to Hunter Liggett Military Reservation, near King City, California, on August 14th for its first summer training encampment as an Armored Division.

"The mission of armored units is in many ways radically different from that of infantry organizations," explained the general, "and training during the two-week camp period will be directed at acquainting our men and officers with tanks, armored weapons, and other combat equipment new to them."

Incorporation of the 111th Armored Cavalry Regiment, already a highly trained armored unit, into the 40th will be of incalculable benefit, General Eaton said, since it will provide a core of tank experts to help indoctrinate the former infantrymen.

General Eaton also revealed that over 5000 Guardsmen, the goal set last fall at the beginning of an extensive "Operation 5000" recruiting campaign, will accompany the 40th to Hunter Liggett for field training. This more than doubles the number of men who participated in last year's exercises, the first encampment after National Guard personnel of the 40th returned from Korean combat.

Official colors and battle honors of the division were returned to the State by the Federal government less than two weeks before the conversion in a colorful ceremony at San Francisco. Prior to that time, a 40th Infantry Division had been on active duty in Korea in addition to the existence of the "old" 40th in the California National Guard.

General Eaton, vice principal at Los Angeles' Alexander Hamilton High School, assumed command of the 40th a year ago after serving as the assistant division commander throughout its recent overseas duty in Japan and Korea.

The United States Armor Association welcomes the 40th Armored Division to the mobile team as it assumes its vital role in the defense of our nation. A message has been sent from the president of the Association.





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CARDED

# Armored Leaders Production Line Style

by

LIEUTENANT COLONEL JAMES W. COCKE

**A**T 0845 hours on 19 February 1954, my executive officer stepped to the office door to remind me: "This is it! Ten more minutes." That's right, in exactly fifteen minutes the 3d Armored Division Commander, Major General Gordon B. Rogers, would arrive to graduate Armored Leaders' Course Class #299. This was the last class to be graduated from the Armored

**LIEUTENANT COLONEL JAMES W. COCKE**, Armor, served in Europe during World War II, as a Staff Officer with the 106th Cavalry Regiment. He was the last Commandant of the Armored Leaders' Course, 3d Armored Division. Upon its deactivation he was assigned to Vanderbilt University as PMS&T.

Leaders' Course prior to inactivation.

Upon arriving at the auditorium, I discovered that the class was already seated, and everything was in order. I was pleased that the personal appearance of the students was impeccable. This ceremony represented the last station on our production line for the Armored Leaders' Course. It was here that the leadership quality of pride stood out most. Repeated instruction, rehearsals and inspections had produced these impressive results.

As I awaited the general's arrival, some of the salient features of the Leaders' Course history paraded through my mind. Established in

May, 1947 as a self-contained unit, it operated with an authorized strength of twenty Officers, three Warrant Officers and ninety-eight Enlisted Men in its own area on the reservation. The organization included Headquarters, Headquarters and Service Company; Instructor Group; and Tactical Section, including five student companies. The Hq & Sv Co operated three mess halls, a battalion supply section and a unit personnel office. While the shipping section was responsible for final processing of pipeline graduates, the instructor group maintained a small training aids pool and workshop.



## Leaders' Code\*

"I become an Army leader by what I do. I know my strength and my weaknesses, and I strive constantly for self-improvement. I live by a moral code, with which I set an example that others can emulate. I know my job, and I carry out the spirit as well as the letter of orders that I receive.

"I take the initiative and seek responsibility, and I face any situation and make my own decision as to the best course of action. No matter what the requirements, I stay with it until the job is done; no matter what the results, I assume full responsibility.

"I train my men as a team and I lead them with tact, with enthusiasm, and justice. I command their confidence and their loyalty; they know that I would not consign to them any duty that I myself would not perform. I see that they understand their orders, and I follow through energetically to insure that their duties are fully discharged. I keep my men informed, and I make their welfare one of my prime concerns.

"These things I do selflessly in fulfillment of the obligations of leadership, and for the achievement of the group goal."

\*Required to be learned by all students.

The three basic requirements for selecting personnel for training were, first, Area Aptitude I Score of 90 or above, second, Physical Profile of A or B, and third, Nominated by the basic training company commander after he indicated potential leadership ability.

Each member of the hand-picked cadre exemplified the high standards of appearance, military bearing, discipline, and instruction. This system of selection enabled the school to operate most efficiently. The educational level of the cadre—the highest in the division—averaged 13½ years of formal schooling. Many of the cadre who were seasoned veterans set a high example for the students to follow, and at one time included a World War II Congressional Medal of Honor Winner, Captain John J. Tominac.

The tactical section was responsible for the students' appearance, housekeeping, marching and disciplining. Each company was capable of handling one hundred students.

One of the bases of discipline, responsible for the highest standard of

performance in the division, was embodied in the merit-demerit system, under control of the tactical section. By carefully selecting students and by maintaining the highest of standards, we were able to "weed out" the mentally and emotionally unfit. Of 18,000 students entering the course, statistics indicated an average of about twenty-five percent of each class failed to complete the course. During the early days in the course, demerits could be given by instructors as well as by upperclassmen for offenses ranging from having a rusty rifle (10 demerits) to the use of profanity or obscenity (1 demerit). The demerit, given at the time of the offense, was described on a printed slip initialed by the offender. If he admitted the offense, he initialed accordingly; but if he desired to appeal, he then so indicated and could be heard by the company commander. Particular stress was placed on personal appearance and on the care and cleaning of living quarters and equipment. Twenty-five demerits were sufficient for a man to be boarded. A standing board of three officers evaluated all cases in question

with the battalion commander personally reviewing the final results.

### Training and Curricula

The training fell logically into two phases: the first five weeks, phase I, consisted of 183 hours of formal instruction in the classroom; the next three weeks, phase II, was the application of the principles taught on practical work with the regular cadre of the training companies in the division.

The classroom work in phase I was divided into four major groups:

1 *General Subjects* comprised eighty hours instruction such as dismounted drill (DD), physical training (PT), formations and ceremonies, interior guard, military customs and courtesy. Whenever possible we obtained men with college degrees in physical education to conduct PT classes. We exposed the students to and instructed them in proven training and instructional methods.

2 *Combat training* consisted of thirty-nine hours in subjects such as duties of armored leaders, estimate of the situation, combat orders, combat

*"The major accomplishment of the school in the eyes of the Army and the country should be judged not only on the degree of military proficiency with which each man leaves the unit, but also on the degree to which his body and soul have been conditioned toward the all-important basic attribute of a good leader, CHARACTER."*—Statement of one junior officer instructor.



and intelligence. This was culminated with the tank leaders' reaction test course which stressed training for the individual in employment of tactics and use of supporting fires, but seldom rose above the platoon level.

3 *Training Methods and Management* occupied forty-two hours of methods of instruction. During the first two weeks, stress was placed on the fundamentals and principles of preparation and delivery of instruction. In the following three weeks, students presented two three-minute lectures, followed by a thirty-minute conference. Presentations included steps of preparation and use of lesson plans and training aids. Each student presentation was critiqued by another student. Students also submitted grade evaluation sheets to class supervisors or monitors.

4 *Principles of leadership* utilized twenty-two hours in which psychology, character, role and objectives of leadership; leader-subordinate relations; combat leadership; personal adjustment and development of the personality; selection, evaluation and promotion of leaders were stressed.

Abraham Lincoln once said, "It is difficult to make a man miserable while he feels he is worthy of himself . . ." All commanders, instructors and tactical officers were constantly striving to improve the traits of character necessary for successful leadership and to make a man feel worthy of himself. Self-discipline with strict and loyal adherence to rules and customs was emphasized. Respect for duly constituted authority was put to the test by assigning upperclassmen as assistant instructors, platoon and company commanders. They were further required to conduct PT exercises and DD periods.

The practical work, phase II of training, enabled the students to work with basic trainees. During this phase the students were "farmed out" to various training units throughout the 3d Armored Division where they applied the principles of leadership. Many problems arose which tested the student's ability to lead men. He acted as tank commander, squad leader, platoon sergeant, or even the field first sergeant, under the watchful eyes of the cadre. From the viewpoint of the school, this phase was most difficult to supervise because of

the rapid turnover of training company cadre within the division.

Theoretically each student could compile a possible 1000 points during the course. Phase I, classroom work, consisted of 700 points, phase II, practical work, 300 points. Grading during phase I was based on observation and evaluation by faculty and fellow students. Two hundred points were based on "buddy ratings" by fellow students; 300 points were based on faculty board rating; while the tank leaders' reaction test amounted to 200 points. In phase II, ratings were made by the company commander and two regular cadremen. It was possible to score 300 during this phase. Four hundred points was the minimum passing score for the course. In general, the entire evaluation was based upon the student's ability to apply principles of leadership, and not upon academic principles alone.

The principal address by General Rogers points up the basic fundamentals of leadership.

"Gentlemen, I congratulate you upon having had this opportunity to improve yourself. . . . As members of the leadership course, you have received the *fundamentals*. You are not the finished product, but you have a basis upon which to build. . . .

" . . . the field manuals and books list various traits of leadership. They speak of courage, intelligence, initiative, determination, justice, and others. Those things are all true. However, they all 'boil down' to two things: First, know your job and do it. . . . Secondly, know your men and take care of them. . . . If you do those two things, you've got it made. That's the essence of leadership. . . .

"For example, a noncommissioned officer or an officer, at the end of a hard day of marching, maybe in a cold rain, shouldn't hustle off to the kitchen to get a cup of coffee or to get warm. He should see that his men are taken care of, that they have a proper place to camp where they can be comfortable and dry, before he takes care of himself. . . . We had a saying in the Horse Cavalry that an officer took care of his horses first, then his men, then himself last. That's a good rule. We should all follow its principle.

"Taking care of your men doesn't mean babying or pampering them.

You take care of them by seeing that they have the proper clothing, equipment, shelter, food, and also seeing that they're on the ball—seeing that they salute, they are sharp, they are shaved, and they are disciplined. Discipline is important because it will save their lives in battle. . . . Give them a fair break and see that they are in proper condition and that they conduct themselves as soldiers. . . .

"My third point is that the outstanding characteristic of a noncommissioned officer is that he is dependable. . . . Officers come and go. Good noncommissioned officers hold units together by continuity of policy. . . . Anyone who has that trait is bound to succeed.

"The last point is attitude. . . . Eighty percent is attitude. . . . The fellow who 'drags his feet' has to do just as much work, sometimes twice as much if he has to do it over, and he gets a growl instead of a pat on the back. . . . Remember attitude—not only do what you are told, but do it promptly, cheerfully, in a cooperative way and you can't miss. You are bound to succeed. That is the same whether you are in civilian life or in the Army. . . . It doesn't matter whether you are a mechanic, a soldier, a carpenter, a preacher, or what have you, it doesn't matter.

" . . . In closing, I want to wish you the best of luck and success in your career. I hope I will see something of you both here and at future stations."

#### **The Presentation of Awards and Diplomas**

General Rogers stepped to the opposite side of the stage to present the awards and diplomas.

The first award went to the winner of the American Spirit Honor Medalion and Certificate which is provided by the Citizens' Committee for the Army and Navy, Inc. It is an award for the display of outstanding qualities of leadership best expressing the American Spirit—HONOR, INITIATIVE, LOYALTY, and high example to comrades in arms. The award is also a means of promoting closer relationship between the Armed Forces and Civil Communities in which the training divisions and centers are located. A Board of not less than three officers selects the recipient from the five candidates who



have the highest academic ratings, but who have not had prior military service or assignment to a unit other than a training unit.

The second award went to the outstanding academic student.

As the letter and diploma were presented a flash-bulb popped signifying recognition of achievement here at the school.

It has been the policy to publicize outstanding students at every opportunity. The public information program of Leaders' Course strived not only to publicize the events of interest at the school, but also to dispatch personal data on the graduating students to hometown areas. This was accomplished by public information releases on each man, complete with photograph, to local newspapers. Such a release focused attention on the man himself, his family and the Army as a whole. This event afforded the young man a recognition of his success early in his career and gave him pride and real confidence in himself. During the seven months of this concerted program, over 1,076 releases were sent to newspapers all over the country. In addition, personal letters were sent to the parents or wife of each student.

Publicity in the local Division and post publication also increased interest in the school among the trainees throughout the division, and gave them a goal for which to shoot. Approximately fifty feature articles were published in Division Newspapers concerning men and events in Leaders' Course. The Guidon, a weekly unit newspaper, also publicized outstanding people within the organization.

The next awards went to the high scorer of the Leaders' Tank Reaction Test Course, and the members of the high scoring crew for the same course.

These young men had shown outstanding ability in evaluating both sides of a problem and arriving at sound decisions under stress.

The purpose of the Tank Leaders' Reaction Test Course was to evaluate each potential tank commander's ability to solve a series of typical problems which might confront him in combat. Here we tested his ability to estimate combat situations, make decisions, and give orders under stress. It was designed to illustrate and teach aggressiveness, adherence to the mission,

operation of tank sections, tank crew teamwork, and tank combat technique.

The problems served to stimulate the thought process and to give him a pattern of behavior or experience upon which to draw. The course consisted of twelve problems, each situation requiring combat decisions on the part of the tank commander and proper utilization of crew members. Realism was stressed; explosives, smoke, and blank ammunition were used; realistic aggressors and bunkers were provided. The aggressor infantry was represented by one student company in its fifth week of training.

Students were graded by a cadreman who accompanied each tank crew through the course. Each crewman was individually graded against time.

The class was divided into four-man-crews prior to running the course. Upon arrival, these crews remained intact, and the class was further divided into three groups, one running the test course, and the other two being assigned to stations for concurrent training.

#### *Problem #1, Situation and Action Taken:*

As the tank climbed a small hill the tank commander encountered a convoy of destroyed burning armored vehicles. This was the first warning of trouble! Nearing the burning convoy he saw a friendly soldier signaling the tank to halt. "We just got hit by enemy planes—I shot down one of them . . . looks like a new-type to me."

The grader on the tank then awaited the tank commander's subsequent action and solution. The latter ordered the "bog" to dismount and search the plane for documents. While he investigated, the tank commander reported the incident to higher headquarters.

*Approved Solution:* The tank commander should have reported the location of the crash to the next higher headquarters, searched the crash for documents or living persons, and indicated any significant findings.

#### *Problem #2, Situation and Course of Action:*

The tank commander told the driver, "MOVE OUT." As the tank lurched over the hill and started to turn right, an enemy tank about 300

yards away fired a round of 90mm shot for a near-miss. The tank commander saw the flash, but before his fire command was finished, the tank was rocked by another nearby explosion simulating the strike of the enemy cannon. Both tanks exchanged fire from their Co-Ax Mg's and main gun. The tank commander continued his fire command, "GUNNER—SHOT—300—TRAVERSE LEFT—STEADY—ON—TANK—FIRE!" The grader told the commander the round landed to the right of the aggressor tank. He then shouted, "DOUBTFUL—LEFT—20—FIRE!" Direct hit! He again called higher headquarters and reported his actions.

The commander's actions were checked by the grader as follows:

- a. Decision—Did he act quickly, slowly, or very slowly?
- b. Estimate—Was his tank prepared to meet the enemy upon cresting the hill?
- c. Fire Command—Was his ammo correct, range reasonable, adjustment correct?
- d. Mission—Was he intent on destruction of the enemy, and did he get his first shot off within forty seconds after being fired on?
- e. Report—Did he call higher headquarters?
- f. Security—Did he fire while moving, and did he move to a new position to fire his second shot?

#### *Problem #3. Situation and Course of Action:*

As the tank moved out, a broken directional sign at a road intersection presented a new problem for the tank commander. Which way to the objective? The commander stopped the tank, looked to both flanks, and seeing no signs of an aggressor ambush, ordered his bog to dismount and check the signpost for direction. The tank commander asked, "What does it say?" The bog answered, "TURN LEFT." After referring to his map, the tank commander decided to move out and take the left road. He again called higher headquarters to report his actions.

*Approved Solution:* Quickness in decision. Did the tank commander consider that the signpost might be turned around, and did he refer to a map?

NOTE: After the third problem, the grader rotated tank commanders.





U. S. Army

Accuracy and speed of fire commands are checked by a commissioned officer.

#### *Problems 4&5 Situation and Course of Action:*

As the tank lumbered forward, simulated 90mm shot landed a few yards to the right. Seconds later, another simulated round showered mud, debris, and gravel to the left of the tank. The tank commander yelled excitedly into the lip microphone, "DRIVER HALT"; "TRAVERSE LEFT." The tank's big 90mm cannon began swinging to the left like some monster's tentacle to destroy the aggressor tank on the next ridge, about 300 yards away. The tank commander quickly fired three rounds at the aggressor. His last two shots were perfect—right in there for the kill. He reported results to higher headquarters and moved on toward the village. By this time, however, the tank was running low on ammunition. The commander also knew his men were hungry. As he continued to the next situation, an abandoned supply dump gave promise, and he halted the tank. Acting quickly, he dismounted the "bog" after assigning gun protection for him. The "bog" advanced cautiously and checked the dump. As he came back, the tank commander replied, "OK! MOUNT!" As soon as the "bog" was aboard and tank "buttoned up," he ordered the gunner to destroy the dump with his main gun.

*Approved Solution:* The Tank Commander's actions were again evaluated according to the check sheet used on Problem #1. In problem #5, the Tank Commander should examine the supply dump and discover ammo. In addition, he should watch for AP mines and ambush.

#### *Problem #6. Situation and Action Taken:*

Logs across the road. A road block, what else? A nervous aggressor machine gunner opened fire from a dug-in position a few yards to the front. The tank's turret traversed to face it, and the gunner rapidly fired his .30 cal. After a complete search of the area with fire, the commander gave his gunner orders to blast the mines with the main gun.

*Approved Solution:* This time the commander should come to a halt, search the adjacent area by fire, and report the delay to higher headquarters. He should then destroy or cut a path through the mine field with fire from the main gun, or remove mines by hand, cautioning the "bog" to watch for AP mines.

#### *Problem #7. Situation and Action Taken:*

As the tank moved forward, its profile resembled that of an English bull-

dog. The horizon, a hundred yards ahead, was hardly visible. It was ominously quiet as the tanks moved up to the crest of the hill—the kind of uncertain quietness that enables a man to hear a mosquito buzzing at 600 yards distance. The tank commander shouted, "DRIVER, HALT!" Suddenly he spotted three men approaching with their hands high over their heads. Two were dressed as aggressors, the third as a civilian. One man was carrying a white flag. The commander ordered his gunner to cover the prisoners and at the same time had the "bog" dismount and search them. The search revealed a hidden hand grenade.

*Approved Solution:* Commander should give orders to have the enemy come forward without arms. He should take practical security precautions, such as alerting the crew. Prisoners should not be allowed to get too close to the tank, the grenade should be discovered, and the capture should be reported to higher headquarters.

#### *Problem #8. Situation and Course of Action:*

As the big "47" moved on, the tank commander noticed a sign pointing toward an enemy bunker. Approaching the CP, he ordered his "bog" to dismount again and search for documents. As the "bog" stepped to the ground, he was fired upon by a machine gun from the bunker.

*Approved Solution:* Before getting too close to the enemy bunker, the tank commander should fire the main gun into the CP and search the adjacent area with machine gun fire. Action should also be reported to higher headquarters.

#### *Problem #9. Situation and Course of Action:*

"MOVE OUT," the tank commander ordered. The tank's cleated track gripped the muddy terrain and inched up the hill. In its path, about 50 yards to the right front, was a heavily fortified area blockaded by dragon's teeth and barbed wire entanglements. A friendly trooper approached and presented a new problem to the commander. He halted the tank and told the commander that the fortified area was manned by enemy infantrymen supported by AT



guns, and pointed out the positions to him. Also he stated that he had one squad of infantrymen and a section of engineers pinned down in the draw by enemy fire. After studying the situation, the commander made a reconnaissance of the area, and requested artillery fire on enemy positions. As the tank advanced, it took targets of opportunity under fire from hull defilade. After that, the commander ordered the engineers to breach a path through the dragon's teeth and mine fields. The task force was then ordered to attack as a Tank-Infantry Team.

*Approved Solution:* WP shells should be requested to screen the attack from enemy pillboxes. The tank commander may utilize an air strike to aid in destroying the dragon's teeth. He should also accept the infantry and engineer support.

*Problem #10. Situation and Course of Action:*

The grader rotated the crew again. Continuing toward the village, the new tank commander spotted the crew of a disabled friendly tank. The friendly tank commander stopped the tank, stated that his radio was out, and that they were stuck and needed assistance. The tank commander, remembering his mission, answered, "I can't help, but I will report the situation to higher headquarters." Immediately, he ordered the driver to move on toward the village.

*Approved Solution:* Commander should not become involved at this point since this would delay the mission. He should report the incident to higher headquarters, request aid, and move on.

*Problem #11. Situation and Course of Action:*

The next problem was the village. As the tank crept cautiously over the hill, the tank commander saw the aggressors scramble to their well-prepared positions in the town ahead. A friendly infantry sergeant signalled the tank to halt, and informed the tank commander that his two squads of infantrymen were pinned down by aggressor fire from the village. Together, on signal from the tank commander, the tank-infantry team assaulted the village. The assault overran the village and the task force regrouped on the opposite side.

*Approved Solution:* He should insure coordination between tank and infantry team. The tank commander should employ tracers and WP for an incendiary effect. He should engage any towers or high buildings which might conceal observers. Pertinent information must be reported.

*Problem #12. Situation and Course of Action:*

As the tank left the village en route to its assembly area, an aggressor outpost pulled a "daisy chain" in front of the tank. The commander quickly stopped the tank and directed the "co-ax" machine gun on the position. After a quick visual reconnaissance, he reorganized for a possible counter-attack. As soon as he was in position, he reported his actions.

*Approved Solution:* Speed in decisions is the key to this problem. Did he decide to stop or by-pass the mines? Did he consider a possible ambush? Did he prepare for an enemy counterattack?

As the last member of the high score crew left the platform, my thoughts returned to the presentation of diplomas to the remaining members of Class #299.

### Reflections

As the next man was presented to

the General to receive his diploma, I saw in him an alert, polished, confident soldier . . . the end product of our production line leaders. His countenance verified to me the predictions of the two officers of the Mental Hygiene Consultation Service, who instituted a study at the battalion in September, 1953. This study was designed to explore the usefulness of two psychological techniques in the prediction of success at Leaders' Course, but had no effect upon the student's standing in the course. Although the study did not affect the student's standing, the information was permanently recorded for future psychological study. One instrument for such prediction was the Minnesota Multiphasic Personality Inventory. The other, in many respects similar to the Buddy Rating Technique, was a sociometric analysis of small group interaction. Although it is too early for any final conclusions to be drawn, trends in the analysis indicated the Minnesota Test is valuable in detecting psychologically mal-adjusted soldiers. The sociometric technique has considerable merit in identifying the potentially superior students in any given class of leader candidates. It seems quite probable that considerable savings in training may be effected if a commander has



U. S. Army

Hidden enemy fire on unsuspecting tank commanded by a leader school student.





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Speed in decisions is the key to this tank-infantry enemy attack problem.

the power to select or reject students on the basis of their performance on these psychological tests.

The flash of another bulb signified the capture of this scene of the last graduating ceremony of the Armored Leaders' Course. As I awaited the parade of the remaining students to receive their diplomas, I wondered what had been the guiding principles that had made this leadership course a successful experiment. Should I be required to re-establish a similar course in the future, how would I blend the ingredients? What are they or what should they be? First, we must have raw materials meeting the general specifications as set forth in SR 615-205-2. As a supplement, we should consider some extrinsic reward for successfully completing the course. In our modern day "two-year Army," I feel that success must come early in a young man's career. This is of the essence to the young soldier and potential leader. If he does not acquire some small degree of recognition during the first six months of his service, he may feel that he is a failure and might lose interest in the service. As he matures, the time factor becomes less important.

Secondly, we must have select facilities and a stabilized cadre who will serve as models and examples to these

young potential leaders.

We must be conscious that this course is not a conveyor belt in the strict mechanical sense. The course must be individualized in order to realize the fullest result from the environmental factor in human growth.

Before coming to the graduation, I reviewed briefly some of the comment sheets of former students who had graduated from the course. It has been a great source of satisfaction to the command to find that the vast majority of those students who have gone before have stated that they consider their experience here at Leaders' Course to be very beneficial to them personally. I believe the majority of them finally realized that slipshod work may result in a weak character and low efficiency. A strong character, beyond reproach, develops pride, self-confidence, efficiency and success.

Here is what one student said: "This school serves to show men, early in their service careers, good habits and high standards of appearance and military bearing. With expanded opportunities like the Armored Leaders' Course, the Army has produced and will continue to produce potential noncoms well versed in basic techniques. Leaders with highly exacting standards serve well in the training

of future United States troops. I am proud to have been a part of this program."

One junior officer instructor stated that: "The major accomplishment of the school in the eyes of the Army and the country should be judged not only on the degree of military proficiency with which each man leaves the unit, but also on the degree to which his body and soul have been conditioned toward the all-important basic attribute of a good leader, *Character*."

Another junior officer remarked: "It offers the student advanced study in subjects introduced in basic training. He receives instructions in leadership and training methods which give him the basic understanding and knowledge to equip him as a small unit leader. The course *sells the student on the Army!* By being conscious of correct and accepted principles, he can recognize violations and emulate good examples. The student develops confidence in himself."

If we have been successful in accomplishing a sound approach to high standards of performance, how to instruct others, how to make these young men leaders with the ability to take the initiative and make decisions, then we have accomplished our mission. What is also important to these men, we have developed in them attributes which will be of great benefit whatever their walk of life may be. By adding the Formal Guard Mounts, Retreat Parades, and Drill Competition, we were able to improve the overall appearance, pride, and *esprit de corps*.

They must realize that we have shown them a means of attacking the job of getting ahead. Their advantage lies in the fact that they have sound fundamentals—self-development is still their only means to advancement.

Despite the fact that we in the United States have the highest level of formal education in the world, we are aware that basic soldiers can't learn how to effectively employ a quarter of a million dollar piece of equipment with only a few trips down the road and out to the bivouac area. They cannot be expected to produce the best results by the trial and error method of learning. We who train these young men must be conscious of the fact that the tank leader requires knowledge of sound principles



of leadership, of the machine, methods of employment, together with the experience and considered judgment of our best military trainers, or we will not rise above mediocrity in our training.

The task then has been to satisfy the needs of Armor by producing highly motivated individuals, capable of operating and directing a tank against the enemy in the most efficient way. Combat commanders from Korea state that most leaders' course graduates were more productive in combat than their counterparts without the benefit of leadership training. The late Knute Rockne once said, "There is no reward for the loser." Those who underwent the rigors and training of the Leaders' Course were much more qualified to reap the rewards of success on the field of battle. In addition, they have become imbued with the "spirit of the offensive" and the *"esprit de corps"* of Armor, the ground arm of decision. I feel that the American soldier will advance step by step, surely and unhesitatingly, to take his place in the role of leadership of our Army if he is given an opportunity. In order to realize his responsibility, he must be exposed to a high state of community living, high standards of personal appearance, an appeal to his pride, a small degree of success, and recognition early in his military service. From these conditions the young men become inspired to be prepared to take the helm in an emergency. It might be said that the leadership course existed for those individuals with curiosity, ambition, and desire for self-improvement. The Armored Leadership Course did not necessarily follow the national culture pattern which expects its young men to go to schools of higher education in order to achieve certain advancement during their military service. It never has been a social, economic or political hurdle to become a noncommissioned officer if the individual did not attend such a course. It is a matter of controversy that such an obstacle to promotion would materially raise the standards and proficiency of the Army. As we look back, it certainly seems desirable to have such a course to provide a standard of performance. This school provided a proving ground and served as an inspiration to potential NCO's. During periods of its existence, vari-



Louisville Courier Journal

Here the student commander is graded on his reactions to an enemy ambush.

ous commanders have required army officer candidates to attend the course before they were sent to OCS. Having been Chief of the Methods of Instruction Committee at the Ground General School, Fort Riley, Kansas, I observed many early leadership failures in OCS which probably could have been detected if they had been properly screened before. The leaders' course provided such a screening board.

I do not necessarily mean to turn back the educational clock as it applies to the leaders' course. I am certain not many people would want to, and no one could actually do it. Rather, I have set forth this document as testimony, while the lifeblood is still hot, as a guide to future schools of this kind, should we find it necessary to expand Armor on short notice. Armored Leaders are hard to come by; training the tank commander and his crew can be likened to training a bomber crew. The tank of today is an expensive and complicated piece of equipment, and leadership for such a tank crew is also a great problem. Under the new "packet" system, there is just as great a demand for high caliber leaders as before. Their development is now the responsibility of the Packet Training Battalion Commander.

We must not allow ourselves to place too much emphasis on mechanical things at the expense of training the leader. It takes twenty years to make a man, perhaps as many to develop a leader, but only a few days to build a tank!

If those leaders are to be effective in the short time they are available, we must give them a set of principles and rules of thumb, or patterns of behavior, upon which to base their future actions should they have to meet enemy armor, on short notice. Certain aspects of the course should be incorporated into the packet training of these new tank leaders. If we can improve the accuracy of gunnery so that we can get 80% to 90% kills on the first round, we can proportionately reduce the number of tanks needed. A war tomorrow against our potential enemy then must stress accuracy and economy of force. We will not have the numbers to match the enemy. We must therefore realize that our success will not depend upon the machines but upon the skill of the men who operate them.

With the presenting of the diploma to the last man the Armored Leadership Course was now officially closed and class #299 had been graduated—May we be able to look back and say, "Well done."



Most of the articles in this issue originated at Fort Hood, Texas. The article on the "Armored Division Trains" is well overdue. To inform our readers of the functions and mission of Division Trains has long been a must. The *Sum & Substance* features the 701st Armored Infantry Battalion of the 1st Armored Division. This was also a requirement in that we desired to follow through on the troop testing of the M59. The articles "Operation Congress," "Revolution in Armored Education," and "A Division is Reborn" are all timely subjects for this issue. By reading "Operation Congress" one will get an insight into what members of the House Armed Services Committee are saying about our Army and our Arm. "Revolution in Armored Education" informs us how The Armored School Advanced Class had the opportunity to put into practice what they learned in the classroom. "A Division is Reborn" shows how the famous 4th Armored Division was reactivated. Hence the spotlight is focused pretty brightly on Fort Hood.

On second thought, why shouldn't it be? After all, the eyes of the Army, Armor, and all those interested in mobile warfare are looking to Hood to come up with many significant answers—now that we have two Armored Divisions stationed there. We also feel that those in the responsible positions at Fort Hood should come up with pertinent questions concerning Armor, its mobility, its logistical support, its firepower. How can we advance these qualities? How can we retain that mobility already attained? Our new family of tanks, although not perfect, certainly give us a degree of mobility never before reached in American Armor. Likewise, our supporting self-propelled artillery pieces are more mobile. The M59 Armored Personnel Carrier gives our Armored Infantrymen a protective vehicle capable of accompanying our tanks anywhere.



## *of Articles . . . . and Chain Links*

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One of the biggest problems facing us is to keep this mobile team at the zenith of its present mobile potential. In other words, everything required to support this theory must be accomplished: Supplies must be readily available. Communications must be at their peak efficiency in order to control rapid mass movement of large Armor commands. Maintenance must be easily accessible to support movements of this type. All supporting units, of necessity, have vehicles capable of cross-country mobility equal to that of the combat vehicles. Engineer supporting units must be capable of removing obstacles to Armor's mobility more speedily than ever before if it is to retain its proper mobile standards. Although there has been much discussion of the problem, Armor has not as yet presented this matter in such a way as to insure this maximum in efficiency.

It is still controlled by the speed of the slowest element and is roadbound by the non-tracklaying vehicles which are part of the command. When an armored unit is stopped, due to roadblocks, mines or lack of bridges, it is governed by the speed with which the Engineers can overcome these obstacles. To improve on these facilities is a joint challenge to both Engineer and Armor personnel and it is urged that steps be taken now to correct these deficiencies. As long as the speed of mobile units is reduced to the tempo of the foot soldier sapping for mines, they will not realize the fullest potential for which they (the mobile units) were created. That mine removal must be speeded up is a challenge to both Armor and Engineer alike.

This is not the only link in the chain that needs strengthening. This is given as an example. Anything that tends to destroy mobility must be overcome. At the same time continuous research and development must be maintained to improve cross-country vehicles.



# Sum & Substance

A regular feature in *ARMOR*, where you may express your views in approximately 500 choice words—the effective medium between the letter and the article. This section is open to all on any subject within the bounds of propriety. Name and address must accompany all submissions. Name will be withheld upon request. No pseudonyms.

In the March-April issue of *ARMOR* we carried the initial story of the M59 Armored Personnel Carrier. Because of the importance of this vehicle to the Armored Division's mobility we decided to follow up and get the reactions of the actual users of the M59. The 701st Armored Infantry Battalion, 1st Armored Division, was issued these vehicles for troop test during operation "Spearhead." Thus, we turn to them to get the first hand reports of this vehicle by those persons who ride, fight, drive, swim, maintain and command them.—THE EDITOR.

The writer of the following article was commissioned from ROTC at the University of Illinois. During World War II he served in Europe with the 23rd Cavalry Reconnaissance Squadron. Since World War II, he has served with the 63rd Tank Battalion, 1st Infantry Division in Germany, and spent three years on the Staff and Faculty of The Armored School. He joined the 1st Armored Division in January 1954, and assumed command of the 701st Armored Infantry Battalion on 3 March, 1954.

The 701st Armored Infantry Battalion received, between 26 March and 15 April this year, 85 new Armored Personnel Carriers and the necessary on vehicle material (OVM equipment). The first carrier arrived just five days prior to a scheduled one week 1st Armored Division maneuver in April and the last was issued 18 days prior to Exercise "Spearhead" (3-19 May 1954). This allowed little time to train drivers, crews and mechanics.

Our drivers were not experts at handling the M59, but they did have a working knowledge of the vehicle by the time we moved to the field on 3 May for "Spearhead."

The first real test of the vehicle came on the second night of the problem when Combat Command B, to which the 701st was attached, moved from an initial assembly area for a distance of 15 miles to a forward assembly area. The move took four hours over tank trails, creek fords, steep grades, and at times over rugged terrain with practically no trails at all. This blackout march showed that

our drivers lacked know-how with this new vehicle. When lost in a cloud of dust, they were reluctant to step on the gas at the proper time, and the column was disrupted on several occasions. The drivers were accustomed to more power and pickup from the old vehicles; the lower power of the M59 proved to be one of the main handicaps.

All photos U.S. Army



Lt. Col. Howard P. Schaudt

We do not mean to imply that the M59 is too underpowered to do the job, but the drivers had to learn to handle the power available, to operate under conditions such as were faced that night and at other times during the exercise.

This night march did show a definite advantage of the M59 over the older models—it is extremely quiet. The true noise is only a slight high frequency whine which is hardly audible.

We arrived at the forward assembly area near daybreak and moved out shortly thereafter to the attack posi-

tion for an attack scheduled for BMNT. This left the drivers only a moment to sleep. The actions of the drivers that day indicated to us that driver fatigue on the M59 is at a minimum.

During the course of "Spearhead," certain deficiencies became apparent. Although the vehicle rides easier, there is nothing for the crew to hang on to. There are no seat backs or middle seats. The vehicle commander's seat needs a great range of vertical adjustment. Light mounts and guards proved to be of flimsy construction. Blackout light brackets apparently permit too much vibration, since we had a high rate of burned-out lights. There were other minor deficiencies that can be easily corrected.

Several days of constant rain during the operation gave us a chance to operate in deep mud. The M59 did bog down after reaching a maximum speed of only three to five miles per hour. Apparently the reasons for this are the lower power and the mud packing under the sponsons behind the rather tightly fitting shrouds.

Two solutions to this problem have been offered. One is a scraper to remove the mud during movement, and the other is a folding or easily removable shroud which could be put out of the way when the vehicle is to be operated over muddy terrain. Permanent removal of the shrouds is not desirable since the ability to move in water would be adversely affected.

Another question for consideration is that of stowage. We found this to be a problem with the M59 for all equipment. Nothing as yet has been devised for the lashing or securing of TO&E equipment inside the vehicle.



We feel that a workable solution to this problem would be "packaged modification kits" (i.e. rifle squad modification kits, mortar squad modification kits, etc.). These modification kits could be made so that they could be locally installed to insure effective utilization of the vehicles.

One of our missions during "Spearhead" was to effect a river crossing. We found the vehicle to be buoyant, but not truly militarily amphibious, since it could not be used for operating in rough water or for beachhead landings. Of course, it will float, but it requires a certain amount of skill to maneuver in still water. We found that the seals on the rear ramp (troop compartment) worked well and did not leak.

The state of driver training and continual driver practice is vitally important when entering the water. The driver, when going into a steep-banked stream, must ease the vehicle in to avoid immediately swamping the APC. The banks need not be of certain characteristics so long as the driver knows how to properly enter the water.

The operations, intelligence, and communications center for the battalion headquarters in the field is set up in a central CP consisting of two APC's. These are parked back to back with sufficient distance between them to permit the lowering of the ramps. A large piece of canvas is placed over the opening making a tunnel between the two vehicles. In this manner, full utilization of the two vehicles plus the area between them is secured.

The two APC's used for this CP arrangement are those assigned to the S3, S2, and to the S1, Commo Sections. The S1 works out of a tent when not moving. The advantage of this arrangement is that the CP may be moved on exceptionally short notice. The area for operations of the CP is limited, but this arrangement has worked better than any other tried by the battalion.

During several days of the problem we were allowed to use only our armored vehicles. This forced us to use our M59's for purposes normally performed by wheeled vehicles. We found, during this phase, that the APC is a highly satisfactory vehicle for the evacuation of casualties, the feeding of front line troops, and the

resupply of POL. A tracked vehicle on a casualty evacuation mission can evacuate casualties from areas a wheeled vehicle could not possibly reach. Evacuation is accelerated since litter bearers do not have to carry the wounded over great distances. Also, needless to say, the armor protection afforded to casualties as well as the evacuating detail is a great comfort.

I feel that the M59 has simplicity of design and possesses all-around utility. It does not contain numerous costly, "nice-to-have" gadgets which do not add to its combat utilization. It is a vehicle highly capable of performing its mission as an Armored Personnel Carrier, has added its amphibious characteristics, and yet costs less than half the cost of its predecessor, the M75.

I believe that the M59, in the hands of experienced personnel, is a valuable piece of fighting equipment.

LT. COL. HOWARD P. SCHAUDT

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1st Lt. Newton Josserand

*The writer of the following article accepted a direct commission in January 1952. During World War II he served with the 2d Infantry Division. Since the war he has served with the 11th Airborne Division in the Far East and with the 1st Infantry Division in Germany. He was assigned to the 1st Armored Division in July 1952, and assumed duties as Motor Officer of the 701st Armored Infantry Battalion on 11 August 1952.*

During Exercise "Spearhead" I found that far less maintenance was required on the M59 than on any

other Personnel Carrier with which I am familiar. The maintenance performed in the field was of a minor nature, consisting mostly of adjustments of linkage and synchronization of engines. Of a total of seven or eight vehicles turned in to Battalion Maintenance for repair, five were evacuated for Ordnance repairs.

The mechanics prefer working on the M59 because there is easy access to the engine compartments, and the engines have many parts in common with other military vehicles (i.e. the 2½ ton truck). Our mechanics also find the maintenance on the M59 easier because the ramp in the rear of the vehicle will lower to the ground, and the hatches on the top can be opened to provide both light and air while maintenance is being performed. However, the engines are mounted so close to the hull that some parts are hard to get to for maintenance purposes. In spite of the minor difficulties we have had with the M59, we still prefer it to any other Armored Personnel Carrier.

The M59, we found, is easy to evacuate with a tank recovery vehicle. However, the towbar must be sufficiently long to prevent the boom on the recovery vehicle from damaging the trim vane on the M59 while crossing a ditch.

We've had no trouble with the suspension system on this vehicle. That is something we really appreciate. I am sure that the older models with which we are familiar would have given us a great deal of suspension trouble in an operation like "Spearhead."

We have never thrown a track on one of the new vehicles. Another good feature of this new APC is that the bumper spring brackets are welded to the hull instead of being bolted as they are on the M75. This prevents a lot of trouble.

The track pads seem to be of inferior quality, with the rubber coming loose very easily from the track. This shortcoming is not restricted to the M59, as we had similar problems with other Armored Personnel Carriers.

This vehicle is also capable of operating on water after a few checks are made. Care must be taken with the rear ramp seals, making sure the seals are not cut and that no sticks or twigs are left between the seal and



the hull when the ramp is raised. Drain plugs must be checked to see that they are properly in place. After making sure of these points, the M59 is ready to be eased into the water.

After the vehicle has operated on water, checks must be made to insure that all seepage water is pumped out and that the suspension system has not been penetrated around any of the seals.

Exercise "Spearhead" should not be taken as showing the complete picture of the Armored Infantry Battalion's maintenance problem. It should be remembered that these were all new vehicles which had less than 500 miles of operation. However, we are sure that maintenance on the M59 will be much easier than on the older M75.

We are now continuing the test of the M59, by putting at least 1500 more miles on the vehicles. Of course, results of these tests will not be forthcoming for several months.

At present the vehicles are using approximately 1.2 gallons of gas per mile. This rate of consumption could change as the vehicles increase their miles of operation.

1ST LT. NEWTON JOSSERAND

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*The writer of the following article was commissioned in 1950 from New Mexico Military Institute. He attended the Airborne School at Fort Benning in 1950, and the Associate Infantry Company Officers' Course there in 1952. He has been with the 701st Armored Infantry Battalion since March 1953, and assumed command of A Company on 8 March 1954.*

During Exercise "Spearhead," A Company of the 701st Armored Infantry Battalion participated in its first river crossing with the floatable M59 Armored Personnel Carrier. The decision to attempt an assault across the Cowhouse Creek on the Fort Hood reservation using the carrier was greeted with eagerness by everyone concerned. No one, however, knew exactly what to expect.

The first problem arose in finding suitable launching and landing sites



1st Lt. David L. di Lorenzo

on the Cowhouse for the crossing, as in most places the banks of the Creek have sudden, deep drops.

In this respect, the M59 is somewhat of a "Prima Donna" when it comes to water operations; it is not able to "dive" into the water, and must have more or less suitable approaches for entering and leaving the water.

In our experiences, when suitable natural fords are not available to launch assaults in company or larger force, the crossing would be delayed until approaches could be constructed by engineers. Insofar as this particular

operation is concerned there was only one launching site, consequently the crossing was channelized.

Whenever the carriers are operated in water, certain precautions must be taken; the bilge must be emptied of accumulated water and hatches and ramps must be securely closed. Once under way in water, the carrier is propelled and steered by track motions, the maximum speed is approximately twelve miles per hour on the speedometer, but actually 4.3 nautical miles per hour. In all cases, it is advisable to avoid sudden deceleration which could cause the APC to pitch forward and swamp.

The tactical significance of our assault caught the Aggressor by complete surprise and made possible the successful establishment of a beachhead some 250 yards in depth.

Although the M59 was produced at considerably less expense than its predecessor, the M75, I believe its overall performance will be superior to the old type after recommended modifications are adopted. The carrier does not have as much power as the M75, and does not compare with the M75 in maneuverability or speed.

It also lacks arms racks and storage space for individual equipment and ammunition. This presented a problem, for although individual weapons



Testing water capabilities is a new experience for these Armored Infantrymen.

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were in the hands of their users while riding in the APC, it was necessary to secure such crew-served weapons as the 81mm mortar and bazooka. There was much concern over riding inside with the base plate and tube of a mortar floating free. We solved this problem with some success by securing the mortar parts with quick-release straps and tie-down rings. These modifications, I believe, could be made at post level so that the using organization could determine what modifications are needed on each carrier.

The marked advantages of the M59 are numerous. It is easier to maintain than the M75 because the engines are more accessible. It is manufactured at less than half the cost of the M75. The engines run smoother and there is less track noise. With the new suspension system (the same one that is on the M41) the new APC rides smoother. Consequently, the crew takes less of a beating and so does the equipment.

1ST LT DAVID L. DI LORENZO

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*The writer of the following article graduated from Northwestern University in 1952. He was commissioned as a 2d Lt in the Infantry 1 September 1953 after graduating from OCS. He has been a member of the 1st Armored Division since September 1953 and assumed command of B Company, 701st Armored Infantry Battalion on 7 April 1954.*

Possibly more than any other company commander in the the 701st Armored Infantry Battalion, I have had a chance to see and use the M59, the Army's new Armored Personnel Carrier. My experience with this vehicle dates back to mid-April of this year, when I was informed I would use them in a demonstration of the Tank Infantry Combat Course (TICC).

The new M59's were issued after one day's practice on the course had been completed. My chief cause for concern lay in the fact that my drivers were not familiar with the new vehicle. On the rugged TICC course the drivers can either make or break you. The Company Motor Officer immediately gave instruction on the important "do's and don't's" of driving the M59, and then we prepared for

"practical work." We put on lights and practiced prior to running the TICC. After a few runs on the TICC, we at first determined that the M59 was harder for the drivers to handle. However, I believe this was due to the drivers' inexperience with the vehicle.

On the other hand, the Infantrymen on the inside of the vehicle found the ride smoother than the older M75, and they were able to make a quicker exit in the assault position through the wide rear-ramp doors.

We used the vehicles to good effect during the period 14-17 April when we supported the Advanced Class of The Armored School during the field training on the TICC.

Exercise "Spearhead" then loomed ominously before us. We had about two weeks to make preparations, and much work to do in addition to training operators and maintenance personnel. One of the most important tasks to be accomplished was the establishment of a loading and stowage plan for the M59.

Our plans showed that certain modifications in the M59 would be necessary if arms and ammunition were to be stored correctly.

Insofar as employment of the 81mm mortar is concerned the ideal solution would be to have a carrier which would permit the 81mm to be fired without dismounting. However, with the M59, getting the mortars in action requires just a few seconds. Thus, I see two advantages. They are:

- 1 The overhead protection from airburst artillery, and
- 2 The ease in dismounting the mortar through the ramp doors.



2d Lt. John L. Wozniak

The chief difficulty which must be corrected is a lack of ammunition bins for the 81mm shells.

I was extremely satisfied with the M59 on Exercise "Spearhead" until the rains came. On 10 May, the 701st was in defensive positions atop Manning Mountain on the Fort Hood Reservation. All day, heavy rains soaked into the dusty ground, making a sea of mud. After the evening meal we were ordered to withdraw to Corps Reserve. The mud slowed us down tremendously; about three MPH in low range was all we could manage. On the tank trail, some of the mud was shaken loose, but the desired speed of 12MPH could never be attained.

We began our movement back to camp on 18 May. B Company returned with the same number of M59's with which we began the exercise some 16 days before. During "Spearhead" there were six actual vehicle casualties, with only two of those out for more than a day. The other four were placed back in operation without having to be evacuated.

As I look in retrospect at the performance of the M59, I reach the conclusion that I like the vehicle. One of its best features is the rear ramp which permits quick entry or exit, while its main weakness lies in its seeming lack of power while operating in the mud.

The M59 is not perfect, it needs modification—but it does possess more of what we, in the Armored Infantry, desire in an APC—desires which could not be fulfilled with the older models of the Armored Personnel Carrier.

2D LT JOHN L. WOZNIAK

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*The writer of the following article accepted a direct commission in 1945 in Germany. During World War II he served in Europe with the 45th Infantry Division. Subsequent to the war he served in the 7th Infantry Division in Korea. He joined the 1st Armored Division in May, 1953, and assumed command of C Company, 701st Armored Infantry Battalion, on 13 September, 1953.*

Ulterior motives enter my mind when I think of the testing of the



new Armored Personnel Carrier, the M59. It has been quite a morale booster in the company, something like getting a new car. The problem of getting the men to handle the M59 on short notice was easily overcome by their enthusiasm for the new design.

We like this new APC. Some of the obvious modifications from the old vehicle were welcomed, such as the large rear drop ramp, no middle seat, and arrangement of the driver, commander, and radio compartment.

The new positioning of the driver and the commander certainly helps out should inter-communications break down. Also, the driver does not have to button up now when the commander is firing the 50 caliber. Then too, the extreme quietness of the motors eases conversation with one another.

Of course, we found some things that we would like to have changed or added. We believe there is a need for storage space or a tie-down device for individual equipment and larger weapons such as the light machine gun, bazooka, mortar, and the ammunition.

To say that the vehicle has been completely accepted as being without flaws by our personnel would be untrue. We have found many minor characteristics that are annoying to its occupants. Some of these are: while the vehicle is able to float and is completely water tight from the bottom, all hatches along the top leak to the extent that it is difficult to keep anything dry in them during wet weather; there is nothing for the occupants to hang on to while traveling in the vehicle with a normal combat load; the platform for the vehicle commander and driver cannot be raised high enough to accommodate a short man; the bench type seats are too narrow to allow men who are fully combat loaded to sit comfortably. These objections are a few that have been noticed, though all of them could be remedied by ordnance modification, and should not be too difficult to correct.

As far as we are concerned, the biggest attraction of Exercise "Spearhead" came when we swam Cowhouse Creek in the M59. Frankly, we were a little skeptical, since none of our drivers had ever maneuvered the



1st Lt. Juan P. Trujillo

vehicle in water before. I felt the men in the squads were a little concerned.

Prior to the crossing, we checked the doors for leaks, made thorough reconnaissance of the river bank, found a suitable spot for the crossing, and moved out early the next morning. As we moved toward the creek and the high ground on the other side where the aggressor was strongly entrenched, I recalled other water operations in which I had participated in Italy and Europe. I remembered, as a young platoon sergeant in World War II, the terrible feeling I got

from seeing tracer bullets coming at me and how we would shut our eyes and hide in our assault craft with so little protection as we made our crossing. I thought how lucky we would have been to have had the M59 at that time, and how many lives would have been saved.

The crossing of Cowhouse Creek was certainly successful for my team. We caught the aggressor by surprise, and before he could react, the team was across, deployed on the river banks and moving to take the high ground. Eventually, the rest of the battalion crossed without a mishap.

1st Lt JUAN P. TRUJILLO

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*The writer of the following article was commissioned from ROTC at the University of Arkansas in 1950. During World War II he served in the Pacific Theater with the 2d Marine Division. He served in Korea with the 7th Infantry Regiment of the 3d Division from March 1951 to March 1952. He has been Company Commander of D Company, 701st Armored Infantry Battalion, since 18 December 1953.*

In writing this article, I want it un-



The new type ramp allows the infantry squad to dismount with greater speed.





The inside of one of the two M59 APC's used at the 701st AIB Command Post.

derstood that its purpose is not to discuss the mechanical or tactical desirability of this vehicle in relation to any other vehicle in existence. This is meant to discuss the observations made by myself as the Commander of an Armored Infantry Company who has been given the mission of troop-testing the new M59 Armored Personnel Carrier, and observations made by members of my company.

As I understand it, "The usefulness of an implement of war can be measured by the confidence that it can instill in its users by its performance in any given set of circumstances." This, I believe, is true whether it is a revolutionary invention, an old established piece of equipment, or a different version of an item of equipment already in use. The latter is true of the M59; consequently, selling the advantages of the M59 over the M75 was the first major effort I made, as a Company Commander, after receiving the new Armored Personnel Carrier.

It was readily obvious that the M75 enjoyed numerous advantages over the halftracks which it replaced in the summer of 1952. However, the advantages of the M59 over the M75 are not nearly as apparent, so it was necessary to conduct instruction so that as many people as possible could

learn as much as possible about the M59 in a very short time.

We approached this by giving instruction on the new APC and then letting performance speak for itself. This was done by a series of schools for drivers, mechanics, maintenance officers, and vehicle commanders. This school was conducted by the battalion motor officer, assisted by a team from the vehicle manufacturer, Food Machinery and Chemical Corporation.

These civilian and military instructors have been a ready source of technical information and have enabled



1st Lt. Lyndel E. Thomas

us to effect the transition between the vehicles quickly and efficiently.

As previously stated, we have had the M59 a very short time. During this time we have conducted a 16-day maneuver where the vehicle was subjected to various weather and terrain conditions. From gently rolling plains to mountainous slopes, from hot, dusty days to days of drenching rain, through dust and sticky mud, the M59 has performed well.

Specifically, here are some basic characteristics that have become apparent to us in this vehicle:

1 Because it does not have as much power as the M75, we at first had trouble marching in convoy over any type of hilly or rolling terrain that required the shifting of gears. With proper control, however, it can march in convoy, with or without tanks, without too much accordion effect.

2 It can move with tanks under combat conditions over any type of terrain.

3 Drivers can be trained to handle it in less time than was required for training with the M75.

4 Maintenance within the unit has improved considerably since we have been equipped with the M59. This may be true simply because of the enthusiasm with which the new vehicle has been greeted, but it is generally agreed by our mechanics that the M59 is an easier vehicle to work on and repair.

For several days during "Spearhead," no wheeled vehicles were allowed to roll, and we depended entirely on the M59. We found that it is better than other vehicles for such administrative purposes as resupplying POL and bringing forward hot food from the kitchens. It was also used frequently for medical evacuation, and we frankly found no disadvantages in the use of the vehicle for any of these purposes. Our TO&E calls for one Armored Utility Vehicle per company, and I believe that it can be utilized to maximum advantage for such purposes as these.

1ST LT LYNDEL E. THOMAS



# A DIVISION IS REBORN

CARDED

by

CAPTAIN CHARLES A. ROGERS

**O**N June 15th, beneath a cool Texas overcast shrouding the parade ground at Fort Hood, some 1,500 spectators stood at solemn attention as the U. S. 4th Armored Division was reactivated.

Presentation of the colors and standards by Lieutenant General I. D. White, Fourth Army Commander, marked the historic moment. It was a return to life for the 4th Armored, which had been dismantled in 1946 upon its return from Europe. Brigadier General John K. Waters, acting Division Commander, officially received the colors.

Perhaps the most prideful participant at the ceremony was Major General Hobart R. Gay, III Corps Commander, who had met and is still executing the thousandfold problem of rebuilding the independent, mobile fighting city.

The 4th Armored came into being in April, 1941. With the passing of the following four years, the Axis paused in the shambles of defeat to regret it. Only two American divisions won division-wide Presidential citations during World War II. The 4th Armored was one of these two divisions so honored. It was Utah Beach, Normandy, 1944, where the 4th Armored first went into action. In the following 230 days it traced an unabating trail of destruction through the enemy strongholds in France, the Rhineland, and Ardennes-Alsace, Eu-

rope. It swept up as many as 8,000 prisoners in a single day and within 26 weeks collected nearly 2,000 decorations. In the enemy's dying attempt at a "Sunday haymaker" in the Ardennes Offensive, the entire 4th Ar-

mored raced 150 miles in 19 hours. They ripped into German forces, extricating the remainder of the "Batling Bastards of Bastogne."

So there was a silent moment of pride at Fort Hood on June 15th. It



Gen. Waters receives the Division Colors from the Fourth Army CG. Maj. Gen. Trapnell has now arrived at Fort Hood and assumed command of the 4th.

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ARMOR—July-August, 1954



was shared alike by the Army and Corps Commanders and their staffs. It was felt by the Post personnel and the 1st Armored Division at Fort Hood who both had been actively participating in the rebuilding of the 4th Armored. For them, the reactivation ceremony was the singular second of gratification for a long, hard job that had its beginning several months earlier. Wary under the strain of seemingly endless weeks wherein lights of the Corps Headquarters building blazed regularly into the Texas midnight, the staffers returned from the parade ground to their offices for there was still much work to be done.

It was in late December of 1953 that a directive from Department of Army reached Fort Hood. The order was to analyze the capability of Fort Hood to accept an additional armored division. At best it was theoretical. A reply was made in early January, 1954. Colonel E. L. Tucker, Post G4, pointed up the major inadequacies: housing, supporting facilities, supply rooms, day rooms, sufficient motor parks to accommodate a division on wheels.

The big plan was unveiled some 1,500 miles to the West two months later. On an early March morning in 1954, 14 staff officers serving with III Corps Headquarters at Fort MacArthur, California, were called individually to the Commanding General's office. It was the Corps Commander's intent to take these officers with him to Fort Hood. What General Gay told each officer was basically the same.

"Headquarters, III Corps has been ordered to Fort Hood," he explained. "There's a triple-mission involved. We will be charged with responsibility for reactivating the 4th Armored Division; the immediate problem of directing Exercise 'Spearhead' which involves the 1st Armored Division already at Fort Hood; and operating a two-division corps with a prime mission of training."

Information from Department of Army on hand at III Corps Headquarters at the moment indicated activation of the 4th Armored on June 15, 1954, as a General Reserve Class III unit at reduced strength. According to plan, D/A would provide the general officers and one-half of all other officers. Provisions for the enlisted

cadre were delegated. D/A further specified that some officers and cadre would arrive at Fort Hood before June 15. A plan for training the cadre during the period June 15 to July 15 was called for along with a plan for a controlled flow of filler personnel into the 4th Armored. Fillers were to arrive during the period July 15 to October 15 at a rate not to exceed 400 per day and not more than 4,000 per month.

On April 11, General Gay arrived at Fort Hood. He assumed command of the Fort, then delved into the concurrent problems of directing Exercise "Spearhead," a 16-day combat field problem, and the reactivation.

"One of the first missions assigned to the III Corps upon its arrival at Fort Hood," General Gay stated, "was to plan for assistance in the activation and filling of the 4th Armored Division. The Corps Staff was very small at the time. However, it had the advantage of much information, advice and assistance from the Post of Fort Hood and from the 1st Armored Division."

Attendance at "Spearhead" by General White allowed numerous conferences between the Army and Corps commanders. It was during this period that general plans for the reactivation were converted into specific tangibles suitable for application of pick and shovel.

In establishing the initial problems of reactivation, General Gay said: "The primary need was to ascertain what the 4th Armored Division's TO&E was to be. There were many ideas on the subject. Fortunately, Major General Paul Adams, G3 Section, Department of Army, paid a short visit to Fort Hood in early May. At that time, a proposed TO&E in detail was presented to General Adams for his consideration. Shortly thereafter, this proposed TO&E was submitted through the Fourth Army to General Adams and was accepted."

With regard to formulating the new TO&E, earliest planning directives available indicated the 4th Armored would be activated at reduced strength. In view of the reduced strength a TO&E was developed along the lines of vertical elimination of entire units, utilizing the savings to bring other units to full strength. Basic reasoning behind the change was to establish a stronger armored

division capable of: (1) engaging in combat operations on relatively short notice; (2) once committed to combat, sustaining that combat for short periods; (3) expansion to full strength without appreciable reduction in combat effectiveness; (4) providing a source of cadre without serious reduction in combat readiness.

Study of the problem yielded the conclusion that full-strength infantry companies were the wise choice. The alternative—to organize a company at 80% strength with an additional 20% loss in leaves, sick and other causes, would have reduced a unit to 60% of its combat strength. This was inadequate for training purposes. The final decision was to activate the 4th Armored Division with four armored infantry battalions of three companies each. Horizontal elimination of certain wire teams in the Signal company allowed a full-strength to other elements that required hard-to-develop skills. This same reasoning was applied in the elimination of one anti-aircraft battery.

Nucleus of the new division was planned to be the 17th Armored Group at Fort Hood with its two attached separate armored battalions. It was to be redesignated and become an organic part of the 4th Armored. According to plan, the 17th Armored Group would initially become a provisional division headquarters prior to the 4th Armored Division's date of activation. It would have the mission of basic planning for the reactivation at the division level.

Other policies established at this time were along the line that service units of the division would be activated and filled first with subsequent activation of the combat elements. The equipment to be issued would be on a minimum basis necessary for housekeeping during training of the cadre. Provision was made that as soon as a unit could maintain equipment, they could draw it. This particularly applied to trucks and other major items. Battalion-sized messes were to be established, and battalions were to be filled one at a time, so far as possible.

It was planned that Post units were to give maximum support. Major items such as cannon were to be cleaned and issued to the 4th Armored in a condition ready for firing.

With conclusion of "Spearhead" on



May 19, III Corps was able to concentrate more fully on the task of reactivating the 4th Armored. Key personnel from Fort Hood were integrated with the skeleton staff and 70 enlisted men from Fort MacArthur—a problem of reactivation and reorganization in itself. Incoming officers and men filled other staff positions. The fact that several senior staff officers earmarked for assignment to III Corps Headquarters were still scattered across the globe necessitated a dearth of “acting” staffers. Under less urgent conditions, this might have created hesitancy; an impending air of temporariness in interpreting policy and willingness to finalize staff decisions. But the urgency of the moment was not unlike combat. There was a job to be done. It wouldn’t wait!

Because the 4th Armored Division had no general officers present for duty by May 20, General Gay directed Brigadier General John P. Daley, III Corps Artillery Commander, to supervise the reception of cadres and assist in implementing the reactivation. In effect, General Daley acted as temporary 4th Armored Division Commander. Moving his office to the building which would house the 4th Armored headquarters, he faced the initial problems.

“There were two major problems at the outset,” General Daley said. “Both with regard to personnel. First, the unscheduled arrival of officers. Second, the unscheduled arrival of fillers. There was no discernible pattern in the dates at which senior officers were scheduled to report.”

Of prime concern was the absence of any of the 4th Armored’s general officers. Brigadier General John K. Waters, Assistant Division Commander, was not to arrive until June 10, 20 days hence; the Division Commander, Major General Thomas J. H. Trappnell, recently returned from Indo China, was delayed in Washington. The Divarty Commander, Brigadier General Ernest V. Holmes, veteran 1st Cavalry Division Chief of Staff in the early days of the Korean conflict, was similarly delayed in the nation’s capital.

“A second major personnel problem,” General Daley explained, “was the fact that no clear statement was made as to when fillers would arrive or as to the status-of-training of the filler personnel. Was the division

## FORMER COMMANDERS



Maj. Gen. H. W. Baird



Maj. Gen. J. S. Wood



Maj. Gen. H. J. Gaffey



General W. M. Hoge



Maj. Gen. F. B. Prickett

faced with training men who had had no training? Did they have 8-week training, 16-week training, or were they pipeline personnel?

This tremendously complicated the problems of the G-3 and subordinate unit commanders. Cadre training was to begin after June 15. Cadre training schedules and training plans for the division had to encompass a wide range. Several alternate training schedules had to be devised. There was no telling which ones would be needed.

“The most important planning lesson,” General Daley pointed out, “was an old one: *Don’t wait for explicit directives from above. Start your planning from the facts at hand. Modify your plans as additional facts become available.* The decision was made that neither the division nor its subordinate units would wait for complete directives from above. Planning was to be initiated promptly with whatever guidance was available. We later learned that to have chosen any other course would have been fatal.”

In order to get property books established, early consideration was given to utilizing the property books of the 1st Armored Division as a guide for and companion organization of the 4th Armored. However after study, the plan was not adopted.

As a result, complete packets of property books were made up. A centralized section was set up under the guidance of teams for the preparation of these property books. This was a vital point and required much care, for if mistakes in property books were made, errors would be difficult to determine and a year or more might be needed for correction. The principle was followed that an organization would not draw organizational property until its property books were in order.

Meanwhile, a second juggling of staff assignments on the Corps level by General Gay was to name Colonel E. R. Powell to the burdensome task of acting Corps Chief of Staff. Mixed in with the multitudinous details of coordinating Corps staff activities and workloads, Colonel Powell selected as a particular project, that of preparing complete brochures of the plans to date. They were to be made available to the key officers of the new division for their guidance during the early days of their assignment to the



4th Armored. This plan was broken down into several sections, each somewhat related. They were: The Activation Ceremony, The Filler Plan, The Building and Installation Assignment Plan, The Logistical Plan for Support of the 4th Armored Division, the activation order, the TO&E, The Reception and Control of the Cadre Plan.

The problem of housing the 4th Armored was critical. Coordinating with the Corps Engineer, two teams—one for each of the projected divisional housing areas at Fort Hood—were dispatched to survey the situation and come up with recommendations. The concept was to divide the rectangular South Fort Hood cantonment area roughly in two; one section for each division. (III Corps and other nondivisional units were dispersed throughout the fringes.) The immediate problem was the fact that the 1st Armored Division, in the logical interest of comfort and morale, had spread themselves throughout the cantonment area.

This necessitated close scrutiny of each square foot of floor space at South Fort Hood. The total space available for troop housing was computed. Evaluations were made of the number and size of motor pools, company and battalion-type motor shops, administrative buildings, latrines, shower, mess, and dayroom facilities. And when the first total evaluation had been completed, the teams were ordered to ready an alternate plan—in the event the proposed TO&E modifications were approved by D/A.

On May 27, the teams presented plans showing that two armored divisions could be housed at Fort Hood on an austerity basis and with regard for unit integrity. The plan allowed for an initial housing of 7,500 troops in addition to those already at Fort Hood. By rehabilitating barracks—the mobilization type that had been converted to family compartments after World War II—it was figured that 1,000 additional housing spaces would become available each month until the entire 4th Armored Division was housed.

Hardstand was short. Tank and reconnaissance units were felt to have the greatest need. As a result, infantry units received no hardstand allotment, save one large classroom-type shop.

A primary concern in accomplishing the necessary rehabilitation and modification to house the 4th Armored was the fact that a major portion of the funds necessary were to come from Fiscal Year 1955 appropriations. Although the principal budget requirement has not been passed by Congress, it is anticipated such funds will be available in mid-September 1954.

### NEW 4th ARMORED CG



**Maj. Gen. THOMAS J. H. TRAPNELL** is a 1927 graduate of the United States Military Academy, where he excelled in athletics. A veteran of the fighting in the Philippines and the fall of Corregidor in the early days of World War II, he was a prisoner of the Japanese for more than three years. Subsequent to the war he commanded the 187th Airborne Regimental Combat Team which fought in Korea. He recently returned from Indo-China where he headed the United States Military Mission. Included among his awards and decorations are the Distinguished Service Cross and the Legion of Merit. He is a Master Parachutist with 93 jumps to his credit.

Because the flow of personnel into the 4th Armored Division was computed to exceed the rate at which adequate housing could be provided, an interim solution was needed. The Corps Commander planned to utilize the summer training camp at North Fort Hood to temporarily house troops. Although this would require men to live in tents, General Gay felt morale would be better served if the new troops were spared living in extremely congested barracks.

With respect to the enlisted cadre, the Department of Army general plan provided that seven posts in the U. S. would provide specified cadres. The bulk of such personnel was to be provided by the 1st Armored Division and 17th Armored Group.

Specifications of the original plan called for the cadre of the antiaircraft artillery battalion to be provided by Fort Bliss, Texas. However, recommendations of the Corps Commander were accepted, resulting in activation and organization of the 195th Anti-aircraft Automatic Weapons Battalion at Fort Bliss. It will remain at Fort Bliss until battalion training has been completed.

A vital specification by the D/A was that cadre personnel coming into the 4th Armored were to have not less than six months remaining to serve as of the reactivation date, June 15. With the 17th Armored Group designated as the activity to control and house the incoming cadre, such cadre personnel were attached on arrival to the 17th Armored for those purposes.

To return to the filler problem and examine some of its details: It was initially understood that D/A would allocate fillers from the output of training establishments. This was in order that the 4th Armored could establish a unit training program as battalion size units were progressively filled.

On the basis of that understanding, III Corps submitted a filler plan to Fourth Army which provided for 4th Armored Division service units to be filled first, followed by tactical units. This was intended to expedite a combined arms training program. However, changes in this plan became necessary and a new concept was evolved wherein fillers would come from Fourth Army resources. In a large measure, they were pipeline personnel returned from overseas. This, in turn, caused the further problem of personnel not in required grades and MOS's. It also involved extreme variations in the amount of training each incoming soldier had, thus complicating training programs.

Because the 4th Armored was expanding and the 1st Armored was overstrength, a local levy system was instituted on or about June 15. The system provided for 300 to 400 enlisted men to be charged each week from the 1st to the 4th Armored Divi-



sion. This allowed the 4th Armored to organize on a more orderly basis.

In the foregoing paragraphs, an attempt has been made to offer a brief-behind-the-curtains glimpse into the reactivation of the 4th Armored Division. A complete technical study would run to textbook length. In such an extreme condensation, much due credit and detail have of necessity been omitted.

As an aid to even further condensation the III Corps Commander, who was responsible for implementing reactivation of the 4th Armored, was asked for detailed comments. Specifically, he was requested to deal frankly with the major problems, assistance received, action taken by III Corps, comments, and recommendations regarding the task. These were requested with a view to recording for future commanders faced with similar problems, the lessons learned at Fort Hood in 1954. Comments of the Corps Commander follow:

#### Major Problems

Many problems were presented to the Corps in accomplishing assigned mission, the major ones of which were:

1. Lack of a firm TO&E for the 4th Armored Division. The over-all personnel ceiling had been set, but no firm guidance had been furnished as to the exact organization which was desired within the limit of the over-all personnel ceiling.

2. Readjustment of troops presently at Fort Hood so as to provide accommodations for the 4th Armored Division, this to include headquarters buildings, barracks, hardstands, maintenance facilities, and warehousing.

3. Reconversion of approximately 114 barracks to their original status so as to provide space for the 4th Armored Division.

4. Lack of funds to initiate reconversion of barracks.

5. Lack of information as to the expected time of arrival of key personnel.

6. Lack of information as to the expected time of arrival and state of training of filler personnel.

7. The Corps Commander, in addition to other duties, was made Director of Exercise "Spearhead."

#### Assistance

1. A wealth of information and

guidance from the 1st Armored Division was readily available. This division had gone through the same problems in 1951 and still remaining with the division were a few key personnel, notably Brigadier General Edward Farrand.

2. 17th Armored Group, consisting of Group Headquarters and the 317th and 509th Tank Battalions, were on the Post and authority had been granted to transfer the entire group and its two battalions to the 4th Armored Division.

3. Guidance from Headquarters Fourth Army was readily available.

4. A visit to Fort Hood, Texas, by Major General Paul D. Adams, G3 Section, Department of the Army early in May assisted materially.

#### Action Taken by Corps

1. Committees and/or Boards of Officers were appointed to:

- a. Make careful survey of the facilities available and assignment of spaces to units concerned in coordination with the 1st Armored Division.

- b. Promulgate in detail a proposed TO&E for the 4th Armored Division, visualizing in general vertical rather than horizontal cuts in order to meet personnel ceiling.

- c. Prepare and submit plan for timely reception and assignment of cadres and fillers.

- d. Make detailed plans for timely reception of equipment so as not to overburden the supply services.

- e. Make detailed plans for formal activation of the 4th Armored Division.

2. Recommended to the Fourth Army that the 4th Armored Division AAA Battalion be activated and trained at Fort Bliss, Texas.

3. Issued the following policy guidance for activation and filling of the 4th Armored Division.

- "1. Establish a temporary Division Headquarters using 17th Armored Group and its two battalions as augmented by other necessary personnel as a vehicle.

- "2. Avoid duplication of personnel transfers insofar as possible by direct assignment to 4th Armored Division.

- "3. Stagger future training schedules by:

- "a. Filling battalions consecutively.

- "b. Concentrating fillers in battalions in accordance with previous training; for instance, all untrained fillers in one or more battalions,

likewise for basic combat trained fillers.

- "4. Facilitate administration and supply by early filling of technical and administrative units and by selective assignment within said units.

- "5. Establish timely training programs for cadres.

- "6. Make timely use of school quotas.

- "7. Establish battalion size or larger messes where facilities permit.

- "8. Expedite assignment to 4th Armored Division of all personnel presently assigned to other units, Fort Hood, but earmarked for reassignment to 4th Armored Division.

- "9. Assuming that Department of Army will issue a timely directive effecting activation of 4th Armored Division in consonance with III Corps proposed plan, prepare plan for selective reassignment of over-strength personnel, Fort Hood, to 4th Armored Division, in priority sequence necessary to:

- "a. Bring all units of 4th Armored Division to full strength, III Corps Plan; subsequently to Column 7 strength, TO&E 17.

- "b. Provisionally activate and fill D Company, Engineer Battalion, 4th Armored Division.

- "10. Issues of organic equipment, especially major items such as motor vehicles, will be made when the capability to maintain the equipment has been developed by the receiving unit.

- "11. Every effort will be made for cannon-type weapons to be properly cleaned prior to issue. Contingent upon the 4th Armored Division initiating unit training on 1 September, all cannon-type weapons will be ready for issue to the using units in suitable condition for test firing.

- "12. Assign and deliver all fillers from the Replacement Company to their respective organizations within 24 hours after arrival at Fort Hood."

4. Designated 17th Armored Group and its two battalions as the parent unit of the 4th Armored Division and charged them, in coordination with III Corps, with responsibility of receiving and assigning personnel to 4th Armored Division.

#### Comments

1. Major General Paul D. Adams visited Headquarters III Corps early in May, at which time III Corps presented to him:

- a. Detailed recommendations for the TO&E of the 4th Armored Division.

- b. The problem confronted in the reconversion of necessary barracks inherent to the lack of funds.

- c. Recommendation that the AAA Battalion of the 4th Armored Division



be activated and trained at Fort Bliss, Texas.

2. General Adams took prompt action and within a few days:

a. The proposed TO&E for the 4th Armored Division was approved.

b. Funds in the amount of \$378,000 for reconversion of barracks were made available.

c. Authority for activation and training of AAA Battalion of the 4th Armored Division at Fort Bliss, Texas, was granted.

Without the help of General Adams the activation and the accommodation of the 4th Armored Division would have been unnecessarily delayed. His prompt action was and is deeply appreciated by all concerned.

3. Cadres selected and ordered to the 4th Armored Division from many units over the United States arrived as per schedule. However, definite guidance on the expected time of arrival and expected training of fillers has not yet been received. Due to the overstrength of units at Fort Hood, particularly the 1st Armored Division, it has been possible to transfer into the 4th Armored Division several thousand personnel. In fact, on the date of activation the 4th Armored Division had reached the strength of 340 officers, 17 warrant officers, and 3,675 enlisted men; and to date, as of the 30th of June, it has in excess of 400 officers, 19 warrant officers, and 5,000 enlisted men. Further implementation is projected at the rate of approximately 500 personnel per week. It is thought this objective will be reached and perhaps exceeded.

### Recommendations

In the future when major units are to be activated, it is recommended:

1. That a major headquarters, Corps type, be used for making advance plans and implementation of same.

2. That approved TO&E be furnished at the earliest possible moment.

3. That key personnel for headquarters and service units precede actual activation and/or receipt of cadres by a minimum of 30 days.

4. That every possible effort be made to furnish timely and exact information on the expected time of arrival and state of training of fillers.

5. That major items of equipment be scheduled for arrival in consonance with personnel plan.

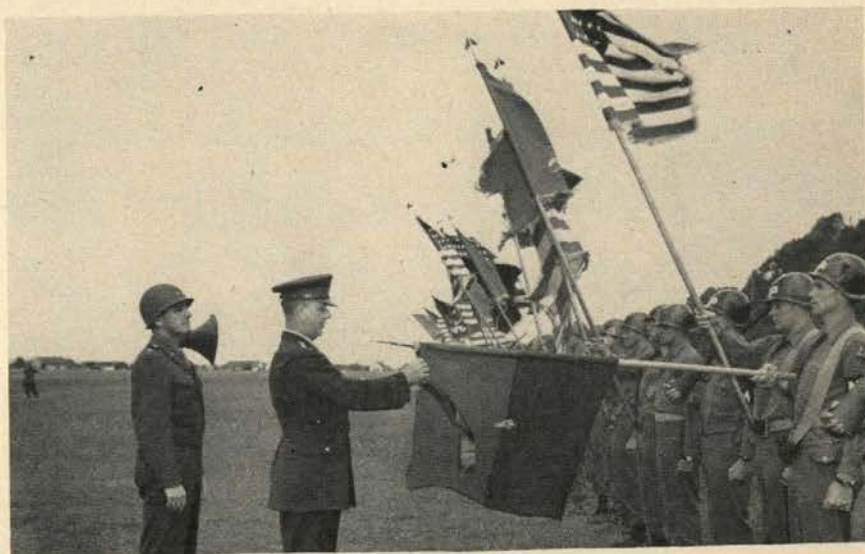
## WORLD WAR II—4th ARMORED DIVISION COMBAT SHOTS



Deploying in a clearing near Sainlex, Belgium, on the road to Bastogne.

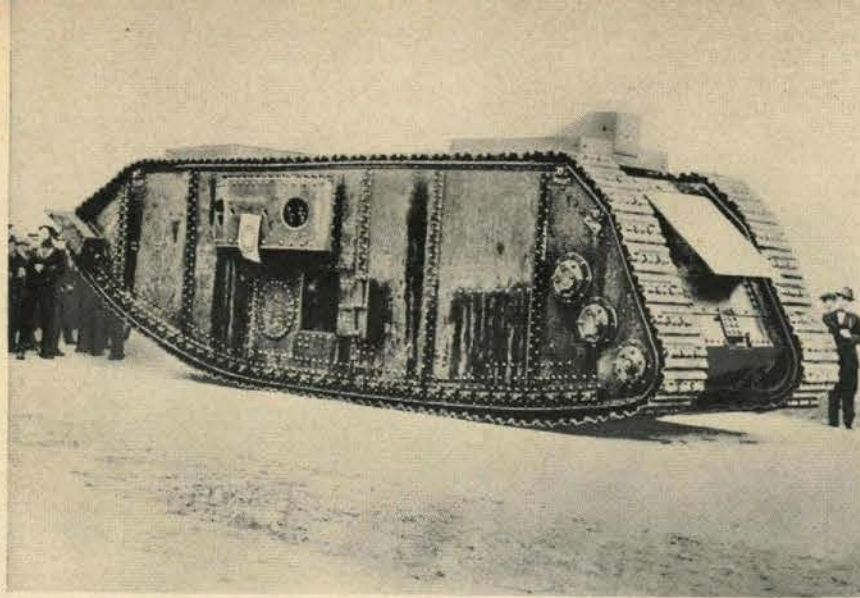


Moving into position near Erfurt, Germany, aided by Air Force diversion.



Receiving Presidential Unit Citation from Gen. Devers for outstanding combat.

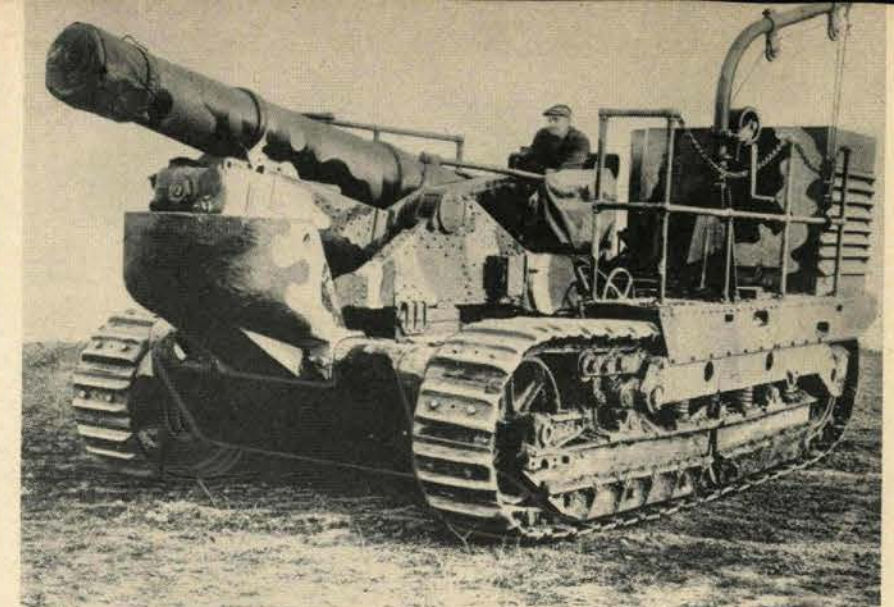




Early model American tank, designed for flamethrower service, never saw action.



The French Schneider in action. It carried a 75mm cannon and had an amazing speed of 4 mph.



American Mark I gunmount carried 8-inch howitzer on track-type chassis.

**T**HE powerful highly mobile tanks of today's modern armies can trace their heritage back to the first practical track-type tractor, which is celebrating its 50th birthday this year.

The invention of the tank, generally credited to General Swinton of the British Army, allegedly came directly from the American made crawler tractor. The tank saw its initial action in the battle of the Somme, September 16, 1916. The ironic situation during World War I was that the Germans did not recognize the vast potential of the tank until it was too late. Only 15 German tanks were in action as compared to thousands used by the Allies.

The summer of 1915 saw the British looking into two designs. The first type tractor had wheels 15 feet high and the second type was the Holt caterpillar tractor. The first type was soon discarded. The second type was modified by the requirement that the new machine be able to surmount a five-foot parapet. This was finally overcome by extending the tracks over the top of the machine and adding a projecting nose. At this point the British departed from the crawler tractor design. The French never took this step. The first French type was the Saint Chamond which comprised an armored body mounted on a Holt type chassis as distinguished from the British design on which the track was carried over the body of the machine.

## A HALF CENTURY OF TRACTORS AND TANKS

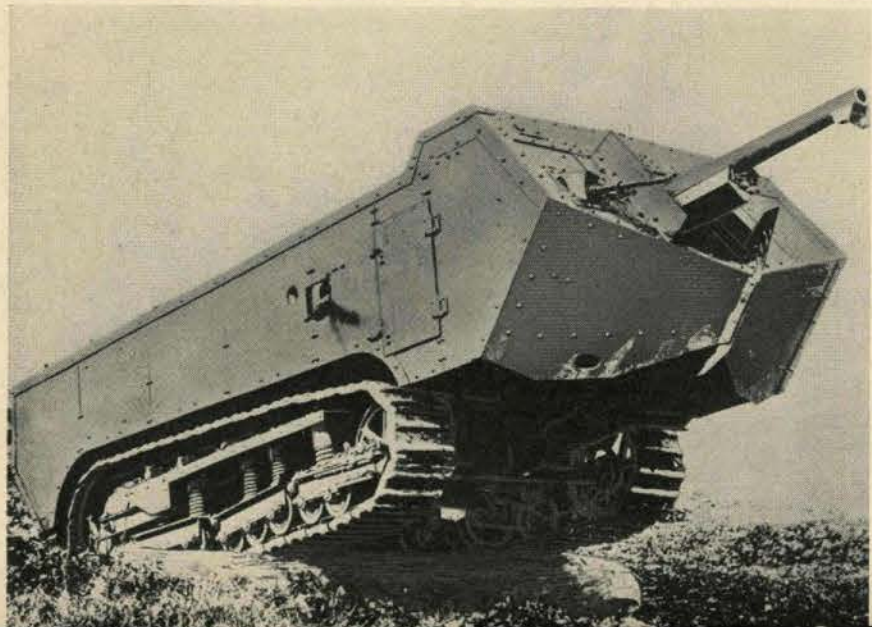
The need was then seen for a faster tank mounting smaller guns and operated by two men. Before the completion of World War I many more improvements were made.

The crawler, besides inspiring the tank, was an important tool of war. The Allies used approximately 10,000 tractors to haul artillery, personnel and supplies across the battlefields of two continents.

Between the two great wars, the crawler tractor continued to develop, one of the major improvements being the introduction of the diesel engine in 1931.

When World War II commenced, the crawler tractor and the tank were better equipped to assume their places in combat than ever before. With the tanks spearheading the great invasions the crawler was always close behind solidifying these gains. The workhorse tractor saw action on every front in the world—from North Africa to the South Pacific. It assisted in building airstrips, and huge supply bases. It cleared jungles and beaches. It helped to rebuild shattered cities and carve out roads in some of the world's toughest terrain. It even got into action itself by knocking over pillboxes and sweeping aside machine gun nests. Yes—it can be said that the track-type tractor has an outstanding record—in both war and peace.—Courtesy—Caterpillar, News Service.

The French tank, the Saint Chamond, carried a 75mm cannon and machine guns.



During World War I, the Caterpillar 75 tractor pulling a huge howitzer into battle position.



During World War II, the Caterpillar D7 clears rubble from Manila streets.





# NOTES ON THE TRAINING OF AN ARMORED DIVISION

## Part V

# TRICKS OF THE TRADE

by

BRIGADIER GENERAL HAMILTON H. HOWZE

**T**HE first article, appearing in the November-December issue of *ARMOR*, dealt in some detail with battle drill, a drill in which competence is required of all units of the 2d Armored Division. The second article dealt with a number of training procedures in effect in the division, and the third of this series set forth certain techniques of fire support—by tanks in overwatching fire positions, by armored artillery, and by antiaircraft automatic weapons—as practiced here. The fourth article described the combat firing drills which tank companies, infantry companies and reconnaissance platoons of the 2d Armored Division run through twice yearly. This fifth article of this series describes in a rambling, miscellaneous fashion a number of practices and procedures which merit emphasis in the training of armored combat units.

It is not necessary to prove that in combat, *time* is one of the most important elements in the conduct of

fire. Thus it is not always as important to get a first round hit as it is to engage the enemy very promptly: the ideal, obviously, is to do both. In any case, the initial round must be at least a near miss to be effective in neutralizing the enemy fire until additional rounds can destroy the target.

### Combat Firing and Combat Firing Practice, 90mm Gun Tank, M47

Because of the complicated fire control equipment in the M47 tank, and because of the constant rotation of personnel, our gunners are often very slow in laying when the range finder is used. We have, therefore, established for the 2d Armored Division *on a tentative basis, pending further experience with the M47 tank*, a special doctrine for combat firing, and for combat firing practice.

When a tank is in a "defensive situation" (i.e., in a permanent defensive position, in a temporary defensive position, or in a delay posi-

tion) or is in an overwatching fire position (i.e., part of a unit whose mission it is to deliver overwatching fire in support of other assaulting tanks) the range finder is normally used in engaging a new target. Adjustment after the first round is by the "burst-on-target" method.

When, however, a tank is part of an attacking<sup>1</sup> platoon, the "battle sight" system is used. The "normal" battle sight (to be taken in the absence of orders to the contrary) we have set at 1000 yards.

To set Battle Sight, the gunner sets range 1000 on his T41 sight, and 60 (the high explosive setting) on his ammunition scale. Range 1000, HE, is set on the ballistic drive, which affects the T35 periscope of both the tank commander and gunner. After proper boresighting, and setting of the zero, the cross-hairs of the three sights should lay very close to the same (distant) point.

Battle Sight 1000 is taken as approximately the proper one for use in

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<sup>1</sup>A platoon is considered an "attacking" platoon when it, or any part of it, is moving in assault of an enemy or as a leading element in the direction of the enemy—even though one section or the whole platoon may halt to fire, the platoon is still "attacking."

<sup>2</sup>Our tank may have either an AP or an HE round in the chamber—although when advancing onto unknown targets it is generally better to carry HE "up the spout." Whether or not to change rounds before firing is up to the judgment of the tank commander.



terrain such as is found in Germany. Different conditions of visibility and terrain may make another desirable. The platoon leader is authorized also to change the Battle Sight by commanding, at any time, for example, "Battle Sight, 800," or, "Battle Sight, 1200." It should be noted however that such changes *may* not be necessary even in the course of several days' fighting.

Battle Sight 1000 will deliver a round of either high explosive or AP shot very close to any target on which the gun is laid between 700 and 1200 yards. A first round<sup>2</sup> hit will incapacitate the target, and a very near miss at least will serve to put the enemy gun or tank crew in a high state of anxiety until our tank can get off a second round.

The tank commander has the better visibility, inasmuch as he has a much greater field of vision, and has field glasses. It is probable that, having observed a target first at any range, he can attain maximum speed by laying the cross-hair on the T35 on the target himself, using the overriding controls. When his cross-hairs are on the target, the T35 and the T41 cross-hairs of the gunner will also be on, thus eliminating the slow and inaccurate procedure of having to describe the target to the gunner.

If the target is less than about 1200 yards, and of a character which makes the target dangerous to our tanks (anti-tank gun or tank, or an infantry anti-tank weapon) the tank commander usually fires the first shot. It will be normal for the gunner to take over the problem from that moment, since he now enjoys much better visibility through his T41 than is available to the tank commander through his T35.

The gunner uses the burst-on-target method to secure a second round hit. If the gunner is unable to use the burst-on-target method because he cannot identify the target, he sounds off "No Target!" If he identifies the target but cannot see the strike, he sounds off "Lost!" In either case the tank commander still has the problem. When the gunner cannot get a good adjustment, the tank commander may be able to make some sort of adjustment himself, using a system of Kentucky windage and elevation through the dust and smoke to keep the enemy gun or tank upset until

some other tank can nail him.

Note that the battle sight of 1000 is used only to engage targets *which are capable of killing our tank* at the ranges where such targets are most apt to open fire.

Sometimes however a dangerous target will appear at very close range, in which case a round fired with range 1000 on the sight will pass well overhead. Therefore the tank commander should, to engage a close target very quickly, command "500," at which the gunner shifts his scale reading on the T41. No effort is made to estimate the range closely in this emergency situation—500 will do to get a hit or a very near miss. At this short range it is usually better to let the gunner fire the first round.

It is normal that when the tank commander judges the range to the target at *greater* than 1200 yards, he places his T35 cross-hair on the target, using the overriding controls, then identifying the target and commanding, "Range!" At this command the gunner uses his range finder to range on the target, and then engages it. Where ranging (because of visibility, or a lack of definition of the target) is difficult, the tank commander may dispense with it in order to get fire down quickly. In this case he may command "1500" or "2000" (estimating to nearest 500 is easier, quicker, and about as reliable) and require the gunner to adjust on the first round.

Whenever the sight is changed, it is reset at Battle Sight (1000) after the fire problem is completed.

There are several manifest advantages of the battle sight system, the greatest of which is that a dangerous target is very quickly engaged, granting always that the tank crew is on the ball. Whether this system will be continued as permanent practice within the 2d Armored Division can only be determined after we have gained further experience in combat practice firing. As of right now, we think it the best.

#### Recording Zeros

The way soldiers pour in and out of units nowadays, scarcely finding time to take off their hats on the way through, makes it generally impracticable either to "marry" the man to his individual weapon, or to obtain and maintain his personal zero—al-

though this last is done in the course of our qualification range firing.

However, we do a good deal of field and competition-type firing throughout the year, and very often men used to fire poorly because they were firing without zeros. Now we require that a record of zero of each individual small arm be kept on the weapon, and also kept in the supply room. Firing has bucked up accordingly.

Paragraph 135, FM 23-5, prescribes "zero record cards" to be shellacked inside the trigger housing group of M1 rifles. Company commanders are given latitude in selection of the spot to record zeros of BARs and carbines.

We also require recording, on a specific spot visible to the gunner, the zero setting for the tank's main armament.

#### The Tempo of Tactical Training

We feel that it is very important that all tactical exercises be worked up with consideration given to the interest and enjoyment which the exercise may produce in the units running it. Much tactical training is interesting and pleasant. But an absolute prerequisite is that exercises must be characterized by rapid activity—long pauses and waits are very deadening, and should be avoided. Likewise, pedantic and long-winded approaches to a problem are unnecessary. Effort should be made to avoid the lengthy "general situation"; it is usually necessary only to point out in a few words, verbally, the special situation and mission of the unit, and put it to work.

#### The Responsibilities of the Commanders of Component Parts of a Combined Arms Force

It is a vital responsibility of attached unit and supporting unit commanders (the latter often represented by Liaison Officers and/or Forward Observers) to take the initiative in the matter of the *employment* of their units and their *location* in the general formation of the combined arms force.

This principle can be best illustrated by example. Assume a combined arms force of a tank battalion reinforced by a company of infantry, to which force has also been attached a platoon of engineers and an antiaircraft platoon; the force is supported by the fire of an artillery battalion





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Armored Infantry and Twin Bofors of attached AAA platoon during exercise.

which has furnished a liaison officer; assume also the presence of the heavy mortar platoon, an integral part of the battalion, as well as the battalion reconnaissance platoon and medical detachment. This combination comprises a powerful—but also a very complicated—force.

Assume now that this force is faced with the necessity of combat action, such as attacking an enemy position:

It is the responsibility of the commanders of the tank companies to make sure that their commands (including attached infantry) are alert and ready for combat (with all that that implies) and then await orders.

It is the responsibility of the commanders<sup>3</sup> of all units *other* than tank (and other than infantry already made part of teams) to have their units alert and ready for combat, and also on *their initiative* to seek out the battalion commander and state to him the means they have at hand, and to recommend how their units may be employed best to assist in accomplishing the overall mission. This applies equally as well to units integral to the tank battalion.

Thus the artillery liaison officer (or forward observer for small units) should on *his initiative* approach the commander and say, for example,

<sup>3</sup>Usually represented by the Liaison Officer or Forward Observer, in the case of indirect fire units.

"My batteries are in position to give you fire up to such and such a line; we can interdict these roads; we can support your fire on these objectives; we can smoke this or that flank; etc." The 4.2 mortar platoon leader should proceed in a like manner, on *his initiative*. The engineer platoon leader on *his initiative* should state his means, and recommend on the basis of his understanding of the mission of the senior unit, backed up by reconnaissance where possible, a placement of the engineers—and indicate where and how his platoon can assist in the action. The antiaircraft platoon commander should recommend location of his elements in the formation, indicate specific areas or defiles requiring special antiaircraft protection, and (if the air situation permits) suggest ground fire support missions appropriate to his arm. The reconnaissance platoon leader should on *his initiative* indicate his capabilities and recommend appropriate missions for his force. The same applies to the medical detachment commander.

The above indicated actions are of special application when a new situation suddenly confronts the command. Such a "new situation" will occur repeatedly in the course of a day's action in a fast moving battle. So, it is the responsibility of the appropriate subordinate commander to do everything in his power to make

certain that an engineer platoon is not, merely because of the absence of specific orders, found to be far too far back in a force which suddenly encounters an obstacle requiring engineer action to cross; a tank company does not jump off in an attack without artillery support; tank and infantry columns do not find themselves in a confined area subject to heavy air attack with no antiaircraft opposition offered; mortars do not stand idle on the road or out of range (or perhaps ready in position but with no fire mission) while a fight goes on without their support.

Naturally it remains the responsibility of the senior commander of the combined arms force to utilize his means in the best possible way to accomplish his mission. It is his decision. But it is too much to expect the commander to anticipate all contingencies, to have his means always at the right spot and operating under the right orders at the right time—he must have the assistance of the commanders of all attached units in arriving at the proper mission for those units, and he must be able to rely on the initiative of the commanders of attached units to recommend to him *in time* instructions which will assure those units being used with maximum effectiveness.

This principle extends down below the reinforced battalion. The infantry company commander must have the same support, the same application of initiative, from the commander of the attached tank platoon, from his artillery forward observer, and from his own mortar platoon leader or forward observer. Similarly the tank company commander must have the same support from the attached infantry platoon leader, the forward observer, etc.

Maybe we can summarize the matter as follows: The impetus of support comes from the supporting units.

#### When is a Unit Ready?

It was stated above that with combat action in prospect it is the responsibility of commanders . . . "to make sure that their commands are alert and ready for combat (with all that that implies) . . ." It may not be altogether necessary to expand on this, but in the last war there were numerous instances where the principle was violated, often with tragic results.



For a unit to be "ready for combat," it must:

- 1 have an adequate supply of fuel,
- 2 have an adequate supply of ammunition,
- 3 have an adequate supply of food<sup>4</sup>,
- 4 have its vehicles, weapons and men in operating condition,
- 5 be at the proper place at the proper time,
- 6 and be instructed as to its task, at the proper time.

In the course of extended combat, commanders of all echelons must be prepared to keep their units operating in the face of great difficulties, including those difficulties brought on by the mistakes of others. Thus, it is utterly inexcusable for an infantry battalion commander, adequately warned of impending action, to report shortly before his battalion is to jump off in attack, "My battalion is short of ammunition"; it is equally inexcusable for a tank battalion commander in a similar situation to re-

port, "My tanks are low on gasoline"—unless the tank battalion commander or infantry battalion commander can state with absolute validity that he had previously reported the shortage to his next senior headquarters, in ample time for corrective action to be taken, and had vigorously followed up the report by requests to his next senior commander for needed supplies.

### Integrity of Units

It is very important for the training and *esprit* of any unit that the integrity of units be maintained in all activities, regardless of the present-for-duty strength. Such functions as guard, fatigue, and maintenance are always better done by crews, squads, and platoons. *Never* should the company be put in a line and the six or eight men on the right of the line told off for a job.

### The "Blue Pin" Solution

Sometimes we find that subordinate units are placed more-or-less properly in position, but are not sufficiently instructed. This is a sort of "blue-pin" solution—as though the outfit were represented by a blue pin stuck in the map, with its mission presumably accomplished merely by the fact of it's

being present for duty. This solution will get you clobbered, in battle.

It is necessary that each unit put into position, or moving in execution of any tactical maneuver, be instructed as to what its action is to be in case of any one of a number of eventualities. Thus, an outpost must be told what to do in case of enemy approach; an infantry squad, in defensive position, must be told what to do in case of enemy attack from one or several directions and what help to expect from artillery fire, mortars, .50 caliber machine gun fire from carriers, attached tanks, squads on flanks and in reserve; the tank platoon in attack must be told what to do in case of enemy resistance from woods on its left flank, what support it can expect from accompanying infantry, supporting artillery, mortars, etc. This is not as complicated as it sounds: it merely takes practice and a little tactical wisdom.

### Organization for an Assault Crossing

Shown at Figure 1 is a type assault crossing (ford or bridge) organization. This organization should be thoroughly understood by battalion and company commanders, and by engineers down to include platoon leaders. It may, of course, be modi-

<sup>4</sup>This requirement, though an obvious one, cannot always be met, and units must be capable of operating for some periods without benefit of food—sometimes even without benefit of enough water.

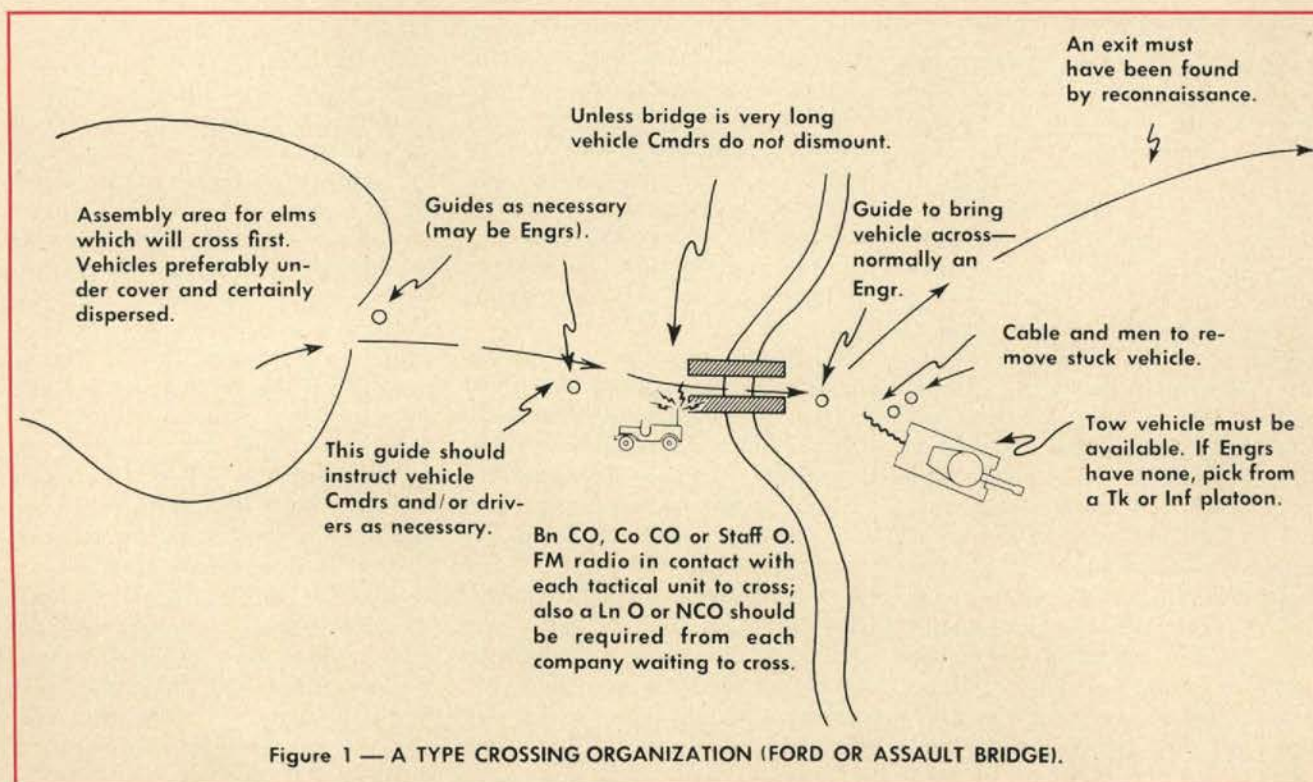


Figure 1 — A TYPE CROSSING ORGANIZATION (FORD OR ASSAULT BRIDGE).



fied to suit circumstances, but it is essential that a sound organization be put into positive effect in order to get combat elements over an assault bridge crossing in the most efficient fashion. The tactical unit commander is responsible for the organization and success of the crossing—not the engineer.

### Eyewash

Sometimes the solution by platoons of tactical problems presented is far too elaborate. This generally occurs because of an obvious desire to please, but on the other hand, it indicates a lack of tactical understanding. The hard way is not *necessarily* the right way (although, unfortunately, it frequently is).

Related to this are certain actions which come under the heading of eyewash. One example of this is the habit displayed by some tanks in swinging their guns back and forth in power traverse, presumably in an effort to indicate alertness and readiness for action, but actually proving nothing. Similarly, infantrymen in many cases flop to the ground and commence simulating the fire of their rifles, when they have no information of enemy in the vicinity. We tell our troops to be alert and energetic, but not silly in an effort to impress inspecting officers.

### Defense in Close Woods

European terrain is characterized by frequent patches of woods. These are sometimes small patches, spotted about in otherwise good tank country.

The use of very close woods (trees close together and much underbrush) in defense is a difficult problem. Generally speaking, the following may be said:

When only delay is being sought, it is not necessary or desirable to commit defending infantry to close-in fighting, tree by tree. However, almost all German woods have lanes cut through them. Lanes intersecting the position must obviously be covered by fire, and cross lanes should be used as a means of deploying troops over the breadth of the position. As a rule, the cross lanes should not be used as a front of one of the successive positions, because it will be very difficult to withdraw the committed infantry through the heavy woods to the next position. In most



Stars and Stripes

Tanks of the 2d Armored Division in an assembly position in a wooded area.

cases it probably will be better to establish the position (in thick woods) perhaps a hundred yards forward of the cross lane, using the cross lane to assemble and withdraw the unit on order or when it is driven out. In this maneuver, the stationing of machine guns or tanks at lane ends or lane junctions, to clobber enemy appearing in the lanes, will be useful. Clever use of these lanes and good selection of successive positions will cost the enemy much time in working through the heavy woods. In some cases, adequate delay may be accomplished merely by defense of lane junctions by tanks and infantry positioned to cover all the intersecting lanes.

When the mission requires persistent defense in such heavy woods, the problem is very different, and naturally tree-by-tree defense must be accomplished. We do not consider this problem particularly applicable to an armored division, and have not trained in it. It would appear that clearing lines of fire frequently will be necessary, in this case, and a relatively large number of troops will be required to protect a given line. Extensive use should be made of booby traps, trip wires, and anti-personnel mines.

### Speed in Deployment from a March Column

Company commanders should be taught how to get a reinforced company from a march column (confined by terrain to marching on a single road) into an action. It is not possible to specify precisely how it must be done, for that will vary with each tactical situation. However, as a principle, one can state that the company commander, having made up his mind as to his scheme of maneuver, starts (or keeps) the company moving steadily in column and gives each successive platoon an intermediate assembly position off the road by means of successive fragmentary orders. Thus, he draws up his tail and gets his force initially deployed. After he has accomplished this he may, if time permits, require a reconnaissance by platoon leaders and/or give further detailed instructions as to the mission to be accomplished. This procedure will avoid time-consuming practice of leaving the reinforced company in column, bringing all the platoon leaders forward for reconnaissance, and then sending them back down the long column to their individual platoons—not a good idea, for many reasons, among which is one discussed in succeeding paragraphs.



### Separation of Commanders from Troops

The commendable desire, on the part of most small unit commanders, to give their NCOs opportunity for reconnaissance must not lead to foolish practices. Certainly there are times when tank commanders should be dismounted and given a chance to look over the ground over which they must attack. But it is not a "must," and never should all the leaders of the platoon in a dangerous area be separated more than a few seconds' running time from the source of their strength. Such an action makes the platoon or company liable to quick destruction for the time that the tank commanders are away.

We might consider in this connection the senior commander who has encountered a small body of enemy which he orders quickly eliminated by tanks; he listens anxiously for the platoon's approach; he grows progressively more impatient and angry for the lack of tanks; and then there eventually appears a little body of six dismounted men armed with .45 caliber pistols, with a lieutenant who says the tanks are sitting motionless away back in the rear. This sort of thing causes trouble in the family.

### Sleepy Drivers

A recurrent problem in long marches, particularly at night when troops are tired, is brought on by the fact that drivers and car commanders are apt to fall asleep during the halt with the result that a column does not move off properly when the command comes. This has caused very serious difficulty in battle, since columns have become split, and parts of columns accordingly lost in trying to catch up. So our Division SOP prescribes that, when a motor column is halted at night, each vehicle commander will dispatch one man to stand alongside the next vehicle forward in column, to report back when that vehicle is prepared to move. In addition, either the company commander or a very reliable representative appointed by the company commander will go to the head of the company column at any halt longer than three minutes' duration; he will remain there until all vehicles of the march unit, when again under

way, have entirely cleared by him.

### Cutting Tank Engines to Save Fuel

We have found that the large consumption of gasoline by the new tanks makes it mandatory to cut engines wherever the tactical situation will permit. The decision as to when engines will be cut is an important function of the company commander and the platoon leader. The platoon leader, in the absence of orders to the contrary, on his initiative orders engines cut whenever his tanks are motionless for more than three minutes—unless the tactical situation strongly indicates otherwise, or it is necessary to keep the engines running for the purpose of charging the batteries, or to keep recently started engines warm. Company commanders are, of course, authorized to order engines kept running in any specific situation; otherwise platoon leaders act as indicated.

### Mask of Tank Guns in Hull-Down Positions

Too frequently, tanks in delaying or defensive positions go into what are intended as hull-down positions, which do not provide the gun proper clearance over the mask immediately in front. It is vital that personnel rec-

ognize what constitutes a proper hull-down position and how to test it; certainly it should be well understood by tank crews that the fact that the gunner's line of sight through the periscope (or range-finder) clears the mask does not mean that the projectile will clear it. The tube must be able to "see" over the mask. Moreover, the mere ability to fire at the very crest of the next ridge is not, in most cases, sufficient—the tank must have available to it a field of fire which will insure the proper accomplishment of the tank's fire mission. This is a matter which requires careful instruction—and repeated check by platoon leaders.

### Infantry with Tanks

One sometimes observes a peculiar tendency to put infantry in front of tanks in both defensive and offensive action. In some actions, infantry thus employed serve only to mask the fire of the tanks. We must not entertain the feeling that tanks are fragile objects which must be ushered tenderly about under the protection of infantry.

### Flanking Terrain

We find that on tactical exercises our units frequently proceed in dis-



2d Armored men and tanks in simulated attack during combined arms training.

U.S. Army



regard of probable or possible enemy occupation of terrain from which very damaging fire might be put on our troops. Certainly it is not always necessary to run over this ground, but it is necessary not to ignore it. Frequently the area may be neutralized by artillery fire, which should include smoke where the ammunition supply and the wind permit; also desirable, as a general rule, is at least a little probing fire by tanks, normally from an overwatching position.

### Tank Platoon in the Establishment of an Overnight Laeger

The mission of the tank platoon establishing a separate night laeger, in hostile territory, may simply be to rest personnel, to service equipment, and to be prepared for action at first light the following morning. This is not to be confused with the function of the platoon when its mission is to secure a locality or when it is a part of a larger force in laeger.

We take pains to see to it that our tank crews are impressed with the fact that a tank is an armored fortress, capable of effective fire in several directions simultaneously, and that it offers considerable protection from ground, air, or artillery attack.

Primary considerations are the use of cover and concealment and a defense plan which will, if the platoon is discovered and attacked, discourage the enemy from further effort. The platoon leader should not initiate or invite action, and will normally fight only to protect his command.

The platoon leader should select a position *well away* from main roads and probable enemy used routes. The area should restrict enemy air and ground observation, but should not be such as to prevent movement of the platoon if displacement becomes necessary. Consistent with the use of natural cover and concealment, vehicles should be placed so as to maintain visual contact during the hours of darkness. The tanks, when so positioned, can provide mutual support and reduce the chance of infiltration.

A platoon in laeger is shown at Figure 2.

Vehicular weapons are kept loaded, and each tank should have one man alert in the turret. This man should stand so that his head protrudes through the commander's hatch, and

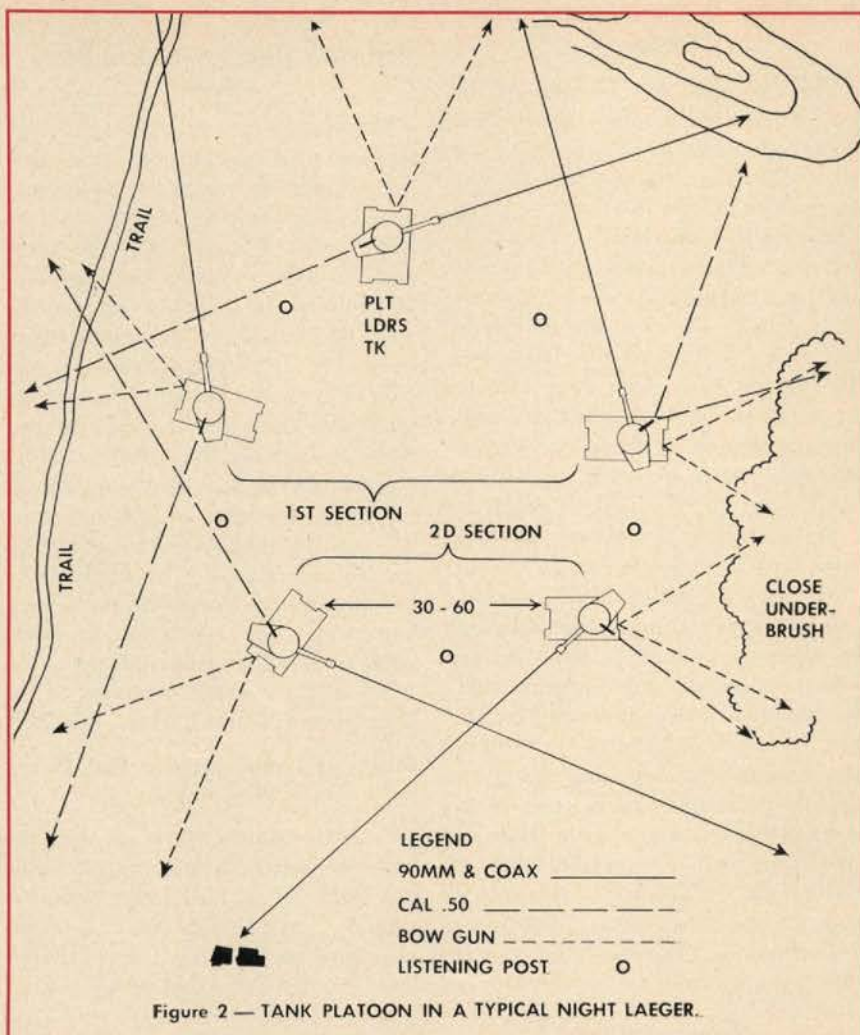


Figure 2 — TANK PLATOON IN A TYPICAL NIGHT LAEGER.

he should have binoculars immediately available.

During daylight hours, observation posts should be established to give early warning of impending discovery or attack. During the hours of darkness and during periods of reduced visibility the observation posts may be drawn in. In this case, the man on alert in the turret constitutes a listening post. Depending upon the terrain it may be necessary to post a second man from the crew, armed with a sub-machine gun, between the tanks to insure against infiltration. The remaining crew members stay in the tank and get as much rest as possible.

When available, wire-activated warning devices should be issued to each platoon. These devices will normally be used only across probable routes of enemy approach, or on routes where observation is difficult. All members of the platoon must know where warning devices are lo-

cated to prevent the accidental setting off of the warning system.

Each tank must be positioned so that the main armament, coaxial machine gun, bow gun, and the .50 caliber AA gun may *each* be utilized to maximum advantage—which means that they are assigned separate fire sectors, where possible. Generally speaking, weapons should be laid to deal with a close-in enemy (0 to 200 yards from laeger perimeter). The sketch shows this.

When artillery support is available, as it usually will be, the platoon leader must arrange for pre-planned, pre-adjusted, close-in fires. Should it become necessary, the platoon leader should cause artillery time fire to be placed directly on his position.

These commendable measures having been taken, the platoon leader may then proceed to sweat out the night. The funny thing is, he'll probably make it alive and well, to his infinite surprise and relief.



# NEWS NOTES

## 1st Armored Division Assists in Flood Stricken Areas

Recently members of the 1st Armored Division assisted in bringing relief to persons in the Rio Grande Valley, Texas who were suffering the aftermath of the worst flood the area has ever experienced.

Bridging operations were carried on at Laredo and Eagle Pass by engineer groups, while field kitchens were kept busy preparing food at Laredo and Ozona.

About 100 members of Bridge Company, 16th Armored Engineer Battalion, joined workers from the 35th Engineer Group, a Fourth Army unit stationed at Fort Hood, in bridging the Rio Grande at Laredo.

In addition, 12 field kitchens from the 1st Armored were among the 20 kitchens from Fort Hood taking part there in "Task Force Snow" under Maj. Thomas R. Snow of the 2nd Anti-Aircraft Artillery Battalion. Four cooks were on duty with each kitchen.

Approximately 20 advisors from the 16th Engineers were at Eagle Pass with Fourth Army engineers from the 61st Engineer Construction Battalion, where they spanned the swollen river with a Bailey type suspension bridge.

"Task Force Wilson" under the command of Major J. W. Wilson, S-3 of the 16th Armored Engineer Battalion, operated in Ozona with rations, water purification equipment, field ranges, blankets and cots for use by the community.

The first mission assigned to the 1st Armored Division force in Operation OZONA was to assume charge of the kitchen established in a school gymnasium for feeding the local population. Under supervision of Master Sergeant Rosario Cici, of the 1st Armored Division's 1st Armored Quartermaster Battalion, military personnel fed about 800 people the first evening.

Working in close cooperation and under the supervision of Red Cross Disaster Relief Headquarters, the 93-man force was prepared to assume such other missions as might be required at the Ozona disaster site.

First Armored Division units providing equipment and personnel in "Task Force Wilson" included the 16th Armored Engineer Battalion, 141st Armored Signal Company, 1st Armored Quartermaster Battalion, 501st Military Police Company, 47th Armored Medical Battalion, 123rd Armored Ordnance Battalion, and the Division Aviation Section.

## 7th Armored Division Association To Hold 8th Annual Reunion

The Seventh Armored Division Association (Lucky Seventh) will hold its

Eighth Annual Reunion at the Statler Hotel, Detroit, Michigan during the period 27-29 August. For additional information you are invited to contact the 7th Armored Reunion Committee, c/o Statler Hotel, Detroit, Michigan.

## A New National Guard Armor Group

The New Jersey National Guard recently announced the conversion of the 114th Infantry Regiment to the 103d Armored Group. This unit's heritage dates back to the old 3d New Jersey Infantry Regiment according to the Army lineage book. This unit will train with the 50th Armored Division during their annual summer encampment which will be held during the last week in July and the first week in August.

## General Gavin to Speak

Major General James M. Gavin, G3, Department of the Army will be the principal speaker at the next meeting of the Washington Chapter of the Armor Association. This will be a dinner meeting at the Naval Gun Factory to be held on the 12th of August commencing at 7:00 P.M. For further information contact Captain James M. Madden, CMD, Armor Branch, TAG.

## Army to Test New Concepts

Various news releases recently announced that the 1st Armored Division and the 47th Infantry Division will be reorganized sometime this fall to test new theories concerning employment of units in view of new developments. Following the reorganization, they will be retrained prior to the testing next spring.

## East German Army

Communist East Germany now has an army of more than 80,000 men equipped with 1,300 tanks and self-propelled guns and is training 7,500 fliers in Soviet aircraft, a British Government White Paper asserted recently.

The White Paper strikingly contrasted the disarmed state of West Germany with that of the German Democratic Republic, which has been methodically rearmed by the Russians since 1948.

As intended, the statement drives home the point made by both the Government and official leaders of the Labor party that the rearmament of West Germany under the European Defense Community is an attempt only to redress the balance of arms in the divided nation.

The Russians call the East German armed forces police and the White Paper concedes that West Germany has police, too. But, the proportion of the police to the citizenry in West Germany is about one to 450 in a population of 50,000,000 compared to one to 100 in East Germany. The population there is estimated at about 18,000,000.

The picture of East German rearmament provided by the White Paper showed that the present forces in the Soviet Zone could be transformed speedily from tactical units into cadres for at least fifteen ground divisions once conscription was ordered by the Russians.

The East German ground forces are now organized into seven divisions. Their heavy equipment consists of 1,300 tanks and self-propelled guns and 1,300 field, antitank and antiaircraft guns, the White Paper said.

## TOP COMMAND CHANGES



U.S. Army

Maj. Gen. John H. Collier  
To FECOM



U.S. Army

Maj. Gen. George W. Read  
CG, The Armored Center



# Revolution In Armor Education

by

LIEUTENANT COLONEL ALBIN F. IRZYK

**A**RMOR, a branch characteristically known for its progressive and forward thinking, recently took an epoch-making step in military instruction and education.

Members of the Armor Officer Advanced Class at The Armored School, Fort Knox, Kentucky, moved to Fort Hood, Texas, for two weeks of field training. The trip was, to say the least, a unique and revolutionary venture.

Just visualize the impact, the ramifications of such a program: a class of officer students at a service school moved to the home of a tactical armored division. The armored division made itself available for a two-week period to support all the exercises in which the class was to participate. Every officer and man in the division was prepared to support in any way that he could. Ultimately each individual in the division was to feel the impact of the visit by the class.

To the best knowledge of this author there has been no prior class at any service school which was fortunate enough to be afforded the opportunity that the 1953-1954 Armor Officer Advanced Class experienced.

This joint effort between a service school and a tactical division heralded a new era in the cooperation of two major Armor agencies toward a common purpose—their goal, the best possible education for a group of officers studying Armor.

Prior to their Fort Hood trip, the Advanced Class had been learning armor doctrine and tactics in the classroom. Their course had started with a brief refresher at the platoon level. Then it moved into an extensive coverage at the company and battalion level. Just as the class was about to move into combat command instruc-

tion seemed an ideal and logical time for practical application on the ground of the principles learned in the classroom.

All year long the battles had raged in the school's Deffenbaugh Hall. They had been fought on maps with overlays, acetate, and grease pencils. "Issue the tissue" was the battle cry. Axes of advance, assembly areas, attack positions were easily chosen and drawn with a flourish of the grease pencil. If there was any doubt about frontages—well, the quick application of a 12-inch ruler decided that.

Battalions had been assembled, "moved to a decisive point at a decisive time," committed rapidly, and fought rather skillfully with little or no difficulty. And now combat commands were to be the elements to be employed, to be pushed blithely around the map and invariably to win the battle. This should prove to be no problem. After all, were not combat commands simply "elements consisting usually of more than one battalion with some attachments"?

And regardless of what the instructor said, each student was sure that his way would do the job best. After all, the instructor, in the student's opinion, couldn't prove him wrong.

In previous battles there had been no control problem, for communications never failed. The new family of radios were being used, and they couldn't be beaten.

During map problems, a tank was occasionally knocked out by antitank guns or mines. Maintenance was invariably good and hardly had to be considered. Gas and ammunition were considered in only an occasional requirement; the rest of the time the S4 could be depended upon to handle matters. So, except for minor difficulties here and there, the units would fight at nearly full strength and were always ready to roll when needed. As a result, each battle was won in relatively easy fashion. It was so easy, in fact, that there was plenty of time to sit back and be casual, blasé, and even critical of the "stuff"

being presented from the platform. Each student by now believed that in a very short time he would have the palm of his hand firmly on the combat command. He would have no trouble commanding it.

How could this attitude be combated? Cautions, warnings, combat examples from the platform would do only part of the job. The student must be given an opportunity to apply on the ground what he had been taught in the classroom. Only then would he have a true conception of his task ahead. Only then would his education be properly rounded out.

It had been recognized for some time at The Armored School that unless the advanced class could apply in a practical manner what they had been taught, a gap would exist in their education. The logical step, as their course neared completion, was to go into the field and to actually move, control, and fight Armor elements on the ground. Only then could these students be considered educated and qualified as potential battalion and combat command commanders; only then would their course have fulfilled its purpose.

Urgent as was the requirement to get the students into the field, Fort Knox was hardly the place, for training areas have long been too limited for other than small-unit problems.

During the school year 1952-1953, the advanced class, which in the classroom had fought successfully and successively platoons, companies, battalions, and combat commands, had moved into the field for a three-day-two-night field exercise just before graduation. That had been their practical, their applicatory exercise. That had been their last opportunity to actually "play with" Armor elements before they graduated. Yet the main unit in the maneuver was a reinforced tank company—a tank company reinforced with a platoon of armored infantry. This force was opposed by an Aggressor element consisting of a reinforced reconnaissance platoon. These limited forces could hardly be

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considered "Armor in strength."

Thus, from a class numbering close to 200, only six students had command jobs: one tank company commander, three tank platoon leaders, one armored infantry platoon leader, and one reconnaissance platoon leader. Only these individuals were afforded the opportunity of commanding Armor elements. The rest of the class were tank crewmen or members of an armored infantry rifle platoon and a reconnaissance platoon.

Although somewhat of a letdown, the exercise was well worth the time and accomplished a purpose. The students "played with" the elements of a reinforced tank company and learned much of a down-to-earth, practical nature about the operations of a small Armor element.

A need having been recognized for more extensive practical work, an idea was conceived many months ago at The Armored School. It was envisioned that an attempt must be made to get the advanced class to a place where they could come to grips realistically with the work for which they had been educated.

The answer to a prayer at once seemed to be Fort Hood, Texas, the home of the 1st Armored Division. When members of the division were approached on the idea, they at once gave wholehearted concurrence. From that day they have given complete and unstinted cooperation and support to the entire project.

Two years ago the idea had progressed to the project stage. The project was shaping up nicely when the mission of the 1st Armored Division was changed to that of conducting individual training which utilized the greater portion of the division. It had become physically impossible for the division to undertake support of the advanced class training. So with mutual reluctance, the project was temporarily shelved.

With the coming of another school year (1953-1954) an attempt was made to make reality out of what until then had been only an apparently good idea.

The newest concept visualized the advanced class going to Camp Irwin, California, for platoon firing problems, and later to Fort Hood, Texas, for company problems and a two-sided field maneuver. It soon became apparent that because of a variety of

factors and problems, an important one of which was economy, it would be necessary to abandon the Camp Irwin concept. It quickly became apparent, too, that the facilities at Fort Hood and the eagerness with which the 1st Armored Division approached the idea would enable The Armored School to conduct at Fort Hood the training originally envisioned for both Camp Irwin and Fort Hood.

Preliminary planning proceeded rapidly between the 1st Armored Division and The Armored School. Cooperation was superb, and a "can do" attitude prevailed. After concept and plans jelled, authority was requested from higher headquarters. Finally, authority for the trip was granted and tentative plans quickly became firm plans.

The 1st Armored Division, despite many heavy demands and pressures, set aside its training and projects for two weeks, leaving its calendar clear so that the entire division would be available to render whatever support was necessary.

The entire class flew to Temple, Texas, on 11 April, and were bussed to Hood.

The class were billeted in new, permanent troop housing and were guests of Company C, 16th Armored Engineer Battalion of the 1st Armored Division, which housed, fed, supplied, and administered the class and members of the Staff and Faculty who accompanied the class.

The first day at Fort Hood—12 April—was devoted to an orientation on the two-week activities, the drawing of necessary field equipment, and an opportunity to become acquainted with the Post.

From then on the training was divided into four phases: phase A and phases I, II, and III.

Phase A consisted of a day of demonstrations conducted by Division personnel. In the morning the class witnessed a tank-infantry team conference and demonstration by elements of CCA. After lunch in the field, the class moved to the Tank-Infantry Combat Course—better known as TICC and of which the 1st Armored Division is justly proud. Here a tank platoon reinforced with a platoon of armored infantry from CCB demonstrated the actions of a unit going through the course.

Phase I started the next day and

continued for three days. This phase consisted of four platoon firing problems using service ammunition.

The class was divided into six platoons of five tanks each. Since M48 tanks were used, four students were assigned to each tank.

The purpose of these problems was to make each individual in the class intimately familiar with every job in the tank and to give him an opportunity to drive a tank, load the weapons, fire the weapons, and act as tank commander under tactical conditions. Since there were four problems, and since the students rotated after each problem, each man ultimately held down every job in the tank during a platoon firing problem.

For each problem a different platoon leader was designated. Accordingly, four individuals in each platoon had the additional opportunity and responsibility of commanding the platoon. They became quickly aware of the difficulty of control and the responsibility involved in fighting a unit even as basic as the platoon.

The four problems were: an attack problem with a tank platoon reinforced by an armored infantry rifle platoon; a night attack problem with a tank platoon reinforced by an armored infantry rifle platoon; a hasty river crossing problem by a tank platoon reinforced with an armored infantry rifle platoon; and an advance guard problem for a tank platoon without infantry.

In each problem advanced class students occupied every slot in the tanks. The attached armored infantry rifle platoons were made up of Division personnel. During the hasty river crossing problem, in order to graphically show the students "how the infantry live," the students went through the problem once as armored infantry and fought in and out of armored personnel carriers.

Was it necessary to expose advanced class students to platoon firing problems, and did they benefit from them? If one were to ask the platoon leader of a night attack platoon, he undoubtedly would get an emphatic, "Yes!" This platoon leader had made a careful daylight reconnaissance, had a limited attack of 1200 yards to make, and had the aid of artillery illuminating shells and caliber .30 tracer to mark his flanks. Yet, during the course of his attack, he got in



front of his platoon, then crossed two clearly visible lanes, crossed in front of two left flank tanks, crossed the tracer machine gun fire of one of his flank guns, crossed an eroded ditch, almost turned over in another ditch and finally wound up in a large eroded ditch almost on his side with two tracks thrown and with earth on his right, earth on his left, and sky above. He was in (as he was later labeled) "antenna defilade" at least 600 yards from his lane. He would unquestionably be the first to agree that there is more to commanding a reinforced tank platoon than would at first meet the eye.

Phase II was another day of demonstrations by Division elements. Part 1 of phase II was a series of static displays in the motor parks. Here the purpose was to give the students a graphic picture of the following units at war strength: tank battalion; armored infantry battalion; artillery battalion; headquarters and headquarters company, combat command; reconnaissance company; armored engineer company with bridge platoon attached; automatic weapons battery; quartermaster supply and field service companies; company, armored ordnance battalion; and company, armored medical battalion. The equipment for each different type vehicle in these formations was displayed in front of the vehicles, together with their crews. This demonstration seemed to bring to life for the students the units which until then had been lines in a task organization or boxes in the text entitled "Reference Data for Armored Units." The effect of these displays can best be summed up by the universal astonishment at the terrific size and composition of the bridge platoon. Heretofore it had occupied a very innocent spot in a task organization which usually contained the line, "Armored Engineer Company with *Bridge Platoon attached.*" It is safe to assume that no student in the future will ever write that statement without quickly conjuring a picture of that unit as he saw it lined up at Fort Hood. These displays were planned and coordinated by Reserve Command and were of tremendous value.

Part 2 of phase II took place the same day as part 1. While the students were examining equipment in the motor parks, CCA had moved

into the field and into an assembly area. It was a normal combat command and consisted of its headquarters and headquarters company, two reinforced tank battalions, one reinforced armored infantry battalion, an artillery battalion, an engineer company with bridge platoon attached, an ordnance company, a medical company, a reconnaissance company, an automatic weapons battery, a military police detachment, and a signal detachment. These units were properly dispersed and occupied an area 3000 yards by 5000 yards. The area selected was wide open. No attempt was made to conceal or camouflage a single vehicle. The students moved to one of the highest vantage points at Fort Hood and were awed by this most impressive panorama. In explaining the features of the area the narrator was assisted by the firing of colored flares to indicate the location of each unit in the assembly area. The purpose of this demonstration was to bring to life the combat command goose egg that so often appears on a map and is "laid" by a grease pencil.

From the vantage point the class watched as this colossus sprang to life and observed as the two reinforced tank battalions which were to lead the simulated attack moved quickly from their assembly areas to their attack positions. They were followed immediately by the remainder of the combat command.

The students were then moved to another vantage point. As soon as they were in position, the combat command attacked the vantage point, passing to the left and right of it. This clearly showed the power of an armored attack and demonstrated vividly why "shock action" is considered one of the characteristics of armor.

Upon completion of the attack, the class moved to another observation point and from a considerable height watched as the combat command moved via two roads back to its motor parks.

Part 2 provided some sights that most observers had never seen before and never will see again. The students were treated to the vast and awe-inspiring panorama of a combat command assembled. Then, more graphically than words either spoken or written could describe, they saw the magnitude of a combat command "rolling," for passing by them was the

combat command in deployed formation in an approach march just prior to going into the attack. Subsequently, they saw this powerful force spring into the attack when given the word. Finally, they were shown a combat command on the march. Nature very kindly and appropriately marked the road space, for dust curled upward from the head of the column to the rear. As a result, *road space, time length, interval, and march unit* ceased being simply phrases and became pictures stamped indelibly in the mind of each observer.

Phase III, the final phase, began that night. This phase consisted of a three-day-two-night *free maneuver* controlled by personnel from the Staff and Faculty of The Armored School and personnel of the 1st Armored Division.

On one side was a blue or friendly force consisting of a combat command with its headquarters and headquarters company, one reinforced tank battalion, and one reinforced armored infantry battalion, plus the normal combat command support. This force had for its main fighting elements a total of eight companies: four medium-gun tank companies, one heavy-gun tank company, and three armored infantry rifle companies.

Opposing this force was an Aggressor force with US organization consisting of a reinforced tank battalion which had five companies: two heavy-gun tank companies, two armored infantry rifle companies, and a reconnaissance company.

The students in the class were placed in command and staff spots. One student commanded the combat command, three were battalion commanders, and others made up the staffs of these organizations. In addition, students occupied all the company commander and platoon leader spots. So, in this operation, all the command and staff positions from platoon through combat command were in the hands of students. The students simply displaced the assigned 1st Armored Division commanders for the period of the maneuver.

In every case the displaced 1st Armored Division commander was the umpire for his unit. In this way he was able to keep close tabs on his equipment and men and was prepared to step in only if it was obvious that his unit was being mishandled. For-



unately such a situation did not occur. Each of these commanders rendered invaluable service in his capacity as an umpire.

During the period that the class were participating in platoon firing problems, the S3's of the combat command and battalions were excused from the problems and spent their time doing advance planning, reconnoitering, and closely coordinating with the units of the 1st Armored Division which they were taking over. They would consult with their commanders-to-be each evening.

During the week-end prior to the maneuver, trucks, jeeps, and light planes were made available to all those who wished to reconnoiter the area over which the operation was to take place. Also, individuals had an opportunity to meet the commanders of the units whom they were to replace.

By this time march orders, task organizations, and operation orders were firm. Commanders of 1st Armored Division elements knew where their units were to be assembled, what their organizations would be, and in what order they would leave the motor parks.

It might be well to mention that the combat command commander and each of the three battalion commanders had been designated by the Staff and Faculty. These four individuals were the four senior members of the class. Each of the four was assigned a block of students, and each subsequently decided which of the students in his block he wanted for each job. In this way, the commander had a considerable amount of "say-so" in the organization of his team.

The students began their short tour as Armor commanders with all sorts of difficulties imposed upon them. They took command of their units after dark. They had a very brief time in which to get acquainted with their crews and the personnel of their units, because in most cases they had previously met only their counterparts. They had to learn the SOP and call signs on the fly. Only a very brief time was available in which to learn about the various items of equipment available to them. So, with a strange voice "on the horn," the units moved out in an administrative march to assembly areas and almost at once were involved in a

grim tactical situation. It has been rare, indeed, that an Armor commander has ever had to shoulder so much responsibility so quickly as did these student commanders. By the second day they were firmly in the saddle. Their job was made considerably easier by the enthusiasm, responsiveness, alertness, and willingness of the troops of the 1st Armored Division, who were more than ready to play the game.

As was expected, contact by both forces was quickly established; and when daylight came the blue force was pushing hard. Being the stronger force and exhibiting a maximum of aggressiveness, its units soon were rolling. Hours before the scenario had anticipated, the blue force was heading for the reservation boundary.

According to plan, two companies were then detached from the blue and attached to the Aggressor force. The ratio now became seven companies for the Aggressor force and six for the blue. This found the blue on the defensive and gave Aggressor the opportunity to attack. Attack it did! The tide quickly turned, and on the second day the Aggressor dug its spurs into the flanks of its beast in earnest. Now Aggressor rolled. It made spectacular progress. Armor attacks were speedily and aggressively made and were beautiful to behold. Individuals on both sides were now almost masters of their jobs. Aggressor soon had blue on its heels and was ready to run away. At this point the problem was terminated several hours ahead of schedule, because by this time the purposes of the problem had been realized and the objectives gained.

The fundamental purpose of the maneuver was to provide an opportunity for students to command Armor units; to make plans and issue orders under tactical conditions; to control units at night, on the march, and in offensive, defensive, and retrograde operations; to function as staffs; to play logistics and administration realistically; and most important, to live with and fight with Armor units.

An outstanding feature of the maneuver was the aggressiveness of the commanders and the speed of action of the units. It was obvious that the Armor spirit so painstakingly fostered during their course had taken hold.

Action was rapid and decisive

throughout the problem. The usual lulls evident in most maneuvers were not present. This situation can be largely attributed to the zealotness, intelligence, and ability of the umpires. They knew their jobs, quickly assessed casualties over which there was a minimum of wrangling, and permitted the units to retain their momentum. Throughout the maneuver there was no artificial interference required from maneuver control headquarters; actions proceeded absolutely naturally.

Unquestionably the two-week exercise was invaluable to the students. When one considers that in the class were 22 Allied officers representing 14 nations, 20 Infantry officers, and at least half of the Armor officers with little or no actual Armor experience, one realizes how vital it was to provide these individuals with practical, down-to-earth Armor training.

In the planning for this trip, there had been no precedent to follow. It is safe to say that all phases of the two-week program worked out extremely well and in several cases much better than anticipated. To say the least, the trip was highly successful and extremely profitable.

Now that a precedent has been established, a trip of this kind should be made a regular part of the curriculum of the Armor Officer Advanced Course. The benefit gained more than justifies the expense involved. It is conceivable that a field trip of this kind could be provided for every advanced class at every service school.

The objective of every such course is to turn out the best-rounded officer possible. Unquestionably a field trip of this kind will assist in turning out a better educated officer. The increased capabilities of the graduates of the course will greatly benefit the Army, and their performances in future years will more than repay the money used to subsidize the field trip.

Although in a supporting role throughout the maneuver, elements of the 1st Armored Division gained a considerable amount of training value from the exercises. This fact was attested to by senior commanders of the division in the critique which followed the maneuver.

Veritably a revolution in the education of Armor officers took place at Fort Hood, Texas, in April of 1954.



# The Fighting Potentialities of a British Armored Division

by

MAJOR-GENERAL L. O. LYNE (Retired)

CARDED

**I**F the world should ever be so foolish as to launch out into atomic warfare, what part would an armored division play?

It is probable that the atomic missile could be delivered in one of three ways: by bomb from an aircraft, by rocket, or by shell from a gun. All might have great range and equal effect. It would seem that concentrations of troops, such as we saw in the last war at Alamein, Normandy and the Rhine, must give way to controlled dispersion.

In offensive action atomic attack alone may not make the gap for the mobile troops, but it will certainly do a great deal to help, provided immediate advantage is taken of the damage and confusion caused. The tank itself and its crew should be capable of passing unharmed through the area of damage.

The armored division could be lying back, hidden up in carefully controlled dispersion by battle groups. They will move forward when the time comes on independent lines of advance from their dispersed assembly areas, to concentrate for the first time upon their main objective, which may be many miles distant past the area of atomic attack.

In defense, the armored divisions may be sited in depth behind the forward defended areas held by infantry divisions.

Any penetration by the enemy will



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give the swiftly moving dispersed armor the opportunity to move against the enemy and seal off his penetration. He will thus be forced to bring up his heavy equipment through the gap he has created and in so doing may well offer a suitable atomic target, after which the armored divisions should have the chance to destroy the remaining enemy forces.

The possible pattern of land warfare in an atomic age seems then to

point to the armored division as being indispensable in attack and defense. Dispersion and rapid concentration, often on a distant objective, to make the most of the mobility of the tank, will call for staff work and training of the highest standard.

The British armored divisions, with their high proportion of long service regular troops and their two-year national service men, are well fitted for this role. In fact, the British Armored Division as organized today is the most powerful fighting formation in the world.

Its present establishment of men, weapons and vehicles and the balance between units of the different arms is the result of the experience of the last war, in particular the fighting in the Middle East and N.W. Europe, applied after much hard thinking and experimental training to the conditions of today and the possible battle conditions of tomorrow.

Field Marshal Montgomery in one of his training pamphlets published in the 21st Army Group in the last Winter of World War II pointed out that the main characteristics of an armored division are:

- (1) *Its armor,*
- (2) *Its firepower,*
- (3) *Its mobility.*

No plan for the employment of the division will be sound which does not exploit these characteristics.



The armored regiments of a British Armored Division are equipped with the Centurion tank, an all purpose medium tank developed since the end of the last war. This tank is at least the equal of any other medium tank in the world as regards firepower, armor, cross country performance and general reliability. It also allows the crew reasonable conditions and reduces fatigue to a minimum.

It must always be remembered that the tank is in effect a mobile gun platform, and the object of all tank tactics is to maneuver the tank into a position where its gun can prove decisive. The accuracy of the gun and the hitting power of the shell are of prime importance. Recent developments have greatly increased the accuracy of the Centurion's gun, particularly on the move.

The immense weight of mobile firepower which the Centurion tanks of the armored regiments already represent is shortly to be increased by the addition of a heavier tank, the Conqueror, mounting a yet bigger gun.

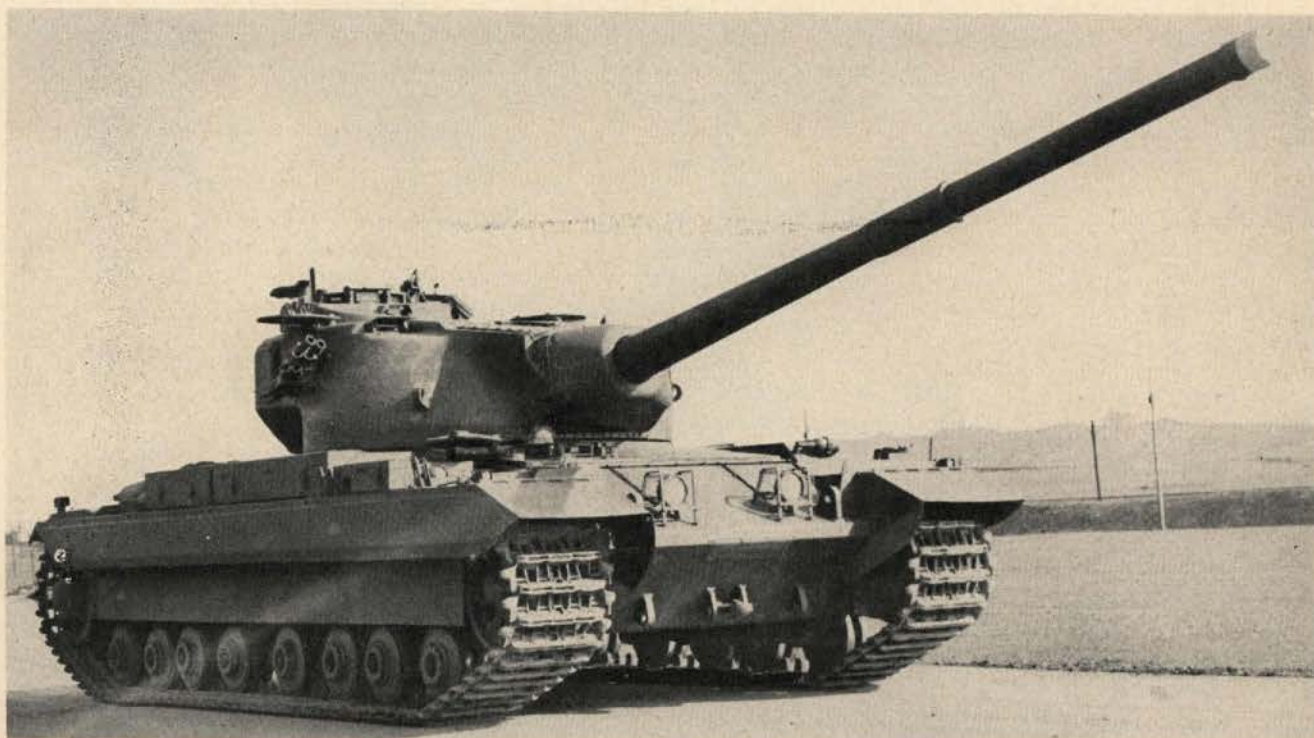
The addition of a number of Conquerors will give the armored division greater hitting power, particularly against prepared enemy defensive positions. It will also considerably strengthen the defensive capacity of the division against enemy armor.

The armored division is, of course, much more than a number of armored regiments. It is a closely integrated, highly trained formation of all arms. Its infantry battalions must be trained to operate in support of any of the armored regiments. Its armored car regiment gives it the power to conduct long range reconnaissance on a wide front to contact the enemy, and forms a ubiquitous force for such tasks as watching exposed flanks and raiding into enemy territory. The regiments of Royal Horse Artillery with their self propelling guns can give immediate artillery support. The Royal Engineer field squadrons form a vital part of the division with their primary task to ensure that obstacles, demolitions, minefields, etc., do not slow up or halt the advance.

Not least important are the administrative services. The Royal Electrical and Mechanical Engineers are responsible for the repair of damaged equipment, the Royal Army Ordnance Corps for provision of equipment, and the Royal Army Service Corps for all manner of supplies, rations, ammunition, gasoline, oil and lubricants.

Nor must we forget the Royal Corps of Signals because on the efficiency of its signal service depends partly the rapidity with which the division can react to any situation.

The high standard of staff work required, the thorough training of all arms to move quickly and tidily, to combine together as a team for offensive or defensive operations and to ensure by proper timing that the immense firepower of the division is used to the best advantage, all these need the best officers and men in any army. Great Britain has given to her armored division the very best she has both of human material and of equipment.



British Information Services

The Conqueror, the newest and largest of British tanks, is powered by a Meteor aircraft engine. It is in limited production and shortly will go to the British Army in Germany for troop trials. The big gun is reported stabilized both vertically and horizontally by an improved system of electronic control. Despite its weight it is claimed to be maneuverable.



*Recently members of the United States House of Representatives Armed Services Committee stopped at Fort Hood, Texas while on a three-day Army tour intended to familiarize them with late developments and techniques. Their comments and reactions to the armored display staged by the 1st Armored Division reassure us that the mobile arm continues to be of prime importance on the battlefield.*

## OPERATION CONGRESS

**A**RMOR'S value in the age of nuclear warfare received an emphatic boost on March 27 when the 1st Armored Division was host at Fort Hood to a group of fifteen Congressmen and a sizeable number of key military and civilian officials of the Army and other agencies.

The party visited the Central Texas Post, now the home of two tactical armored divisions, as the final stop of a three-day Army sponsored tour of installations in the Southwest. The purpose of the tour was to familiarize the governmental officials with late developments in Army equipment.

What the visitors saw at Fort Hood—a static display of basic armored combat units and equipment, a firing display by selected weapons found in the armored division, and a demonstration of a tank company in the attack reinforced by armored infantry and supported by armored field artillery—gave convincing proof to key members of the influential House of Representatives Armed Services Committee that Armor has a vital role to play on the modern battlefield.

The program elicited this comment

**CAPTAIN EGON E. FRIEDMAN** served in Europe during World War II with the 771st Tank Battalion. Subsequent to the War he returned to Europe serving with a tank battalion, later as a Military Post Public Information Officer. His present assignment is PIO, 1st Armored Division, Fort Hood, Texas.

from Congressman Dewey Short (R), Missouri, Chairman of the Committee: "Armored equipment will be more necessary than ever in the atomic age. The armored personnel carrier is absolutely essential, and things would seem hopeless without them. I don't believe there can be a substitute for armored equipment in the age of the atom bomb."

The Congressman's comments on the importance of Armor came after tanks and armored personnel carriers of Combat Command A, 1st Armored Division, had completed an attack problem on Fort Hood's 205,000-acre training reservation. Armored vehicles had rumbled forward to seize an objective under intense artillery fire support, including time fire. When a mission for infantry arose, fresh doughboys dismounted from their armored personnel carriers—which had carried them close behind the tanks—and eliminated enemy antitank positions.

These armored personnel carriers, now often called "the infantryman's best friend," led Congressman W. R. Poage (D), Texas, to reflect in his weekly newsletter to his constituents.

"At Fort Hood I was particularly impressed with the new armored troop carriers. These vehicles are so heavily armored that only a direct hit from a large caliber gun would injure them.

They move up with the tanks. They make it possible for ground soldiers to be where they are needed as soon as they are needed. They also give the infantry a degree of protection never given the infantry in any other army. As one soldier said, 'These steel walls will stop a whole lot more lead than the very best khaki shirts.' I think it is a grand thing that we are able to give these infantrymen this degree of protection."

With five hours allotted for the Congressional visit to Fort Hood, Major General William S. Biddle, Commanding General, 1st Armored Division, arranged a closely coordinated schedule, designed to show the dignitaries an armored division's key items of equipment, as well as its capabilities in firepower and mobility and the flexibility and control provided by its armor-protected communications.

The group arrived by air from El Paso's International Airport after visits to Fort Bliss, Texas, and White Sands Proving Grounds, New Mexico. After honors had been rendered, the party was transported by bus to the Manning Mountain area of Fort Hood and was served a roast beef luncheon prepared by mess personnel of Headquarters and Service Company, 1st Tank Battalion.

Next on the "Operation Congress" schedule was a visit to the static dis-





play of basic armored units and equipment.

At the display, General Biddle told the legislators that Fort Hood, though comparatively young, is already one of the nation's great permanent military installations. "It is growing both in size and population. It is ideally suited, from the viewpoints of both terrain and climate, to the training of armored formations; and it is becoming our greatest armored training center."

The manner in which Armor fits into the scheme of modern warfare was also discussed by General Biddle:

"Armor can disperse and assemble quickly without loss of control. Armored vehicles provide relative protection to their crews from the effects of nuclear explosions. Therefore, Armor is particularly suited to the modern battlefield, both in exploiting our own tactical atomic strikes and in overcoming the effects of similar strikes by the enemy. Armor is both designed and trained for that purpose; and therein lies its greatest value today. It is the very latest mobile force on the battlefield."

Apparently, Congressman C. W. Bishop (R), Illinois, a member of the Armed Services Committee, agreed. Representative Bishop commented later, "Armor has a definite place on the team of defense. There would

be no doubt in anyone's mind as to the capabilities of Armor if they could see the demonstration we saw this afternoon."

Summing up Armor's position in the vital defense structure, Lieutenant General I. D. White, Commanding General, Fourth Army, said: "The Army is seeking every opportunity to substitute machines combining protected mobility and firepower for masses of men. In the past there have been many occasions where the infantry sustained terrific casualties attempting to reach their objective in time to capitalize on the shock action of the tanks. Now the armored division can mass all of its essential elements—tanks, artillery, engineers, and infantry under complete armor protection.

"The impact of this protection upon the morale of the fighting man as well as its tremendous tactical possibilities in connection with the use of unconventional weapons, both on the offense and the defense, is of great importance in our plans for defeating the masses of men employed by our potential enemy," General White concluded.

Lieutenant Colonel Marshall B. Allen, 1st Tank Battalion commanding officer, was in charge of the static display witnessed by the guests. The display included a platoon of M48

tanks; a platoon of armored infantry with both M75 and the new M59 Armored Personnel Carriers; a reconnaissance platoon with their two M41 Walker Bulldog tanks and other vehicles; an M7B1 105mm self-propelled howitzer; a section of antiaircraft guns with both the M42 twin-40mm anti-aircraft gun and a quadruple caliber 50 machine gun mounted halftrack; an L19 liaison plane; and an H23 three-passenger helicopter.

Officers from representative units of the Division gave descriptive narratives on the characteristics of their organizations and vehicles. Possibly the most graphic was the comparison between the M75 and the new M59 Armored Personnel Carriers. The M59, which was made completely amphibious and given a lower silhouette, with a considerable saving in cost, amazed the Congressional visitors by its more rapid method of dismounting its infantry squad through its ramp-type rear door.

Before leaving the static display area, the visitors inspected the vehicles and their crews.

Later, "Firepower, Mobility, and Shock Action" were demonstrated at the Manning Mountain tactical problem area. Seated on a hillside observation post, the Congressmen first saw a firepower demonstration showing the accuracy and destructive power



of Armored weapons firing individually at targets and scoring mainly first-round hits. This phase of the program was concluded when the armored vehicles on the firing line—including the M48, M41, M75, M59, M42, and M7B1—converged a mass of fire on the targets with a deafening roar.

Then the tactical demonstration began, with Colonel James B. Quill, Combat Command A commander, narrating.

A Company of the 4th Tank Battalion, reinforced by two platoons of armored infantry from D Company, 25th Armored Infantry Battalion, moved into an assault under a barrage of fire laid by the 68th Armored Field Artillery Battalion.

The visitors were shown how tankers and armored infantrymen moving under time fire are able to advance while their own artillerymen are saturating an area with fire, how infantrymen can also advance within the protective skins of the armored personnel carriers, how an attack can be directed from the air by means of divisional light aviation, how Armor can move in rapidly on an objective and mop it up, and how communications are effectively utilized to control the speed of attack.

The clockwork precision and organization of the attack, the rapidity with which an enemy can be taken under fire, and the versatility of the task force—these points, also illustrated during the demonstration, accentuated Armor's capabilities to the Congressmen.

The visitors watched as an enemy antitank weapon, at one point in the attack, knocked out a friendly tank. Armored infantrymen in their APC's were diverted by a radio message to the flank to knock out the threatening fire. Dismounting from the carriers, the infantrymen moved rapidly on foot into the woods, containing the enemy while tanks covered them with supporting fire.

This speed of movement and maneuverability and the quick reaction of an armored force to a new situation prompted Representative William H. Bates (R), Massachusetts, to say, "I was mostly impressed with the essential necessity of coordination between the units within an Armored Division."

In the same vein Congressman Vic-



A platoon of 48's in an assault demonstration before high government officials. U.S. Army

tor Wickersham (D), Oklahoma, House Armed Services Committee, added, "The most impressive part of the demonstration in my opinion was the splendid control. The number of units able to combine and act as one powerful armored force showed the true capabilities of such a unit."

Hiram W. Dow, a civilian aide to the Secretary of the Army from New Mexico, said, "The Army is doing an effective job. I wish everyone could have seen this demonstration so they could have benefited from it. It would help them better appreciate and understand the terrific responsibility placed on our Armed Forces today."

The Honorable George H. Roderick, Assistant Secretary of the Army, said he thought it had been a well-organized program which the group had witnessed at Fort Hood. Also, he said that what they had seen gave a picture of the "new look" in military affairs today.

Certainly the concept that warfare in the era of the atom bomb is solely a push-button matter was further disproven by the demonstration of the 1st Armored Division before this critical audience. The comments of these key governmental figures confirm the

paramount importance of Armor in the American military picture.

Their remarks might well be added to those of General Bolte during his principal address at the Armor Association's 65th Annual Convention at Fort Knox, Kentucky, on January 29th, when he stated "I want to assure you that the concept of mobile warfare is acquiring added importance as the effects of new weapons and their influence upon tactics and strategy are studied at higher levels. Armor will continue to be a major force upon the battlefield and the necessity to have mobile, hard-hitting armored units immediately available for any emergency is of paramount importance."

Significant, too, to Armor's increasing importance, was the activation of the 4th Armored Division on 15 June and the assumption of control of these two Armored Divisions by III Corps, under command of Major General Hobart R. Gay.

These factors, combined now with the reactions of the members of the visiting Congressional party and other prominent officials, lend further validity to the theme of the demonstration:

"Armor, the Arm of Decision on the Atomic Battlefield."



# How would you do it?

## SITUATION

You are the platoon leader of a tank platoon which is a part of a tank company engaged in an offensive operation. You are deployed and advancing by sections under enemy fire. As you continue your advance one of your tanks is knocked out by a mine. A quick reconnaissance indicates that a minefield extends across your entire front and is covered by enemy fire from both flanks. In order to accomplish your mission you must pass through the minefield. Engineers and armored infantry are not immediately available to you; however, you have available on call the fire support of one battalion of artillery and the battalion 4.2-inch mortar platoon. A mild breeze from your right flank favors your use of smoke. How would you accomplish the crossing of the minefield?



TURN TO NEXT PAGE FOR SOLUTION....

AN ARMORED SCHOOL PRESENTATION

AUTHOR: MAJ LUCAS

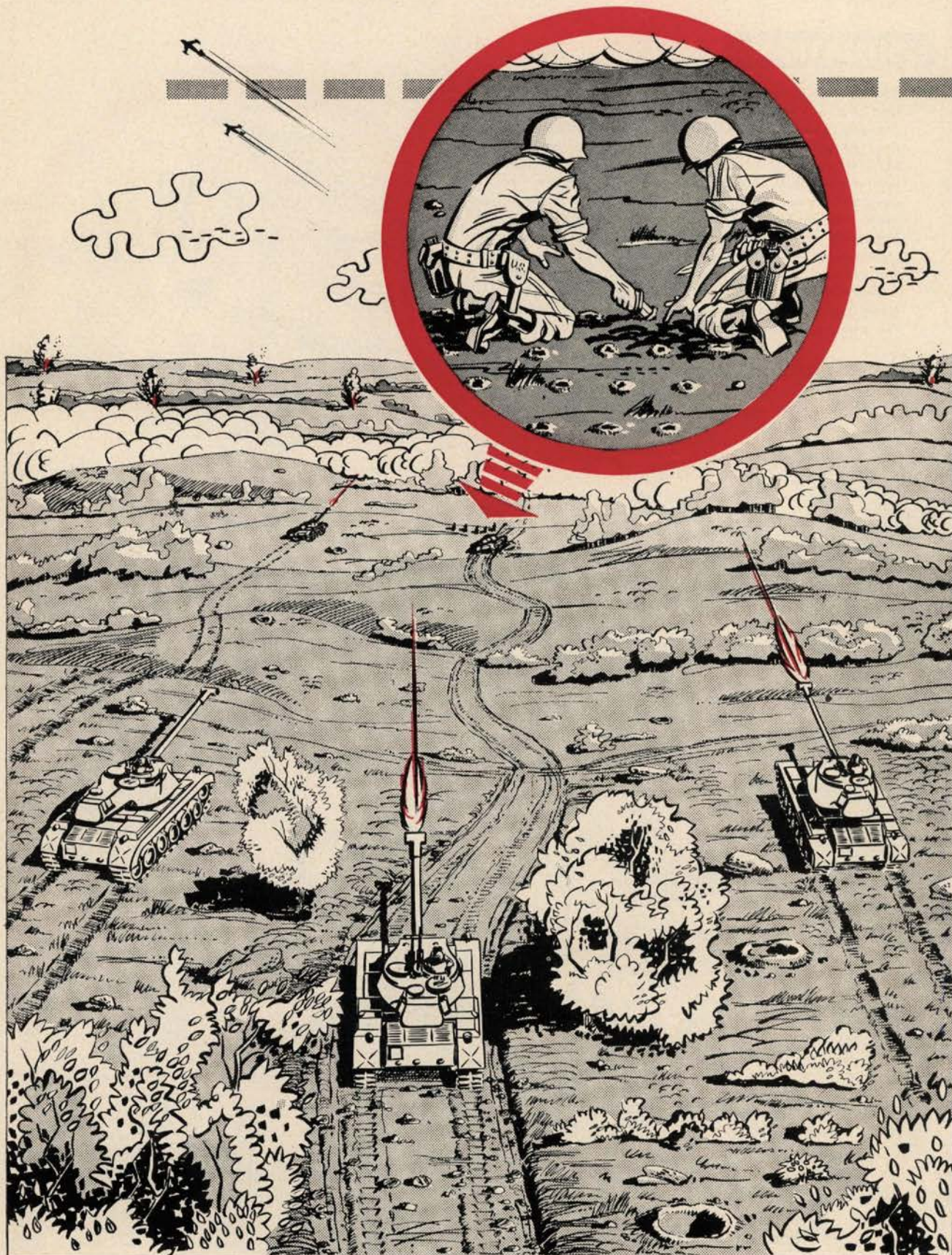
ILLUSTRATOR: CPL R MISIAK

ARMOR—July-August, 1954

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# How would you do it? Solution





## Explanation of Solution

Have the disabled tank fire smoke (shells or grenades) for its own protection. Halt the remainder of the platoon in hull defilade in position to cover the disabled tank and the minefield by fire. Dismount one man from each tank of the platoon including disabled tank (if possible), leaving sufficient personnel in each tank to provide direct fire support and to move the tank should it become necessary. A five-man probing party can clear a path 15 feet wide which is sufficient for the passage of your tank platoon. If only four men are available, each man will have to clear slightly more than a yard of front through the minefield. Form a probing party of the crew members dismounted from the tanks and breach a lane through the minefield. While the probing party is moving into position and during the clearing process, the artillery will place fire on the enemy positions covering the minefield. The 4.2-inch mortars will conceal the actions of the probing party by placing smoke in front of the right flank of the platoon and between the minefield and the enemy positions. The four remaining tanks should fire on targets most suitable to direct-fire weapons. When the minefield has been breached and clearly marked, the tanks will pass through the lane by sections and continue the advance.

**1** Artillery and mortar fires are not effective against minefields, because the fires disrupt the mine pattern and make breaching operations difficult and costly.

**2** The artillery is the most flexible support weapon and should be employed against the enemy positions.

**3** The 4.2-inch mortars are very effective for smoke missions and should be employed to place smoke to conceal the actions of the probing party.

**4** With five-man crews in the tanks, it is an easy matter to select the probing party; the bow gunner can be dismounted without upsetting the immediate combat effectiveness of the tank.

**5** If the tanks have only four-man crews, the problem is more difficult. The driver must stay with the vehicle so as to move the tank for new firing positions or if the position becomes untenable. The driver can move up and take over the loader's duties and still be available to drive the tank. This would release the loader for probing party use and still retain the driver, gunner, and tank commander with the tank. Another solution would be to release the loader for the probing party, leave the driver at his duties, have the gunner become the loader, and have the tank commander fire the gun from his normal position.

**6** It is not likely that the crew of the disabled tank can help with the probing, because we can normally expect casualties from the mine. The crew of the disabled tank will have their hands full taking care of the wounded and keeping the guns of the disabled tank in action.

**7** As the mines are located, they should be uncovered and 50-yard lengths of wire rope or other available material attached to each mine. After the lane has been probed and all mines located and counted, the mines will be removed and detonated one at a time, to make sure that all mines are removed. To detonate or remove each mine as it is found would take too much time and make future probing more difficult.

**8** The tanks will pass through the cleared lane by sections, with one section covering the movement of the other section by fire. When both sections are through the minefield the platoon will continue the advance. The smoke of the 4.2-inch mortars will be lifted as the last section of tanks passes through the cleared lane.



## ***The Civil Schooling Program for Army Officers***

**U**NDER appropriate Regulations, Army officers are in training in civilian colleges and universities and in industry throughout the United States. In the colleges and universities two programs exist, the long courses and the short courses: the long courses normally extend from a minimum of nine months to a maximum of twenty-four months; the short courses embrace a period of training of five months or less. The purpose of the Army graduate education program in the long courses is to augment training conducted in service schools in order to provide a limited number of officers with specialized knowledge in scientific fields which will make them capable of working with civilian scientists and directing research and development in military fields, and in social sciences that will enable them to cope with the political and economic problems with which the Army is concerned. Essential language and area training is offered with a view to assignment to duties in which a knowledge of these languages is essential, as for example, intelligence type assignments.

Annually, a few officers are enrolled for graduate work in various academic fields preparatory to their assignment as instructors at the United States Military Academy.

Training in short courses is usually in very limited and specialized fields and provides the officer with training essential for a particular assignment.

To be eligible for graduate training in long courses officers must meet these requirements: be Regular Army; be not over thirty-five years of age (waiver may be granted where circumstances warrant); have an acceptable undergraduate record, and usually have acquired a bachelor's degree or have completed substantially the requirements for that degree; agree to serve a minimum of four years after the completion of his graduate studies.

Regular officers of the Combat Arms may apply for civil schooling in

long courses, normally on the master's degree level, in fields of the physical sciences (for example, nuclear physics, guided missiles, electronics, etc.) which courses usually run twenty-four months, and in fields of the social sciences (international relations, psychology, business administration, journalism, etc.) which courses normally run for a period of twelve to twenty-one months. In very exceptional cases training is on the doctorate level. An officer may list in his application two or more subject matter fields in which he desires graduate training, and may state his preference of institutions. Applications may be forwarded at any time to The Adjutant General, ATTN: AGG-ES. Applications are kept on file in Civil Schools Section, Education and Specialist Training Branch, Career Management Division, Office of The Adjutant General, and are considered each time when selections are made to enter officers in school to fill requirements in subjects of the officer's choice.

Regular officers of the Technical and Administrative Services may apply for long courses to their respective career management branches. Specific subjects in which officers will be trained by the Technical and Administrative Services may be obtained from the Service. In most of the Services civil schooling is offered in the physical and engineering sciences and in the social sciences.

Officers may enter school at the beginning of the semester in September, February, and June, whenever they are made available. All regular tuition and fees required by a university are paid under Army contract with the university. In addition, up to \$80.00 reimbursement per fiscal year is allowed each officer for the purchase of textbooks and expendable supplies used in his courses. Where a thesis is required, reimbursement up to \$50.00 is allowed to cover costs of typing and other expenses incurred in its preparation.

Upon completion of long courses, each officer is required to serve in a utilization assignment in the field of his training for a period of approximately three years on the Department of Army staff, headquarters of continental and overseas armies, and major commands and installations, after which time he returns to the

normal career pattern of his branch, unless he applies and is accepted for an additional assignment in his field of specialization. Unless the officer so desires, participation in the program does not make an officer a specialist; however, officers may from time to time be assigned to duties in the field of their training. An officer's utilization tour may be interrupted for the purpose of attending a service school.

Regular and EAD officers of the Combat Arms and of the Technical and Administrative Services who desire training in short courses in educational institutions or in industry may apply to their career management branches. Applications will be referred to the proper training agency by the branch. Previous college training is not a prerequisite. A list of subjects in which the Department of the Army is desirous of training officers in short courses is published from time to time in letters and directives to Army commanders and commanders at major installations.

At the present time short courses in Psychological Warfare and in Advanced Management are offered to officers of all Arms and Services. The Psychological Warfare course is being conducted twice a year in February and September at Georgetown University, Washington, D. C., and extends for a period of 16 weeks. Officers in the grades of first lieutenant through colonel are eligible.

The Advanced Management Program is conducted twice a year commencing in February and September at Harvard University for a period of 13 weeks, and commencing in March and October at the University of Pittsburgh for a period of 9 weeks. Officers in the grade of lieutenant colonel and higher are eligible for the Pittsburgh course. For the Harvard course only colonels and general officers are eligible.

Prior to June 1946 the civil schooling program for Regular Army officers was a limited one, applicable in the main, only to a relatively small number of officers of the three Arms and of the Technical and Administrative Services, particularly Corps of Engineers, Signal Corps, Ordnance Corps, Quartermaster Corps, Judge Advocate General's Corps and Medical Services.

The expanded graduate civil school-



ing program for Army officers was established for Combat Arms officers, as a then Ground Forces program, in June 1946, at which time 164 officers were entered in universities of the country for graduate work on the master's degree level. This program was and is a long course program.

Since 1946 there have been 2,046 officers enrolled in the long term courses under the Army graduate civil schooling program, of which number approximately 800 were of the Combat Arms.

At this time there are enrolled in the long term courses, for which presently only RA officers are eligible, a total of 375, of which number 119 are of the Combat Arms. This number does not include officers of the Medical Services, since that program is of such highly professional and specialized nature.

The appropriate regulations concerning the civil schooling program are, for long courses:

1. SR 350-230-1, Training of Military Personnel at Civilian Institutions
2. SR 350-20-1, Selection, Administration, and Assignments for Officer Students
3. SR 350-230-50, Training at Civilian Law Schools
4. SR 350-230-52, Civil Schooling for Regular Army Officers of Armor, Artillery, and Infantry
5. SR 350-380-1, Foreign Area Specialist Training
6. SR 350-230-55, Civilian Education for Regular Army Transportation Corps Officers
7. SR 350-70-1, Industrial Mobilization Training Program

The regulations governing for short courses are:

1. SR 350-230-65, Psychological Warfare Course at Civilian Educational Institutions for Army Officers
2. SR 350-20-1, Selection, Administration, and Assignments for Officer Students
3. Circular 10, dated 13 Feb 53, Advanced Management Training of Officers

Additional information regarding civil schooling may be obtained by writing The Adjutant General, Washington 25, D. C., ATTN: Civil Schools Section, Education and Specialist Training Branch, Career Management Division.

# LET'S HAVE A LITTLE LESS "PERFECTION"

by Captain Paul B. Nelson, Jr.

**L**ET'S stop insisting on sheer perfection! Let's allow our people to make a few healthy mistakes! The present general policy which refuses to recognize the long-range usefulness of error—so far as the growth of the individual is concerned—is hampering the development of our young leaders.

Little men up and down the line are worrying themselves to the point of ulcers about the possibility that someone might make a mistake. So, instead of telling their subordinates simply to get such-and-such a job done, they go into all kinds of detail telling them just how to do it. This is the wrong procedure for at least four reasons:

1. It's a serious encroachment on the prerogatives of their subordinate commanders.
2. It usually fails to consider those many lower-level aspects of the problem with which these little men are not familiar.
3. It won't prevent the mistakes they're trying so hard to avoid. Man's fallibility remains the same regardless of his rank or position.
4. It serves to deny the subordinate commander the opportunity to foster the growth of his own young leaders.

Consider, for example, the plight of a typical company commander. He may know full well that the best way to develop one man's latent ability is by giving him a job to do on his own—a critique of his mistakes to follow later—but he's often prevented from doing this by one of those directives that reads: "The company commander will personally . . ." So the man that really needs the experience doesn't get it. Instead of practicing how to be a "Chief," he's once again just a "Senior Indian."

I submit that the best way to avoid mistakes is by achieving a state of complete inactivity. But, unfortunately, inactivity results in a lack of progress. So we might logically conclude that a policy based primarily on the need for avoiding *all* mistakes is also one which will tend to inhibit real progress.

We've got to realize that mistakes and errors in judgment are necessary by-products of individual growth. So let's give our young leaders the responsibility they long for and casually accept the fact that they're going to make some mistakes as they learn. These *little* mistakes—and most of them will be downright trivial—will hardly have an adverse affect on our national security! And they'll really be quite useful as instructional aids to our young commissioned and non-commissioned officers.

A man can learn something from making a mistake. He learns nothing at all when, shielded by directives from responsibility, he never gets a chance to exercise individual initiative or leadership. True, his record might remain completely unblemished—but he'll be no better a man for having done nothing!

Let's have a little less "perfection"!



## 65 Years Ago

The most striking feature of these maneuvers has been the leading part played by the cavalry; every day it was arranged that by borrowing and interchanging there should be eight cavalry regiments with each army corps, and their work was not confined to scouting and covering the advance of the army, but the greatest importance was given to the working of them in large masses. Since the days when battles were fought out by cavalry, under such leaders as SEYDLITZ, larger forces of cavalry than those which were brought together on the day of the cavalry maneuvers have seldom, if ever, been assembled and handled as they would be on the actual field of battle. The ease with which this large force of sixty squadrons was maneuvered, and the precision with which its component parts moved, reflected the greatest skill on the part of the leaders and accuracy of drill and discipline of the part of the men. Judging by the masses in which the cavalry moved, and the effect sought for from their charges, much more is expected to be done by "shock" than is supposed. The front of armies will now be completely covered by cavalry, and their great role will be to prevent the enemy discovering the movements of the main bodies in rear, while they thrust themselves through a similar veil of cavalry which covers the enemy, so that the first phase of a campaign will most probably see a great cavalry engagement.

CAPTAIN J. F. MANIFOLD

*The German Cavalry at the Imperial Maneuvers*

## 50 Years Ago

The type of dragoon is the ideal which it has followed for a long time; that is to say, a cavalryman who ought equally to be able to charge with the saber or to fight on foot, with fixed bayonets or with rifle fire. All its organization and instruction tend toward this end. These have in view to give the Russian cavalryman the technical education necessary for fighting as well on horseback as on foot, using turn about—following the necessity of the moment—the saber and shock action, or the magazine rifle, equipped with its bayonet, for fighting on foot. A numerous horse artillery (a minimum of one battery to a brigade—we have even seen one battery to two squadrons) will complete its technical value and will give great independence to the more or less numerous fractions possessing these elements. To attain this result, the education of the Russian cavalryman and his mount must, however, relegate shock action to the rank of secondary qualities—preserving, however, its relative importance, and keeping in view, as essential qualities, mobility and endurance.

CAPTAIN C. D. RHODES

*Reprints and Translations*

## 25 Years Ago

If the Mechanical Force is to develop its full powers, it must depart from the old methods. It must break away from traditions which were fixed before the advent of fast powerful fighting machines, and seek new ways to apply the old principles. Before it can win a place as a worthy member of the combat team, it must develop new methods which are better than the old. An organization to be useful for this purpose should be one that is committed entirely to the future.

One solution of the problem is to resurrect the Tank Corps. Tanks have been the nucleus for experiment and will undoubtedly form the backbone of the Mechanized Force.

The fast tank chassis will be the most important single item of equipment, because it will be utilized not only by the Mechanized Force, but also by many other branches. As it will necessarily be a special vehicle (noncommercial), it should receive special consideration from the men who will handle it in time of war. There will be many other necessary items of equipment which must fit together in the operations of a Mechanized Force and in coordinated mechanization plans for the whole Army. A single responsible agency to execute War Department policies on these matters is needed. That agency, if we may judge from war records, might well be the Tank Corps.

MAJOR C. C. BENSON

*Mechanization—Aloft and Alow*

## 10 Years Ago

In May of 1940 the German blitzkrieg of France was predicated on fast moving armored divisions cooperating with dive bombers and infantry. The overwhelming successes of the Panzer forces were a challenge to the resourcefulness and inventiveness of military leaders all over the world. The antitank doctrine of the United States Army at the time of the fall of France was contrary to our historical military policy in that it implied a passive defense, rather than offensive action. Only the armored divisions thought in terms of aggressive methods to combat tanks.

General Marshall issued a directive to his staff: "Find a solution to the problem of defense against armored forces—using an offensive weapon and organization." As a result of this directive, tank destroyers, armed, equipped and trained for the specific mission of destroying hostile armor, were created. The development of American tank destroyer doctrine has had great influence on the British antitank doctrine, and it is pertinent that both Russian and German doctrine has developed along similar lines.

COLONEL PETER C. HAINS, III

*Employment of Tank Destroyers*



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**"For an Allied world surfeited on gloom, defeat, and despair, the epic of Bataan and Corregidor was a symbol of hope and a beacon of success for the future."**

**THE FALL OF THE PHILIPPINES.**  
By Louis Morton. From the series *United States Army in World War II*. 626 pp. Washington, D.C. Government Printing Office. \$5.25.

Reviewed by  
**MAJOR GENERAL  
CHARLES A. WILLOUGHBY**

**T**HIS volume is the fourth of eleven in the "War in the Pacific" now being compiled by the Office of the Chief of Military

History, Department of the Army. It is one of the best, though the entire series is of a high order, from the viewpoint of style, readability and orthodox historical research. One can pause profitably here to review this stupendous and brilliant undertaking. Those of us who served at Fort Leavenworth, Kansas in the thirties, may

These photos have been reproduced through the courtesy of the U.S. Army Signal Corps from captured Japanese drawings. The appropriate artist's name appears below his drawing.

lish the Civil War collection. The modern undertaking is on a more vast scale and is being developed at an astonishing rate of production. The editor-in-chief, Dr. Greenfield, has given some intriguing statistical data: his writers will have to delve into 17,120 tons of Army records which would normally fill about 200 miles of standard file cases. There is no doubt that the Army series is a colossal enterprise and Dr. Morton's "Fall of the Philippines" is on a par with other distinguished titles in "The

—The Author—



Dr. Louis Morton served in the Pacific during World War II as an Historical Officer. He is presently Chief of the Pacific Section, Office of Military History, Department of the Army. Dr. Morton is also the Deputy Chief of the Current Branch covering Korea and the present National Emergency.

recall that I attempted a course in analytical military history which was sponsored by the late General Heintzelman, a first-rate soldier of great erudition, who had a flair for the drama of history. It was a relatively modest attempt to "write history from original documents and to test the validity of these sources." The student delved into more than a score of volumes dealing with the War of Secession Records—but they were not "history"; they were an archival collection of "sources," fragmentary bits of documents, reports, orders, commentaries, etc. They were excellent raw material for digest, speculative source material to compel the student to read, sift and appraise before developing his own narrative, but these "Records" cannot compare with the scholarly undertaking of this modern, historical series. It took more than thirty years to compile and pub-

—The Reviewer—



Major General Charles A. Willoughby, Retired, served as General MacArthur's G2 throughout World War II. After the War he held the same post as Intelligence Officer for the Commander-in-Chief of the Far East until he retired in 1951. He is co-author of a new book entitled "MacArthur 1941-1951."



United States Army in World War II." Without detracting in the slightest from the superior quality of this volume, there are certain points that have taken a coloration, a "nuance" that merits occasional adjustment. The facts are not questioned, but there is the variable of interpretation, the many facets of equal merit, collateral factors that may not have been given the last possible ounce of weight (?) In the end, of course, these are matters within the privilege of critique. The point I raise, perhaps, is one of phraseology in a selection of quotations to assist reviewers, which is another way of stating that certain tendencies are thereby stimulated in advance, "colour values" are determined *a priori*. I propose to develop this thesis as I list these quotations and their historical impact. It is of course quite possible that I am subconsciously prejudiced on the side of MacArthur, after twelve years of uninterrupted service on his staff, in the period 1940-1951—while Dr. Morton holds rigidly to a professional neutralism as a duty; perhaps the pendulum of interpretation oscillates nervously between us?

It is stated somewhere:

Here is the first complete account of the biggest military disaster suffered by U.S. forces in World War II . . . the surrender of an Army of 120,000 men, the largest single surrender in the history of the United States. . . . Defeat brings into sharp focus the causes that led to failure and provide a fruitful field of study for those soldiers and laymen who seek in the past the lessons for the future. . . .

It is a credit to Dr. Morton's impartiality and meticulous attention to detail that his book accurately reflects the "causes that led to failure." The Philippine Army which was to furnish the bulk for defense was conceived on a mobilization structure of ten (10) divisions. Said Morton: ". . . Time was running out. When war came, not a single division had been completely mobilized and not one of the units was at full strength. While it is not possible to state definitely the strength of the Philippine Army by mid-December 1941, the total divisional reserves would be about 75,000 men. The training of this Army was beset with numerous difficulties. In many units, there was

a serious language barrier: the men of one division spoke Bicolanian, the officers spoke Tagalog and the American instructors spoke neither; there were First Sergeants and Company Clerks who could neither read nor write.

Training facilities and equipment were non-existent. The 31st Div. P.A. was typical: the men were equipped with the Cal-30 Enfield rifle used in World War I; the stock was too long for the small Filipinos and the weak extractor often broke and could not be replaced. Artillery equipment consisted of 8 World War I Model 75mm guns, delivered to the division on the evening of December 7th—but without sights or fire control equipment. Organic transportation was virtually non-existent.

The training of this division began theoretically on September 1st but it was not until November 24th that the men fired their rifles on the target ranges; the divisional signal company was commanded by a Filipino without technical training; he was unable to establish radio communication with his own units in the same camp. "Ad infinitum et nauseam." The same things could be said of many other Fil-American units.

These Philippine divisions had never served as divisions before; their component parts had hardly gone beyond the school of the company and the battalion. The reason? Too little, too late, too improvised. This hastily assembled "Army" was thrown against veteran Japanese divisions, the victors of Hong Kong, battle-wise units from China, armed to the teeth, completely integrated, trained for any kind of warfare from amphibious landings to jungle patrols. When an appraisal is made in terms of "the greatest military disaster suffered by U.S. forces in World War II," the relative degree of training between Japanese conscripts and Filipino rice farmers becomes a valid factor. So does the overall effort made by the Japanese high command. The Historial Division in Tokyo developed some interesting, pertinent data taken from the archives of the Japanese Ministry of War. The Japanese main effort was directed against Luzon, Manila and Bataan. Only about six of the ten Filipino divisions were allocated to Luzon; the others were stationed in the Visayas and in Mindanao. In this connection, a breakdown of total Japanese strength used in the Philippines Campaign, 1941-1942 is reveal-



Assault on Negros Island.

Koiso, Ryohei



ing and shown in the box at the bottom of the page.

It will be difficult to assess correct Fil-American strengths; the P.A. seems not to have made available reports after Oct 31/41. In any event, the Japs hit Luzon with great strength and the fate of the Philippines was decided there, not elsewhere; troops in the Visayas and in Mindanao could not influence Bataan.

Nevertheless, the combined Fil-American held out on Bataan and Corregidor for nearly six months, when Hong Kong and Singapore fell in as many weeks though they were immeasurably superior, modern installations. This delay threw the timetable of the Imperial Japanese Staff out of gear. Manila Bay was closed to an enemy who was frantic to use the local docks as a staging area for his further thrusts into the South Pacific. In our pre-war "Orange Plan," the American Navy was expected to lift the siege of the islands within half a year, an ample allocation of time. We almost made it on land—except that the Navy was *hors de combat* after Pearl Harbor.

Under that heading, we find an interesting excerpt (p. 88) in an attempt to place Pearl Harbor and Clark Field on the same level of military importance:

... The catastrophe of Pearl Harbor overshadowed at the time and still obscures the extent of the ignominious defeat inflicted on American air forces in the Philippines on the same day. The Far East Air Force had been designed as a striking force to hit the enemy before he could reach Philippine shores.

The heavy Bombers were an offensive weapon, thought capable of striking at the enemy's bases and cutting his lines of communication. Hopes for the active defense of the islands rested on these aircraft. At the end of the first day of war, such hopes were dead. . . .

There is disagreement in all sources on the figures of serviceable planes available on Luzon; they fluctuate from 100-200 first-line, combat-worthy types; anyway, we lost 18 B-17's (the other 17 were on Mindanao, where all of them belonged) and around 50 P-40's. On Pearl Harbor, they lost three times that combined total. 18 B-17's were caught on the ground; the P-40's were destroyed in aerial combat or during the heavy bombardments of their airfields; unless aloft, planes will suffer when their fields are attacked. On New Guinea later on, it was our turn to churn up Japanese airfields and burn up grounded enemy planes by the hundreds. I am afraid there will have to be a re-assessment of critical values before the loss of 18 B-17's can be classified as "an ignominious defeat"?

The old controversy of whether Brereton waited for orders or not to cut loose on Formosa, does not explain his failure to have fighter cover overhead while the bombers were refueling or arming on the ground; that is a local command responsibility and there was little that MacArthur could do about it, in Manila, 75 miles away. The assumption that if a handful of bombers, 18 to be exact, had flown to Formosa, the fate of the Philippines would have been changed, is one of the popular legends of the

period. These 18 bombers, without fighter escort, would have run into a veritable hornet's nest of Japanese, on a complex of airfields on Takao. There were between 400-500 Japanese Army and Navy planes waiting for them, with the same caliber of trained pilots that hit Pearl Harbor. Had the 18 survived, they would have returned to home stations that were burned out in their absence and they would have disappeared through attrition even with the most careful husbanding. To promote the concept of "ignominious defeat" and classify Clark Field with Pearl Harbor is a historical misnomer. In the Solomons, the Japs lost 30-50 planes at a clip, in single raids, for days on end; of course, G2 coast-watchers spotted their flight routes, gave advance warning and alerted the American interceptors. In the operations against Cape Gloucester, the same game was repeated: air spotters gave advance warnings of 30-50 minutes of approaching Japanese flight formations; in three days of aerial combat, the Japs lost 180 planes, principally bombers. These figures should put the "disaster" at Clark Field in a more appropriate perspective. As with the Fil-American mobilization in 1941, the Clark Field episode (and that is all that it was) is one more example of "too little and too late" on land, at sea and in the air, a notorious American failing that was to become noticeable from Manila to the Yalu.

The service schools go in for the elucidation of immutable military principles such as "employment of mass at decisive points" but the staff planners rarely provide for "the mass to employ"; this is one of the failings, of course, of a Republic without universal military training and services "in being" rather than "planned for an emergency." For example, "Hap" Arnold recommended the dispatch to the Philippines, *early in 1941*, of four heavy Bombardment groups of 272 planes with 68 in reserve; actually, those bombers were still in the factory stage but the realization that was needed was there—not 18, or 35 but 272 Bombers.

In another vein, the next reference (p. 230) deals with the withdrawal to Bataan:

... under desperate circumstances MacArthur brought his forces north and

#### JAPANESE STRENGTH

Fourteenth Army Headquarters .....	1,021
Army & Corps troops .....	28,447
Line of Communication troops .....	20,956
Shipping (Transportation) units .....	9,330
Divisions and Elements of Divisions .....	69,181
4th, 5th, 16th, 18, 21st 48th, 56th Divisions, 65th Brigade	
Army Air Forces .....	12,752
5th Air Group, 60th Heavy Bomber, 62d Heavy Bomber, 84th Fighter Squad, Miscellaneous Service elements	
Navy Fleet & Air Elements .....	49,752
Third Fleet, 3d Expeditionary Fleet, Naval Air Forces, Landing Detachments	
Total, all services .....	191,930
Over strength replacements 10% .....	19,193
Aggregate .....	211,123





Advancing Infantry Machine Gun unit.

Miyamoto, Saburo

south to San Fernando and Calumpit. There, in a most difficult maneuver he had joined the two forces and brought them safely into Bataan, fighting a delaying action all the way. All this had been accomplished in two weeks, during which time positions had been prepared on Bataan and supplies shipped from Manila and elsewhere. Not a single major unit had been cut off or lost during the withdrawal. The success of this complicated and difficult movement made with ill-equipped and inadequate-

ly trained Filipino troops, is a tribute to the generalship of MacArthur, Wainwright and Jones and to American leadership in the field of battle. . . .

The above is a fair and just appraisal—but there is a little known story behind it. In 1909 one Homer Lea, the strange American hunchback who served in China, fighting the Dowager Empress, published a brilliant book "The Valor of Ignorance" which was far advanced for its day in

professional military thought. Lea was undoubtedly a military genius; his physical handicap prevented him from attending West Point and joining the Army of his own country; in consequence he sought foreign service—like Prince Eugene, yet another hunchback, who fought the Turks and Louis XIVth. In his book (1909) dealing with the war in the Pacific, Homer Lea accurately forecast the lines of attack the Japanese would take some thirty years later. Lea's dour forecast was destined to become one of those works of art to which life goes for imitation. He said:

. . . As the conquest of Cuba was accomplished by landing forces distant from any fortified Port, so will the Philippines fall. Lingayen Gulf on the North coast of Luzon or Polillo Beight on the East coast, will form the Guantanamo Bay of the Japanese. . . . Japan, by landing simultaneously one column at Dagupan and another column at Polillo Bay would strategically render the American position untenable. These two columns converge on Manila at right angles. If the Americans remain behind their lines at Manila, they would in two weeks after the declaration of war be surrounded by overwhelming numbers. The lines about Manila, as demonstrated during the Spanish-American war, are incapable of prolonged resistance.

If the American forces should be increased prior to the war, it would only result in increasing proportionately the size of the enemy's column. The military and strategic conditions would not be altered nor the inevitable end retarded. . . .

This was quite a forecast! The Japanese in 1941 landed precisely at the points indicated by Lea in 1909. Knowing the rigidity of the Japanese mind, MacArthur counted on the enemy to follow Lea's forecast to the end. MacArthur's genius asserted itself in doing something else in split-second timing and a hard decision: the sideslip to Bataan. He abandoned Manila as an indefensible trap and ordered the defense of Bataan instead, which would cover Corregidor and deny the harbor of Manila to the enemy, Aguinaldo, who fought MacArthur's father in 1898, holed up in the jungle of Bataan and it took a long time and a ruse to dig him out again. Young MacArthur served in the Philippines and remembered history. If it was tough to get Aguinaldo on Bataan, he would make it tougher



Amphibious landing in the face of the enemy.

Miyamoto, Saburo



for the Japanese. The resulting operations in Bataan and Corregidor became a decisive factor in the ultimate winning of the war. First and foremost, it gave the Allies a needed symbol of courage. Hong Kong fell in two weeks. Singapore in two months, to the vocal consternation of Churchill. Yet Bataan held on.

As a stabbing sidelight on holding, there is an interesting and significant excerpt (p. 370):

... The Americans learned that hunger is a great leveller and sought the meat of dogs which tasted like lambiguanas and monkeys, as avidly as their native comrades in arms. ... After a varied diet on Bataan (a) 195-pound six-footer offered this advice to epicures: 'I can recommend mule. It is tasty, succulent and tender—all being phrases of comparison, of course. ... Iguana is fair. Monkey I do not recommend. I never had snake.' To supplement this report there is the judgment of another gourmet who declared that 'monkey meat is alright until the animal's hands turn up on the plate.'

Rations, i.e., food, had a background history: all war plans were based on a six-month estimate of defense; local purchase as well as shipments from the States were predicated on and limited by that time period. Bataan held out for five months of that prescribed period, on shrinking rations. The Japanese understood the implications perfectly. They drove the civil populations of Zambales and Bataan into the American lines and the refugees cut into our supply reserves. Advance depots at Tarlac, Los Banos and Guaga were lost when the troops retired, with approximately 15 days stockage. Troops were not averse to hi-jacking the Quartermaster motor transport needed for hauling supplies from depots to Bataan; there is a report of only 26 vehicles left from a pool of 1,000 assembled by the Quartermaster at the outbreak of the war.

The ultimate result of half-measures, half-training and half-equipment was inescapable, but the bright record of gallantry and superb endurance stands untarnished. The delineations of the end are on pp. 463-465:

... It was about 0900 when King, in his last clean uniform, went forward to meet General Nagano. He felt, he said later, like General Lee who on the same day seventy-seven years earlier, just before his meeting with Grant at Appomattox, had remarked: 'Then there



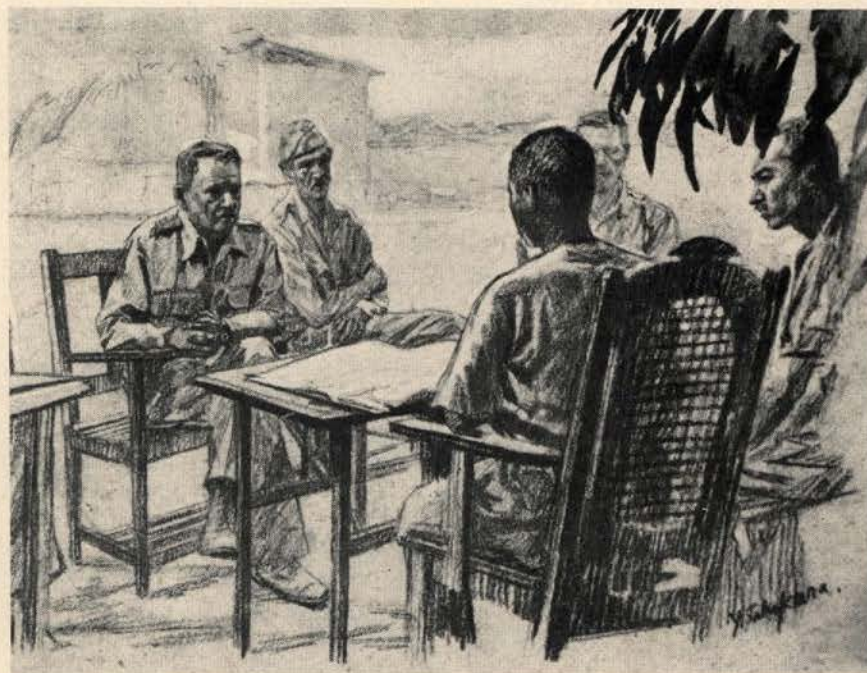
Transporting rations by submarine.

Kobayakawa, Tokushiro

is nothing left to do but to go and see General Grant, and I would rather die a thousand deaths.' ... General King rose to greet (the Japanese representative) but Nakayama ignored him and took a seat at the head of the table. King resumed his seat at the opposite end, erect with his hands forward in front of him. 'I never saw him look more like a soldier,' wrote his aide, 'than in this hour of defeat.' ...

I happen to have obtained several wartime sketches made by Japanese

artists accompanying their armies in the field. They show the Japanese soldier with superb equipment and arms, in attack, in landing operations and on the march, to put into sharp relief the comparative poverty of the Fil-American troops who somehow managed to hang on grimly and frustrate Imperial ambitions. There is a sketch of General King's painful meeting with Nagano symbolic of a fateful ending.



Meeting with General King.

SAKAKURA, YOSHIMODU



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But if it was not in his power to command victory in a time of the breaking of nations, when great forces were unleashed in the world, he fought hard and shrewdly, and the measure of his success is that Finland still lives, precariously, it is true, but with greater independence than any other nation on the borders of the Soviet Union can boast.

TRANSLATED BY

*Count Eric Lewenhaupt*

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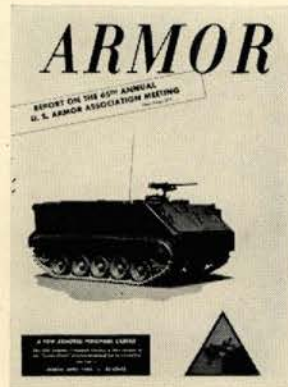
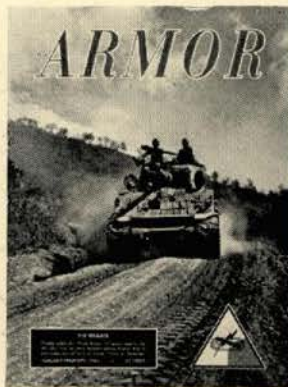
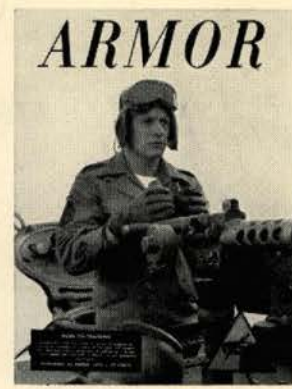
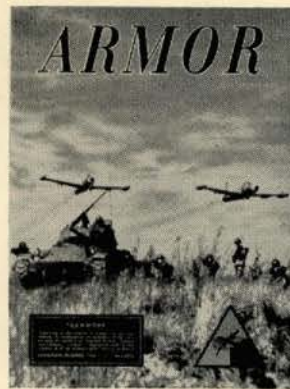
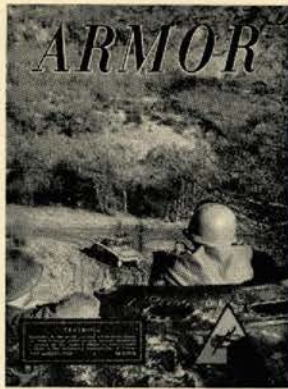
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# ARMOR



**THE QUEEN MAKES TRACKS**

(See Page 6)

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# STRATEGY

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by  
**B. H. Liddell Hart**

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*Watch for the  
exclusive review  
by  
LT. GEN. I. D. WHITE  
in the  
November-December issue*

---



Here is the classic book on military strategy. Its lessons are vital to the security of the free world. The author is one of the world's foremost military thinkers; a man generally regarded as "the Clausewitz of the twentieth century" but with the distinction that Clausewitz was a codifying thinker, Liddell Hart a creator of new strategical and tactical ideas and methods.

STRATEGY presents the theory and history of "the indirect approach" told in the course of a vivid outline of major wars of the past 2000 years. It also features a concise account of World Wars I and II, the analysis of the latter based on nine years of research into allied and enemy records.

This is the essence of Captain Liddell Hart's thesis: In most campaigns the dislocation of the enemy's psychological and physical balance has been the vital prelude to his overthrow. This dislocation has been brought about by a strategic indirect approach, intentional or fortuitous. STRATEGY shows

the comprehensive truth of this thesis and, in its analysis of the major wars of history, graphically presents the varied forms such an approach can take.

This book also offers the indirect approach in its much wider application—as a law of life in all spheres, a truth of philosophy. Liddell Hart considers the fulfillment of the indirect approach as a key to practical achievement—as fundamental to the realms of politics and commerce in relation to war.

The book answers the demand for an exposition and illustration of doctrines which have gained increased attention and use by American and other free world military leaders. Among the many features of this monumental work is an appendix in which General Yadin, Chief of the Israeli General Staff—who, like Heinz Guderian and Erwin Rommel before him, describes himself as Liddell Hart's pupil—shows how the Israeli army defeated the Arabs by direct application of the indirect approach.

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Continuation of THE CAVALRY JOURNAL

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Volume LXIII

SEPTEMBER-OCTOBER, 1954

No. 5

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## LETTERS TO THE EDITOR

### Hit 'em Where They Are!

Dear Sir:

A basic tenet of Army instruction has been that it is easier and more effective for a soldier to learn the right way initially than it is to have to break bad habits or correct methods acquired erroneously.

There can be no quarrel with this principle. However, it appears to this writer that, to some extent, in the extremely important area of individual weapon firing the Army actually digresses from this rule.

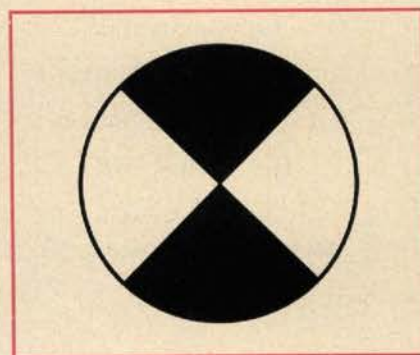
The "correct" or "perfect" sight picture becomes something less than perfect when placed against the concept set forth in my first paragraph. Why aim *below* the desired point of impact? Through long hours of preparatory marksmanship training for known distance ranges the soldier has ingrained into his store of basic military knowledge the proposition that he must aim at the *bottom* of the bull's-eye. This technique of aiming six or ten inches below the desired impact point indisputably results in rewarding scores on Known Distance ranges.

However, two questions at once present themselves. Is it realistic? Is improvement possible?

The answer to the first must be an unqualified "no". The natural instinct is to aim directly at what one wants to hit—be it a target of paper or an enemy. In the excitement of combat the soldier is apt to hold his front sight exactly on that part of the enemy he wants to hit. That is the "payoff." All of his training should insure his success. Anything that will make our soldier more fully

utilize his vast individual firepower is certainly worthwhile.

The question of improvement is a challenging one. The writer of this letter recognizes that this must have, at some time, occurred to others in the military but has found no information relative to the disposition of the problem. He ventures to suggest a modification of the present bull's-eye, which would provide a definite, clear sighting point and also enable the rifleman to aim directly at the specific point he hopes to hit.



It must be emphasized that this sketch is the bull's-eye only and does not affect the rest of the target.

The sniper is trained and the rifleman is instructed to aim at the belt of the enemy. Consistency on the known distance as well as on the transition and field firing ranges will, this writer feels, result in more hits in combat.

LT. COL. STANLEY E. BURNS  
Camden, New Jersey

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**Rates:** See bottom of contents page.



## Recognition of Achievement

Dear Sir:

Again, as in 1953, one of my officers has contributed anonymously the sum of \$38.00 to provide for a year's membership in the U. S. Armor Association, for the eight outstanding noncommissioned officers selected from the 50th Armored Division separate battalions and major commands during the 1954 field training period.

This officer feels that recognition such as this creates a great interest in Armor and that it is an excellent means for recognizing outstanding Armor soldiers. I will personally make the awards.

I am aware of the fact that enlisted men are not eligible for regular memberships, but are eligible to be "Associate members", and that they will receive the ARMOR magazine for one year.

MAJ. GEN. D. W. MCGOWAN  
Hq, 50th Armored Division

Trenton, New Jersey

• ARMOR takes pleasure in congratulating Master Sergeants Alexander D. Bombell, Robert H. Frank, Dominick G. Galano, Kenneth G. Hafner, Alfred O. Hubscher, Edward J. Murphy and Sergeants Joseph T. Scioli, and Roland de Wilde, the eight recipients of this award.—Ed.

## Membership Rates

Dear Sir:

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I cannot visualize any time whatsoever when I will not want the magazine. It is one of the finest. Thank you for your consideration and attention.

ALBIN E. REID, JR.  
Capt., Inf., USAR

Garden Grove, California

• And thank you for those kind words! We cannot imagine anybody interested in mobile warfare, especially Armored Officers regardless of component, not wanting and needing ARMOR to assist them in their endeavors. Incidentally the best rate is for a two-year period at \$8.00 for domestic and APO addresses.—Ed.

## Tactical Air Support

Dear Sir:

I have read with considerable interest your recent articles concerning the Armored Infantry and the new Armored Personnel Carrier. They have been long overdue and should be covered more thoroughly, for Armored Infantry is as much a part of the Armored team as are the Armored Artillery, the Tank units, and all the supporting technical services. It was also a pleasant surprise to see the Armored Division Trains get some recognition, well due them these many years.

I would like to stress that recognition alone is not what is important. To my way of thinking, the key to the problem lies in the fact that ARMOR is informing other Armored people about these various phases that contribute to keeping the Armor team moving, which is so essential.

One subject I believe that needs to be spotlighted is Tactical Air Support. With the continual increased emphasis on mobility, I believe that you would materially benefit the members of the Armor Association by covering this field most thoroughly.

MAJOR JAMES P. MADDEN  
Arlington, Virginia

• With the suggestion of Major Madden we agree most heartily. We have been trying for some time to obtain material on Tactical Air Support and hope to publish something in a forthcoming issue.—Ed.

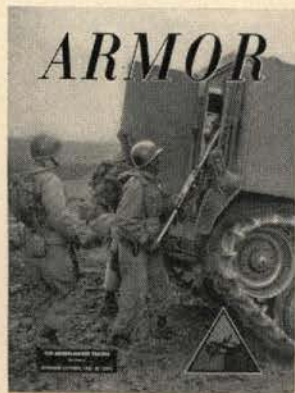
# SOVIET MILITARY DOCTRINE

by

Raymond L. Garthoff

This book is an analytical study of Soviet "principles of war." It inquires into the guiding doctrine of Soviet armed forces, the foundation of their strategy, and their employment in war. It is neither a popular treatment of the Soviet Army nor an anecdotal history of that Army in World War II. It is a serious study of the basic military science of the USSR.

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## THE COVER

The cover shows Sergeant Wayne Davidson, Company A, 43d Armored Infantry Battalion, Combat Command C, 2d Armored Division, mounting up his machine gun squad during a demonstration of infantry firepower for a NATO group. The M75 APC has since been improved upon, with the issuing of the M59 APC to troop units for tests—emphasizing the efforts of the United States Army to obtain the best equipment possible for its men.



Much has been printed of late concerning the reorganization of combat units into smaller, more mobile, flexible organizations. Various news releases have speculated as to the feasibility of such a move. The reorganizing of two of our nineteen divisions for testing certain concepts has been a main topic of conversation. In fact our Chief of Staff, General Ridgway, announced certain changes when he addressed the National Security Industrial Association. Pertinent quotes have been extracted from his speech and are published here:

\* \* \*

"In its every effort, the Army is adapting itself to the implications of modern war, since the sole criterion of its ultimate worth is success in battle—victory in war.

"To the Army has been assigned the responsibility for conducting land operations in war. While this places upon the Army the requirement to be ready for the needs of the immediate present, we must at the same time plan for the future and determine what we can do now that will enable us to accomplish better the tasks which we may be called upon to perform in the future. Basic to this determination is a concept of the future shape of land warfare—a concept which is influenced by a multitude of factors.

"I take as my starting point one conviction: In any future conflict the Army will be called upon, as it always has been, for the many vital tasks which only an Army can accomplish, and which must be accomplished if victory is to be achieved. Among these tasks are the defeat of enemy ground forces, the defense of vital land, sea, and air bases, the capture of strategic territory from which to launch further attacks, the occupation of enemy territory, and the denial of such territory to enemy use.

"These tasks are absolutely essential to the winning of war, and only an Army is specifically organized and equipped to perform them. There is no magic weapon or weapons system which can eliminate the collision of opposing ground forces in their struggle for the possession of the land and the control of its people and resources, for these are the very aims and goals of war.

"The Army is, therefore, deeply interested in any method by which our mobility can be increased. In the air, Army helicopters have proven themselves in Korea to be most versatile vehicles. For transportation of troops and supplies over difficult terrain, for the evacuation of the wounded, for reconnaissance and for enabling the commander to move quickly to the point of decisive action, the helicopter is excellent. It increases our battlefield potential by increasing our mobility, and

gives the commander the ability to maneuver troops quickly over the battle area.

\* \* \*

"While the Army stresses mobility by air, we are not neglecting ground mobility. Improved vehicles for all types of weather and terrain from the arctic to the tropics and for mountain, desert, jungle, or swampland are being developed, to ensure that wherever troops are called upon to fight they can maneuver and be supplied. Armor, with its recognized characteristics of mobility and firepower, is inherently well suited for atomic warfare. The Army has this year included a third armored division in its force of nineteen combat divisions so as to take advantage of these characteristics, and also partly to achieve a greater combat capability under reduced manpower ceilings.

"Greater dispersion and mobility, in turn, place greater emphasis upon reliable communications of greater range and power, and of maximum compactness. Thus, the search for better communications goes on continually.

\* \* \*

"This fall, the Army, using two of its veteran divisions, will conduct extensive tests under simulated atomic conditions seeking answers to the questions as to the influence of new weapons upon Army organization and tactics. In these maneuvers, various size combat formations of all arms will be tested. From these tests will come practical recommendations on Army organization and tactics for land combat under atomic conditions. Necessarily, of course, as part of any changes, the Army must retain its capability for so-called conventional warfare.

"Although the Army's firepower will continue to increase as present and future weapons become more plentiful, this does not warrant the assumption that the need for soldiers will become less. On the contrary, there are indications that the trend will be in the opposite direction. Although combat units will undoubtedly be smaller, more mobile and compact, the dispersion in defense more pronounced, there will be a corresponding increase in the depth of the battlefield—and certainly maintenance and support facilities and stockages will have to be multiplied in smaller but more numerous concentrations.

"Dispersion, mobility, and the increased range and destructiveness of modern weapons all tend to enlarge the area of the front-line battle zone and emphasize the need for defense in depth. More units of smaller size are required to perform the missions of fewer units of larger size. The disper-



# A LOOK INTO THE FUTURE

sion of depots and supply points and the necessity for duplicating essential installations will correspondingly increase the demands upon the units in support.

"The need for trained manpower is more acute than ever. In considering the tasks of the Army, we should realize that the amount of time available to our Nation to mobilize, train, and transport its ground combat units has been greatly decreased. Unlike World War II, Army units will be immediately engaged if any large-scale aggression occurs in the critical areas where our national interests are involved.

\* \* \*

"Man is and always will be the supreme element in combat, and upon the skill, the courage and endurance, and the fighting heart of the individual soldier the issue will ultimately depend.

"The individual soldier has demands placed upon his ingenuity, his training, and his skill that were unknown a few short years ago. At the same time, with all the scientific advances of our age, there is nothing yet devised that can relieve the combat soldier of the ever-necessary, always-hazardous task of enduring and winning upon the battlefield. It can be said that all our weapons, all our advanced equipment and our logistical efforts, have as their ultimate purpose to assist the front line combat soldier to close with enemy forces, and destroy or defeat them.

"That is why the quality of the individual soldier and the officer who leads him is so important. Because of the advanced weapons and equipment with which the soldier is equipped, the requirements of training are constantly increasing. Today's soldier must train longer and harder. He must be toughened in mind and spirit to successfully confront the ordeal of terror and hardship which modern battle will inevitably impose. He must possess the inherent ability to master the use of the weapons with which he is armed. He must have the initiative, and the daring, and the capacity for quick decision which mobile warfare in the atomic age will require."

\* \* \*

We subscribe to these theories and are firmly convinced that it is a step in the right direction. To test new ideas and still maintain a balanced force in case of an emergency is indeed sound. Many similar thoughts to those expressed by General Ridgway have appeared in the past in ARMOR. We also believe that in addition to re-vamping organization, a long look should be taken into the Command and Staffs as they are presently constituted, techniques in employing these new formations, and attitudes toward the ideas being tested.

To properly evaluate what is being determined

here, basic definitions should be given to some of the key words. Mobility and flexibility have assumed many connotations this past year. Techniques and attitudes, as they apply to organizations, should be pinpointed, hence for clarity it would be well to apply the following definitions:

Mobility—the capability of being readily and rapidly moved about.

Flexibility—easy susceptibility to modification or variation.

Technique—mechanical performance or practice of an art.

Attitude—figuratively one's position resulting from feeling, mood or condition.

To judge new organizations in their proper perspective, the attitudes of those persons responsible for the testing should be completely unbiased. They should not be influenced by past performances or their particular experiences. Nor should past performances be ignored. Many experiences are needed in order to arrive at a composite experience. The equipment, staff and techniques to be employed in testing should implement the mobility of mind and will of the commander. The commander's attitude and technique should stimulate exploration wherein all facets are considered prior to testing. He should consider all the different concepts and employ various command systems, techniques, formations, and tactical methods in the actual testing. As stated before, past experiences must be considered but the new weapons, and concepts are the primary factors.

Besides studying new organizations, a long look should be taken into our command and staff organizations. What reorganization is needed at the various tactical levels? This will depend a great deal on the results of the organizational tests to determine necessary changes.

Many accounts have been written on the assumption that with tactical atomic warfare smaller formations will be required in order to disperse rapidly and re-group quickly. Whether the assembly takes place on the line of departure, on friendly ground or deep in enemy held territory is of little consequence here. The ability to move on the ground immediately and to alter organization to accomplish whatever mission the situation dictates is essential.

To be able to command tactical, highly mobile units that are flexible requires mobile mindedness at all times. To develop leaders of this caliber is just as important as it is to change the T.O. & E. Thus, the testing of these units should include the testing of command systems and staffs as well as equipment and techniques.

The eyes of the service will be watching the results.



# THE "QUEEN" MAKES TRACKS

by MAJOR ROBERT W. LEONARD

*The Medium Tank Is the Right Hand Punch of Armor.*

*The APC, With Its Fighting Brood of Infantry, Is the Left Jab of Destruction.*

**A**TTACK and seize Hill 807!" Scrutinizing carefully the terrain in front of him from his vantage point on Hill 628, the Battalion commander weighed carefully the terrain, his mission, and the forces available to accomplish it. His Armored Infantry Battalion, with its four organic rifle companies, an attached heavy tank company, and an engineer platoon, were refitting in an assembly area three miles to the rear.

The menacing fingers of Woods 1, 2, 3 and 4 and the precipitous sides of Hill 807 left the impression that this would be a job strictly for dismounted infantry. Unwilling to relinquish the crushing power of his M47 tanks and his infantry's full-tracked armored personnel carriers, the battalion commander studied the terrain carefully through his binoculars.

The western slopes of Hill 807 were steep, but fortunately not impassable to tracked vehicles. This slope would be the key to armor over-running the objective, but to ignore the woods in front of the barren hill mass was to invite disaster from antitank weapons which could make a shambles of an armored thrust. These woods would have to be reduced before the final assault on Hill 807.

Through the long night plans were discussed with the company commanders. Coordination was effected

with the tank battalion through which the AIB would pass. Patrols probing the enemy defenses revealed that Woods 1 was lightly held, Woods 2, 3 and 4 more strongly garrisoned.

At midnight Baker Company moved to Hill 628 to set up as a base of fire. Engineers reconnoitered the three routes from the assembly area to the attack position to make certain they were free of mines. Route priority for movement of units to attack positions was carefully worked out and timed to prevent any delay or interspersing of columns.

An hour before dawn the reconnaissance platoon moved out followed by the battalion 81mm mortar platoon bound for its positions on the right flank. Simultaneously Dog Company, with a platoon of tanks, rolled towards its attack position on the left flank. Able Company followed the mortar platoon heading for its attack position with Tank Company (-) immediately behind to take up its firing positions in hull defilade on Hill 611. Charlie Company brought up the rear moving to firing positions on the west slopes of Hill 611 with some of its elements while the remainder of the company occupied an attack position behind Hill 611.

Tracked vehicles moved at a reduced rate of speed to keep motor noise at a minimum. As they approached firing positions and attack positions, vehicle commanders both tank and infantry, walked their vehicles into the exact locations which they had reconnoitered the prior afternoon. Supporting artillery dropped harassing rounds on Hill 807 to

smother the unavoidable noise.

## Phase I

All elements reported themselves in position. From his vantage point on Hill 628, the Battalion Commander gave the order to open fire. The peaceful hills erupted smoke as a curtain of fire reached out for Hill 807 and its approaches. Artillery from the supporting Field Artillery Battalion plastered Hill 807. The tanks on Hill 611 poured HE into Woods 2. The 60mm mortars of Charlie Company worked over Woods 3 as heavy machine guns of the company raked it along its length. On the right flank, the reconnaissance platoon's tank section of M41's and its 81mm mortar squad engaged hostile positions on the east slope of Hill 807. The scout section and rifle squad fired machine guns into Woods 3. Able Company with one rifle platoon and its mortar platoon smothered the tip of Woods 3 with high explosive and small arms. The battalion mortar platoon combed the length of Woods 3 with shells.

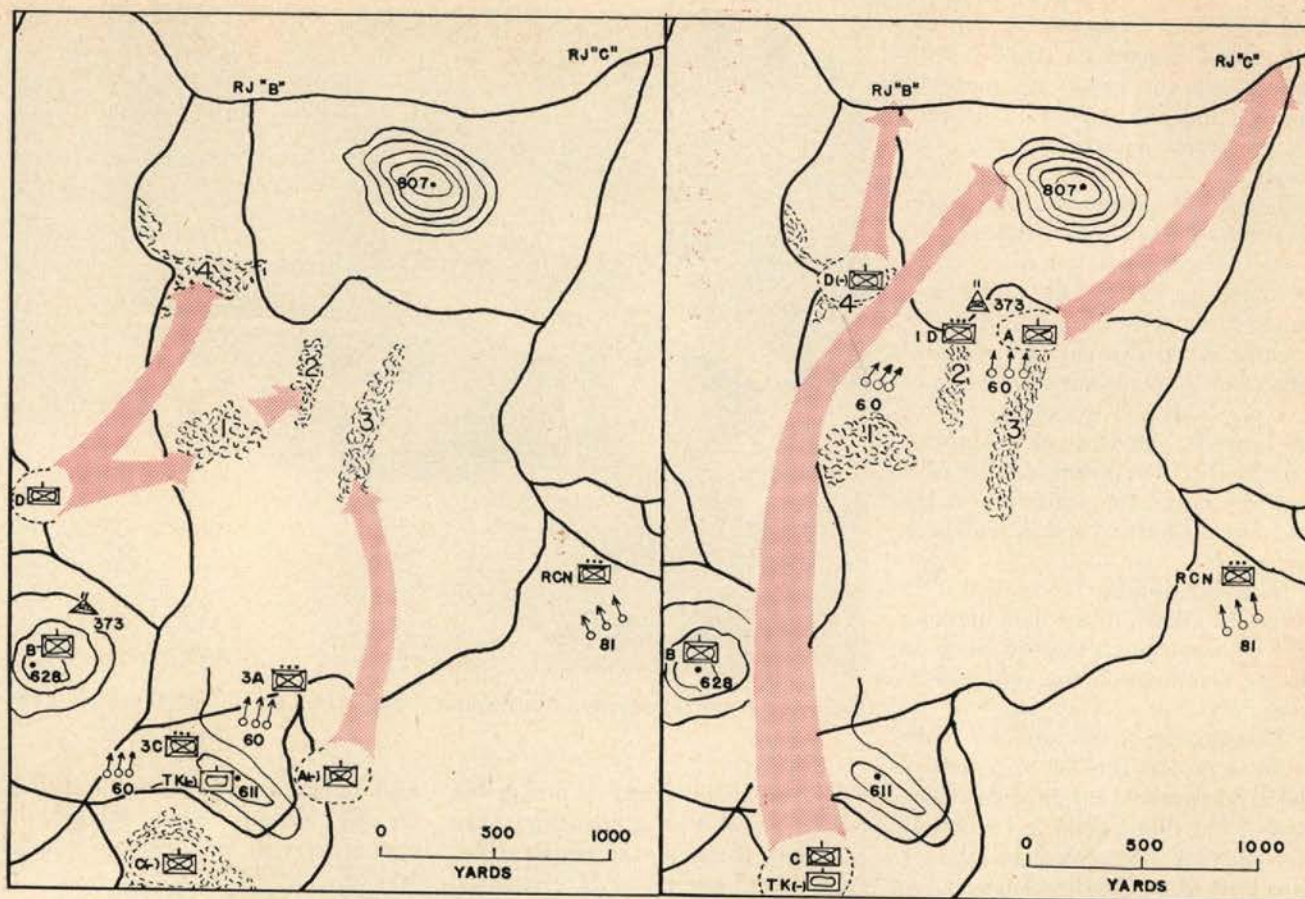
On the left flank Baker Company utilized its entire firepower to beat down resistance in Woods 1.

As the base of fire opened up with its hail of metal, Able Company moved dismounted through a fringe of woods on the right flank on Woods 3. As the lead elements of Able assaulted Woods 3, the fire pouring into that hapless position was shifted to Woods 2. The battalion's 81's moved to the crest of Hill 807 to assist the artillery in preventing any interference from that direction.

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First phase of Attack on Hill 807

Second phase of Attack on Hill 807

As Able's lead platoon disappeared into the point of Woods 3, elements of Dog Company moved mounted on Woods 1. Through the curtain of fire moved a tank platoon in line followed by a rifle platoon in its armored carriers, all vehicles rolling buttoned up. As the tanks crashed into the southeastern edge of Woods 1, machine guns blasting, the M75's closed in fast, troops erupted from them and moved through the woods in a skirmish line to mop up.

Baker Company, with its fires on Woods 1 masked, shifted its concentration of fire to Woods 2, neutralizing that area to prevent any reinforcement of enemy troops in Woods 1 or Woods 3. Meanwhile the other two rifle platoons of Dog moved dismounted on Woods 4, supported by the tank platoon and rifle platoon which had advanced to the northern edge of Woods 1. After a brief and furious fight, Woods 4 was secured.

Able Company reported it had reached the northern edge of Woods 3. Rapidly reorganizing in Woods 1, the rifle platoon there tensed itself and moved on Woods 2. Supporting

fires were lifted and the dismounted infantrymen mopped up Woods 2 which had been subjected to an unmerciful pounding.

The first phase of the battle for Hill 807 was over in less than an hour. Before the shock of the violent assault was over, the battalion commander put the second part of his plan into operation.

## Phase II

Able Company was ordered to start laying a base of fire on Hill 807 from its close-in position. Troops in Woods 2 were told to comb thoroughly the western approach to Hill 807 with the fire of all weapons. The tank platoon with Dog Company fired on targets of opportunity on Hill 807. The remainder of the company in Woods 4 intercepted the woods and road at RJ "B" by fire to prevent reinforcement or evacuation of Hill 807 from that direction. The artillery shifted to the reverse slopes of Hill 807. The battalion mortar platoon continued to work over the crest of the objective aided by the mortar platoons of Able and Dog Companies.

Baker became reserve company as

all of its fires were masked. Tank Company was moved to the rear of Hill 611 into an attack position with Charlie Company.

All was in readiness for the big punch, a mounted assault by Tank Company and Charlie Company. Smoke was laid down on Hill 807, blinding the defenders as the mass of armor moved out in formation. Circling Hill 611 and Woods 1 to the west, seventeen tanks and sixteen armored personnel carriers moved in for the kill.

Pausing between Woods 1 and Woods 4 for two minutes to realign formation, the two teams rolled towards 807 through the rapidly thinning smoke. The base of fire elements poured a hail of metal into the hill until the buttoned-up armored vehicles masked their fires. The last mortar concentration blanketed the hill as the assaulting force topped the military crest. The tanks swept over 807 while hard-running infantrymen dismounted and mopped up the bypassed and over-run resistance.

Consolidating the hill, Tank Company and Charlie Company immediately went into position to support the



attack of Dog Company on RJ "B" and Able Company on RJ "C". Both attacks were successful in a matter of minutes and Hill 807 and its eastern and western approaches were secured.

By the full utilization of fire power and shock action, the reinforced Armored Infantry Battalion had secured its objective in slightly under two hours.

Only a combat firing problem? True, but into the smooth running of the problem had gone months of hard work, months of planning, months of trial and error while tactics and techniques for utilization of the armored personnel carriers had been perfected.

Implementing the tactics and techniques laid down in the field manuals had required much improvisation in timing, coordination and communications.

The purpose of this article is to describe a typical combat operation of the 373d Armored Infantry Battalion, part of the 19th Group, even though the enemy was simulated, and the lessons learned on coordination between tanks and armored infantry. These will be discussed under separate headings.

### Communications

Radios of the 373d are in the armored band while the Group's tank battalions are in the infantry band. This seems a paradox until one realizes the roles of the battalions. The heavy tank battalions were designed for antitank and supporting roles for infantry divisions. The 373d was activated as a part of the U.S. Constabulary, working directly with an armored cavalry regiment. With its present assignment to 19th Armored Group and further employment with its tank battalions, communications become difficult but not insurmountable.

The battalion has five AN/VRQ-1 radios with two RT-66 trans-receivers in each. By exchanging an RT-66 with an RT-68 of the attached tank company, communications are established with the commander of the tank company. The tank company commander is able to operate in the battalion command net and still remain in his own company net. This transplanted trans-receiver is mounted in either the S3's ¼-ton or the



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Using external telephone, infantryman designates targets for the tank guns.

S2-S3 command track. If one of the battalion's rifle companies are attached to a tank battalion, the reverse holds true. A trans-receiver is exchanged with the headquarters of the tank battalion and everybody stays in communication.

Normally, engineers from a combat battalion are attached to the armored infantry. These engineers are communicating on the infantry band. To maintain communications with attached engineers, an RT-66 from the Headquarters and Service Company commander's AN/VRQ-1 is exchanged for an engineer's RT-68. The H&S Company commander maintains continuous communications with the engineers, transmitting messages from them to the battalion commander or the S3. These officers can switch the tank company's RT-68 to the engineer channel if they want to communicate directly.

This exchange of radios has proved invaluable in successful operations. As one of the eternal triumvirate, "Move, Shoot, Communicate," it cannot be overlooked.

Within the smaller units of the battalion—squads and platoons—where range of reception is not so vital, the "B" set or RT-70 works well. In the case of a rifle platoon and a tank platoon working together, the commander uses his RT-70 to communicate to his team. Each APC and

each tank is equipped with an RT-70 on the infantry band, solving the communication problem on a lower level.

What happens with the rifle troops dismounting and leaving their carriers? Each squad and the platoon leader has a "handy-talkie," an AN/PRC-6, which will net with the tank's radio inside his tank. If they are separated, the rifle platoon leader can still communicate with the tanks. He can also "talk" to his carriers, bringing them forward when he wants them.

When the infantry follows the tanks into an objective on foot, they should put a capable man on the external telephone on the rear of the tank, generally the assistant squad leader. By judicious use of this telephone, the infantry can pass instructions to the tanks, designate targets for them and receive instructions from the tankers.

Communications are the nerve centers of armor, the means by which their mighty muscles are employed. Regardless of different bands and different channels, communications can and *must* be worked out before armor can utilize its full capabilities of speed and shock action.

The important thing to remember is that communications must be established before the task force is committed.





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Constant practice puts the APC-Tank team on the objective at the same time.

### Formations

The formations, mounted and dismounted, as outlined in appropriate field manuals are sound and feasible. It is the application of these formations to the ground and the cross-country capabilities of the tank and the personnel carrier that require thought and practice.

On the open highway the infantry can keep up with the tankers in their APC's. Going cross-country it is another story. The length of the APC is considerably less than that of the M47 tank, 17 feet against 21 feet. Irregularities in the terrain such as gullies and ditches are negotiated with ease by the M47 but cause the carrier to behave like a skittish colt. Going at high speed cross-country over normal terrain could immobilize the infantry in the carrier's troop compartment before they ever dismounted! (Some of these deficiencies have been corrected in the M59.—Ed. NOTE.)

The speed of the tank is much greater than the carrier in cross-country moves. Taking the comparative lengths and speeds of the two vehicles into consideration, it is simple to understand how tankers can literally run away from their supporting infantry. On training exercises this has happened on innumerable occasions until the tankers and the infantry had become accustomed to the capabilities

and limitations of each other's vehicles. By dint of much training and constant repetition, the tankers have learned to base their speed on that of the carriers so they will not reach the objective before the infantry and find themselves facing a dug-in determined enemy that can only be overcome by dismounted soldiers.

In most instances the 373d Armored Infantry Battalion has set the cross-country speed at fifteen miles per hour. This set rate is brought out in the field order if the battalion directs a mounted assault. In the planning stage of an attack, the battalion commander inspects the terrain over which his companies will make a mounted assault and he determines the maximum speed.

To further insure that tanks and infantry will reach the objective at the same time, the carriers follow the tanks closely. In no case is there more than 100 yards between the tanks and the carriers. Many factors were taken into consideration when it was decided to keep the carriers tucked up close to the tanks. Less dispersion among the vehicles would make them a juicy target for hostile artillery fire. Antitank fire which missed the tanks might hit a carrier. These dangers were realized but the single advantageous fact of having the whole team on the objective at once outweighed all adverse considerations.

It was felt that the tremendous weight of tanks and mounted infantry over-running an objective simultaneously would insure a decisive result. If the tanks hit first, followed by the infantry straggling in at some interval, the violence of the assault would be lost possibly never to be regained.

As for protection while moving to close with the enemy, the tanks are more heavily armored than the carriers. However, the armor of the carriers will stop small arms and shell fragments, but not antitank fire or direct hits by artillery. The tanks will provide the carriers with active and passive protection while on the move. The tanks can move and fire, engaging the enemy's antitank weapons thus giving active protection to the following infantry. An enemy can logically be expected to fire at the target which is most dangerous to him, in this case, the tank bearing down on him. The carrier is not immediately dangerous to him. The bulk of the tank can be expected to be between the enemy and the comparatively thin-skinned carrier. Thus the carrier receives passive protection from the tank in two ways; by being a more dangerous factor than the carrier and by being first into enemy fire.

The line, wedge, and echelon formations are ideal for cross-country movement of armor in the mounted attack. The enemy situation and the terrain will govern which of the many formations will be used. The important point to remember is to not allow the tanks to run away from their supporting infantry. The two factors that will prevent this are: (1) Set a maximum speed for both types of vehicles, based on what the carrier can attain; and (2) keep the carriers closely behind the tanks.

Keep these points in mind and the tanks and infantry will reach the objective together, a balanced team that can handle any type of resistance in a workmanlike manner.

### Assault of A Tree Line

The rifle platoon of Dog Company and the attached tank platoon attacked a patch of woods, known in the problem as Woods 1. The principles involved here can and should be, applied to any attack of a treeline where it is necessary to cross open fire-swept terrain to reach the enemy



in the edge of a wooded area.

A dismounted attack by infantry would have been costly as the enemy enjoyed long fields of fire. Tanks operating alone would be extremely vulnerable when they reached the woods. The ideal solution could well be a rapid move across the open in vehicles protected from shell fragments and small arms fire. The tank-armored infantry team is made for this type of assignment.

Baker Company, from Hill 628, concentrated the fire of seventeen machine guns, nine automatic rifles, three 60mm mortars and its riflemen on Woods 1. Rockets searched out danger spots in front of Woods 1, firing at ranges up to 900 yards. All this fire was hitting a patch of woods about 200 yards long by 200 yards deep.

As the assaulting force moved from its covered attack position, this fire was intensified. The first element of a successful attack was in full swing, an adequate base of fire to keep the enemy down while a maneuvering element moved in to close with him.

Buttoned up, the tanks and carriers roared towards Woods 1. Tank fire reached out for Woods 1 as the maneuvering element added its weight of firepower to the attack. The carriers followed the tanks at 100 yards. As the tanks reached the edge of the woods, they crashed into the woods

knocking down trees and firing all their weapons. Shortly before the tanks hit the woods, the carriers put on a burst of speed so that when the tanks crashed into the woods, the carriers were right behind them. Baker Company shifted its fires to Woods 2 to prevent any interference from that flank.

Infantry poured out of the carriers, formed as skirmishers and in less than 30 seconds had pushed through the tanks to mop up the enemy in Woods 1. Watching from their turret periscopes to the sides, tank commanders ceased fire as soon as they saw the dismounted infantry come up alongside of the tanks. As the infantry pushed through the woods, the tanks followed ready for action if called on. The carriers pulled into the edge of Woods 1 and disposed themselves to protect the flanks and rear with their .50 caliber vehicular machine guns. The dismounted infantry, closely followed by the tanks, cleaned out the woods to its far edge before stopping for a hasty reorganization.

From this typical attack of a tree line by mounted formations, comes many small points that add up to success or failure in the assault.

The tanks did not halt at any distance from the trees, but crashed into the edge firing all their weapons. This is shock action. Enemy defensive positions will be placed where there are

reasonable fields of fire, normally just inside the tree line. The M47's by moving into the edge of the trees threw 48 tons of hard-hitting metal at the enemy, bringing trees down around him, firing into him. This violent action occurred seconds after a hail of fire from Baker Company had lifted.

To double the shock, seconds after the enemy looked up into the ugly snout of a 90mm tank cannon, he found himself facing the fixed bayonets of dismounted infantry moving grimly in for the kill. The choice he faces is to fight to the death against somebody already inside his position or to surrender.

Timing is of the utmost importance in this type of attack. The carriers must be immediately behind the tanks when they reach the edge of the woods. Only a few seconds must elapse before the dismounted infantry push through the tanks in order to capitalize on the shock of the tank attack. No time must be given the enemy to recover and put up an effective fight. Crew drill is the answer. Drill to teach each man his job; who opens the rear doors, who closes them, which side he takes his formation on, which hand he uses to grasp his weapon on the way out. A rifle squad should take just 12 seconds to dismount and take formation in front of their vehicle. A crack squad will do it in less.

The driver and the squad leader are the only two persons who can see where they are going in a mounted attack. The remainder of the squad sit and wait. As the carrier approaches the dismount point, the squad leader flicks on the white light over his oddment tray in the carrier. This alerts the squad. When he switches on the red light, they bail out and move to the front of the vehicle. The carrier acts like a finger pointing in the direction of the attack. The front of the vehicle always points toward the enemy so there is no doubt in the squad's mind as to which direction they assault.

It was first thought that it would be folly to crash the tree line with tanks, but actually that is the safest place for them. Only the enemy immediately to their front or flanks can fire at them. If he is a rocket gunner, he must fire through and between trees. With the friendly infantry



Armored infantry skirmishers shown successfully attacking a tree line.

U.S. Army



moving in rapidly, he must get his round off in a hurry or he will never fire it.

If the tanks halt any distance from the edge of the trees, they become a better target. The entire hostile position can fire on them from one of its flanks to the other. The armor loses the protection of the friendly infantry who must advance dismounted across the open before they can close. Therefore the tanks are subjected to enemy fire longer before the infantry can move in and mop up. The infantry themselves will take heavy casualties advancing across the open area. Shock action is lost and with it the violence that is the trademark of an armored attack.

By driving the tanks right into the edge of the trees, all these disadvantageous factors are done away with and the infantry enjoy protection from small arms right up to the moment they close.

Again the point comes up of the carriers hitting the objective, in this case, a tree line, almost simultaneously with the tanks. The timing and coordination between the units must be worked out in training beforehand so the tanks do not arrive on the objective too far in advance of the mounted infantry. The 373d AIB worked on timing until the carriers were able to close on the rear of the tanks (five yards) just as the tanks crashed the tree-line.

To avoid shooting up the friendly infantry, the tank commander must keep watching for the dismounted soldiers coming up on the flank of his vehicle. The infantryman designated to man the external phone generally races for his post to notify the tank commander he is on the ground and his buddies are moving through. This is an additional safety precaution, but still does not relieve the tank commander of the responsibility of watching for his infantry coming up to advance through him. A soldier stays on the external phone of each tank to guide the vehicle through the woods, designate targets and pass instructions to the tank commander.

#### Attack of an Open Objective

The attack of Tank Company and Charlie Company on Hill 807 was a typical assault of mounted formations on an open objective. The top of Hill 807 was bare with the exception of



The APC-Tank team moves unmolested across the valley to its objective. U.S. Army

small patches of scattered scrub trees.

The base of fire consisting of two rifle companies, a tank platoon and three mortar platoons saturated the approaches and top of 807. As the 81mm mortars laid down a blanket of smoke to cover the movement of the heavy team, this supporting fire was intensified to prevent the enemy from hindering or even observing the attack being mounted.

Under cover of the smoke, the tank and infantry company in company wedges moved unmolested across the valley floor. This move of 2,000 yards to a defiladed position between Woods 1 and Woods 4 was carried out in a matter of minutes. The two companies paused in defilade just long enough to go into a line formation, tanks followed by carriers, and then roared into the attack.

As the tanks reached the crest they swept over without a pause. The infantry dismounted from their carriers just over the crest and sped along behind the tanks mopping up pockets of resistance the tanks had overlooked. The tanks ran wild over the top of the hill while the infantry policed up the remnants of enemy troops.

The end of resistance on the hill was not the end of the job for Tank Company and Charlie Company. They immediately went into position to support Dog Company in its attack

of RJ "B" and Able for its assault on RJ "C". The two units were able to do this with maximum effectiveness as they were looking down the throat of the enemy on the two road junctions.

Two points bear looking into in this assault of an open objective—the pause in the defiladed area to realign and the manner of over-running the objective.

The pause to realign carries out the principle discussed before. That is, to insure that the tanks did not reach the objective long before the carriers but that they both were in supporting distance of each other when they closed in for the assault.

Tanks on an open objective are invincible once they break inside the enemy position. In this case Charlie Company was along to mop up and consolidate the objective and then bring its weapons to bear in a supporting role for Able and Dog Companies. If something did pop up that the tanks couldn't handle, then Charlie Company could take care of it. Enemy in pillboxes and fox-holes that wouldn't come out were left to the infantry to handle as the tank commander moved violently to break up all organized resistance on Hill 807.

#### Carrier Action after Troops Dismount

What do the carriers do when the



troops pile out in an assault? Disposition of the carriers has always been a ticklish problem and one that must be decided beforehand.

In a dismounted attack, the carriers are normally left under company control in an assembly area back of the line of departure. They are controlled by the company executive officer and brought forward on order of the company commander who is with the attacking troops.

In a mounted attack of a tree line, as described for the rifle platoon of Dog Company with its attached tank platoon, the carriers pulled into the trees and assumed rear and flank protection. The drivers move to the commander's turret and man the .50 caliber machine guns. The RT-70 vehicular radio is on the same frequency as the platoon leader's AN/PRC-6. The drivers plug in their head sets, man the .50's and listen for instructions. The driver of the command track, the platoon leader's vehicle, is in charge of the platoon carriers. If he receives instructions to bring the vehicles forward, he notifies the other drivers and they move through the woods following the direction of attack until picked up by a guide.

In the case of the attack of an open objective, as exemplified by Charlie Company, the carriers pulled back from the crest of Hill 807 into defilade watching the rear until called forward to be placed into position by the platoon leaders acting on instructions from the company commander.

If the attack continues on a deep, open objective, the carriers may follow by bounds from defilade to defilade always watching the rear and the flanks. It is essential that they get into turret defilade so the driver can observe the troops on the next ridge for hand and arm signals to bring the vehicles forward if radios fail to function.

In attack of light resistance, carriers may follow their squads at sight distance watching the squad leader for signals to come forward. In this case, speed is essential and it is felt that the carriers are immediately available for rapid movement when enemy resistance is overcome and the route is open.

In all cases drivers must receive specific instructions on what to do when the troops dismount. This must be included in the field order or con-

fusion undoubtedly will be the result.

The 373d Armored Infantry Battalion, casting around for a solution on control of the platoon carriers, tried leaving the platoon sergeant behind with the vehicles. This proved impractical and was discarded. It is felt that the platoon sergeant is needed to help control the platoon in the fire fight and be there to physically take over immediately if the platoon leader becomes a casualty. The senior driver, who drives the platoon command track, was designated to control all platoon carriers, freeing the platoon sergeant for more important duties.

It is felt that another T/O&E space should be made for a noncommissioned officer to control the platoon carriers. This space would fill the spot formerly allotted to the platoon guide of the old infantry rifle platoon. This recommendation is made to compensate for the loose control that is now exerted over the carriers by having somebody directly responsible for their positions, camouflage and movements who would be in a position to effectively handle the job.

#### Artillery and Mortar Support

The armored personnel carrier can move under time fire and VT fire without ill effects. Buttoned up tanks and carriers can move on to an objective while friendly artillery lays time fire on it. Built for this express purpose, the carrier can bring its infantry through a hail of fire which will keep down the enemy and enable the friendly infantry to close with a minimum of casualties.

Close-in artillery and mortar support will not harm tanks or carriers but it must be lifted at the split second the infantry starts to dismount or friendly casualties will result. The observer calling for fires must be at a vantage point where he can watch the movement and shut off the fires at the right time. He must closely figure his time of flight of shells so that the last volley will not be on the way when the friendly infantry dismount. That last volley must have reached the target seconds before the dismount. If the time interval is too great between the last volley and the dismount, the effect will be lost. If it overlaps with the dismount, the friendly troops will be decimated by their own fire.

It is felt that the forward observer in the tank company, riding in his own tank, cannot control this fire as effectively as an observer on a vantage point. The confusion of the attack and the difficulty of determining time of flight of shells could throw his estimations off a few seconds which would be disastrous to the friendly infantry.

The battalion artillery liaison officer, on a vantage point with the battalion commander, can handle this fire mission effectively. The battalion commander has communication with his assaulting formations and he can give them the word when the last volley is on the way and when it has reached the target. No premature dismount would result thus exposing friendly troops unnecessarily.

#### Conclusions

The armored personnel carrier is a fighting vehicle, taking its place with the medium tank. It is designed to carry fighting troops across that last 100 yards of fire-swept terrain with an absolute minimum of casualties, moving unharmed through shell fragments, small arms fire and friendly time fire.

Its full tracks give it a cross-country mobility on a par with the medium tank. If the terrain will accommodate a tank thrust, the armored infantry will move along until needed. The carrier will deposit its infantry fresh and full of fight on the objective itself.

Armor is the "Arm of Decision." The medium tank is the right-hand punch of armor and the armored personnel carrier, with its fighting brood of infantry, is the left jab that completes the destruction.

This "one-two punch" of Armor can only be attained by close coordination and timing between the tanks and the armored infantry. Once attained, the combination becomes one that is unbeatable over any type of suitable terrain and in any type of situation. Mounted or dismounted, with tanks integrated or tanks overwatching, the tank-armored infantry team can overcome any reasonable obstacle, backed up by the fires of its supporting artillery.

"The Queen of Battles" is making tracks giving her more speed, mobility and firepower, the keys to success in modern warfare.



**T**HE western area of Camp Stewart's vast 280,000 acre reservation has taken on a new look.

For the past fifteen years the eastern and central portions of the post have been utilized for training anti-aircraft artillerymen while the western reaches remained virtually untouched.

Now this western area is bustling with a new activity that could greatly increase the importance of this already valuable anti-aircraft artillery training center.

Recently-announced plans by Lieutenant General Alexander R. Bolling, Commanding General, Third Army, call for active Third Army tank units, Reserve and National Guard, to conduct annual training on this section of Camp Stewart.

A "Tent City" complete with post exchange, movies and television has been erected near the tank training site which is about 25 miles from the main cantonment area.

Trainee battalions are housed in Tent City proper while the various supporting units are bivouacked in the same general vicinity.

Tank training here can now be considered in full swing after almost six months of preparation and testing to determine the suitability of the terrain for this purpose.

Brigadier General Richard W. Mayo, the post commander, was probably the first to fully appreciate the possibility offered by this post for training armor units. There is sufficient maneuverable area for exercises to include a combat command.

A board of armor officers composed of representatives from Third Army Headquarters, Fort Benning, Fort Knox and Fort Bragg, examined the Stewart facilities in October of last year and recommended that the post be given further tests to determine its suitability for armor training.

Department of the Army approved the projected tests and in January of this year the 423d Engineer Battalion arrived from Camp Rucker, Alabama, to build tank trails and firing ranges in the western part of the reservation.

In February the 194th Tank Battalion rolled in from Camp Rucker to test those ranges under operating conditions.

At the same time a soil-testing team from the Vicksburg, Mississippi Army Engineer station was called in to ex-

# A New Training Site For ARMOR

amine the soil and drainage conditions.

Extensive experiments through the late winter and spring months showed that the terrain was suitable and plans went full steam ahead to prepare for the arrival of various armored units in the Third Army area.

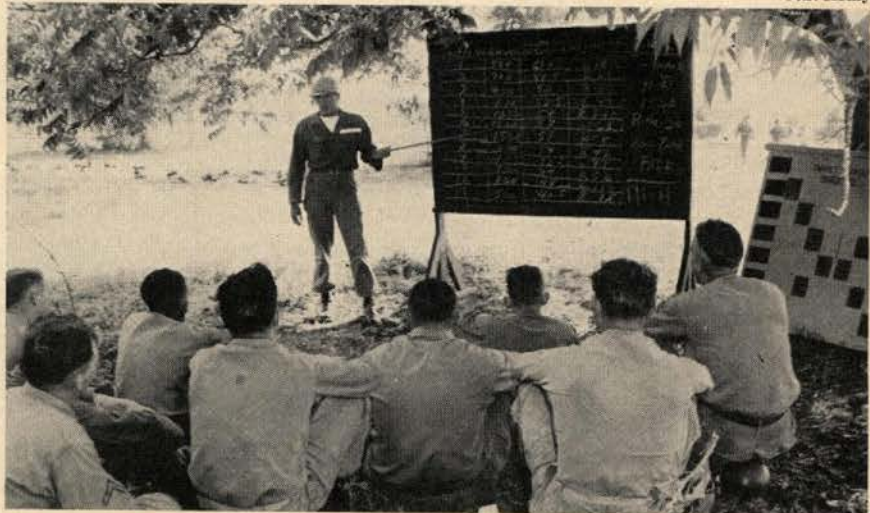
At present the tankers are training with M41 light and M48 medium tanks.

Stewart has a number of distinct advantages for armored training. It is

probably the only post in the country now used for tank training where a combined arms, artillery, infantry and armor river crossing problem can be staged and the only station east of the Mississippi River where 120 millimeter guns can be fired to their maximum capacity.

Stewart's vast range areas, its mild southern climate throughout the year and its excellent road system offer distinct advantages for armored as well as anti-aircraft artillery training.

U.S. Army



Dry running the trainees' firing commands pays off prior to actual range firing.

U.S. Army



Members of 194th Tank Battalion being resupplied with 90mm gun ammunition.



# TRAINING FOR ARMOR UNITS IN ATOMIC WARFARE

by **LIEUTENANT COLONEL GEORGE B. PICKETT**

**A**T the present time, in our development of tactical employment for special weapons most of us will admit the concept that the Army of the future—the Army that will exploit the special weapon—will have the characteristics of Armor, the arm of mobility. However, this abstract idea still must be transformed into active, sensible training for Armor units, both in the employment of and defense against special weapons—atomic warfare.

In the initial planning for training in the employment of atomic weapons during Exercise "Spearhead," which was conducted for the 1st Armored Division at Fort Hood, Texas, during this past May, the planners were faced with the problem of developing a system that would provide the maximum training for the participating troops but yet not violate existing security regulations. The Atomic Staff Officer (ASO) in the G3 Section of Headquarters, for the Exercise, Major Lucius Wright, from the faculty of the AAA & GM Center at Fort Bliss, Texas, advised the staff that the system had to be based on three factors in order to be effective. First, it had to be simple. Second, it had to provide realism. Third, it had to avoid overclassification. The training value would have been destroyed if the play was so highly classified that the tank crews and riflemen could not participate and know what was taking place.

In order to achieve simplicity, a standard system of umpiring Aggressor atomic strikes against US Forces was developed. Each umpire was provided with an atomic casualty assessment calculator—"cookie cutter"—which was based on a 20 KT strike at a 2,000 foot height of burst. A 20

KT yield at 2,000 feet is no longer classified and can be used without any special security requirements that would complicate the umpiring. The umpires were trained in the effect of atomic weapons so that they could apply the damage and casualty factors from the "cookie cutter" in a logical fashion, based on the disposition of their unit at the time that the strike took place and the distance of that unit from ground zero. The exact location of ground zero, of course, and the exact time of the strike, were made known to the umpires far enough in advance so that at the proper time, based on when he saw the simulator device fired, he could freeze his unit in place and assess the necessary casualties. One method of marking casualties quickly to avoid having the play bog down due to umpiring difficulty, is to have each umpire equipped with some harmless solution, such as mercurochrome or methiolate, with which he can put an "X," and "O" or an "R" on the forehead of each casualty. This method indicates whether the man is dead, wounded by heat and/or blast, or is a radiation casualty. This also simplifies the problem of the supporting medical unit which must enter the area, when the damage control plan is placed into effect, to identify, treat, and evacuate casualties, based upon the type of injury.

In the preceding paragraph the problem of handling a strike against the friendly forces was discussed. To simplify the training problem in employment of special weapons against the enemy the delivery means available to the US Forces should be standardized to provide training for all staff echelons in the coordination of these weapons with conventional weapons and in developing the concept of operations. In addition, the different types of strikes, with the time that it takes for the weapon to be placed over the target after the unit

makes its initial request, must be played. In general, there are three types of strikes that can be played during a maneuver, field exercise, or CPX. These are: pre-planned-scheduled strikes, which are delivered similar to scheduled artillery fires; pre-planned on call strikes, where the target location is known but the desired time of the strike is unknown; and targets of opportunity, where strikes are called, based on development of intelligence throughout the play. Naturally, the delivery times for each type of strike are considerably different. Here, the staff must be very careful to avoid compromising classified information.

The second factor to be considered in planning for the training in atomic warfare is how to achieve realism. The initial means is to conduct a course of refresher training in atomic effects and protective measures against special weapons for all participants. Then a system of simulating the noise and visible characteristics of an atomic weapon must be provided. It is not sufficient for the umpire to suddenly leap out of his vehicle and inform everyone that a 20KT strike at 2,000 feet just went off over their heads. The same idea applies as in the case of blank tank gun and rifle ammunition. The blank is certainly far from the real thing, but it approximates the effect and serves the purpose of indicating that the weapon has been fired and is located in a given place. This is the same effect achieved by the use of fire marker teams exploding firecrackers in areas where enemy artillery fire supposedly is falling. Naturally, any device that simulates an atomic strike is not going to approximate the effect of the real thing. However, there are two types of devices that add considerable realism to the play. The first is the "Bullis Bomb," which is a device that projects a volume of napalm up into the air and

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ignites it. The result created is similar to the familiar mushroom cloud created by an atomic weapon. The second simulator is the type developed by the Navy Special Devices Center which can be dropped from a light plane. It also creates the mushroom effect. In order to achieve surprise the device dropped from the plane is best used against US Forces. Pre-planned strikes against Aggressor can be simulated by the "Bullis Bomb," which requires digging in the napalm container and projecting the napalm from the ground.

Of course, realism can only be achieved if during the play consideration is given to the fact that the enemy will have certain types of delivery means, each with a specific capability. He must not be given the capability, as was so prevalent in the 1941 maneuvers with artillery, of being able to strike a target instantly, with no intelligence play and from any direction. What applies for the development of intelligence for target identification and the delay of delivering the weapons against an enemy target by US Forces must also be applied when permitting Aggressor to strike the US Forces. For example, a unit moving under cover of darkness into a new assembly area should not be hit with an atomic weapon within 10 minutes after it closes. Aggressor could not identify the target and lay on the strike in any such period. Any such unrealistic strikes made against a unit will destroy the training value of the strike.

The third factor, that of avoiding overclassification, can be achieved by designing the play of Aggressor weapons against US Forces to be unclassified at the troop and umpire level. This can be done by standardizing the weapons yield that Aggressor uses against the actual US Forces at an unclassified yield such as 20 KT's at 2,000 feet. In order to provide training for staff personnel, however, Aggressor must be able to run the gamut of yields within realism according to classified information. These strikes should be against paper units so they will not have to be umpired. These strikes against paper units provide valuable training for staff personnel. Also US yields of strikes made against Aggressor must not be released since this would identify the yield with the delivery means and there-

by compromise security information. This part of the play is the classified play, required for training Division, Corps, and Army level staff officers, and should take place within a headquarters where appropriate security measures can be taken.

Up to this point this discussion has been primarily based around background to achieve certain training results. Training in tactical employment is also required. During Exercise "Spearhead" the principle of concentrating units in terms of time instead of concentrating them in terms of space was emphasized. Since the entire exercise had to take place on the Fort Hood reservation, adequate terrain for dispersion was not available to enable this principle to be tested to the maximum; however, certain points were readily apparent. First, real estate in atomic warfare will be at a premium. The numbers and types of units in the type field Army require them to be located somewhere on available real estate. If an Armored Division in Corps Reserve

is dispersed over a wide area, by unit, these dispersed units may still find themselves close to an Army support unit. Therefore, even though the Armored Division is dispersed, the real estate problem at the Army level makes it difficult for the entire Army to disperse. Also, we are faced with the fact that although battalions and companies may be widely dispersed from combat command and battalion headquarters and still be controlled effectively by the higher commander, utilizing the effective radio network within the armored division, the problem exists of dispersing within the lower units. How far can a company or battery be dispersed and still be controlled, assembled, and fought immediately, without confusion, by its commander?

In addition, training is required in certain allied fields. Study by Major Maurice Rogers, the ASO of Exercise "Spearhead," indicates that secondary medical measures are required to supplement existing medical facilities in a unit hit by an atomic weapon. Medical and first aid training for all personnel is now more important than ever before. Units on the periphery of the blast area must assist immediately in first aid to and evacuation of casualties in the blast area if the tactical situation permits.

Each commander and staff must be trained to assume the responsibilities of the next higher commander and staff in event the higher echelon is knocked out by atomic attack. Furthermore, wide dispersion of units implies greater reliance on junior (battalion-company-platoon) commanders and use of mission type instructions. Training and self-reliance must replace detailed instructions. These junior commanders can only command in atomic war if permitted the same degree of freedom of action during garrison duty and in training as will be required on tomorrow's battlefield.

Training and indoctrination of all personnel in the unit damage control plan will also minimize the loss of unit combat efficiency after an atomic strike and will result in saving many lives. These are only some of the problems involved. The time has come for our abstract ideas and concepts to be translated to firm doctrine and for troops and individuals to be trained in that doctrine.

U.S. Army



A simulated atomic blast, as shown here in Exercise Flashburn, adds a great deal of realism to maneuver play.



# PRELIMINARY DRAFT FOR A CHART OF THE FUTURE

by MAJOR LAMAR McFADDEN PROSSER

1955

1956

1957

## Necessity For Exploration

**W**HEN a soldier tries to think beyond his own experiences and probes into the possibilities of the future he is harassed by the nagging thought that if he commits his conclusions to the glare of public print they may be hurled back at him ten years hence to prove how shallow is his understanding and how unreliable are his deductive powers. This thought is guaranteed to keep a soldier humble.

Still, there can be no progress at all without this venturesome reaching. Without some such pretensions no acorn would ever grow into an oak tree. Only stagnation can result from unwillingness to pioneer and, if we are to judge by the past, the danger is not so much that his imagination may run away with him as that his timidity and respect for tradition may lead him to stop short of his objective. Ideas that appear star-

tingly new in 1954 may well be so generally accepted in 1964 as to be trite. The pioneer is sustained only by the knowledge that change is constant and by the hope that his own inadequate exploring may encourage some other, more experienced soldier to do a better job of clearing the underbrush and marking out the trail ahead.

Before launching out into the undeveloped regions of military possibility it would be well for the pioneer to check equipment and orient himself by a careful look at the landmarks of his present position. Those who went before us have left these blazes on the trail.

## Precepts on Which Present Calculations are Based

1. Successful operations by large scale ground forces are not now possible unless something approaching parity in the air is assured.

2. Technical developments and weapons of unusual destructiveness have increasingly forced ground troops to deploy, separate, and disperse.

This dispersion can no longer be considered a passive defensive measure but is now a fundamental condition of contemporary combat.

3. The capability of rapid movement must be built into every arm of the ground forces to make it possible to fight and move dispersed or to concentrate with surprising swiftness should the situation permit.

4. Each unit of the ground force must be so designed as to permit the maximum flexibility in its employment both separately and in combination with other formations.

5. Commanders must be prepared to operate without definite detailed orders but in conformance with a general overall plan.

6. Administrative and logistical organizations always follow the trend established by the combat arms, since their only reason for being is to support the fighting forces by the most effective and efficient means. Dispersion, mobility, and flexibility apply equally to these units.

These mileposts are behind us. We are now on the frontier. These are

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*In order to remain ahead of the rest of the field in the art and science of war, we must integrate our basic ideas with our proved methods; add certain assumptions, then develop new equipment, techniques, and tactics accordingly. This is the course we must follow to keep moving forward. To close our eyes to the future is to become stagnant and possibly invite disaster.*

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the precepts on which any exploring into the future must be based.

We cannot explore the future of warfare without considering the use of atomic weapons, and here the wilderness is absolutely trackless. There has been so little information released on this most important aspect of the future that random speculation can be dangerous. However, these expensive and dreadful weapons certainly will not be used except against major targets. Of this, at least, we can be sure. That would mean that results expected from their use must be proportionate to the risk and danger involved. Venturing a little further we can see that the atomic weapons might be used against at least two different types of targets: those close in towards the battle area to facilitate tactical operations, and those deep in the enemy zone to accomplish some strategic objective. In the latter case, the weapon would have only an indirect effect on the tactical operations.

When an atomic weapon is used in close tactical support of ground fighting it might be used either offensively or defensively. Examples of possible offensive use are:

1. To create a penetration.
2. To destroy enemy reserves before our attack.
3. To contaminate an area into which we would drive the enemy.
4. After forcing the enemy to concentrate either by feigning a withdrawal or by strong attacks from opposite directions, designed to compress the defenders into an area suitable for the use of the Atomic weapons.

Examples of possible defensive use are:

1. To halt a mass attack by the enemy.
2. To deny the enemy certain areas by contaminating them and thereby canalizing his attack into an area which we are prepared to defend.

#### **Exploitation Is Necessary**

In each case the use of the weapon must contribute significantly to the proposed operation to justify the expenditure. In every conceivable case in which an atomic weapon might be used, it will not be by itself completely and finally decisive but will depend on immediate and violent exploitation by ground or airborne forces or a combination of both. For this swift mobile work we can hardly depend on truck borne infantry units. The roads, bridges, overpasses, and cities along the route would certainly have been severely damaged by the blast and these obstructions would curtail and retard the pursuit if we relied on wheeled vehicles. It seems likely that the entire force will have to be completely mobile and probably armored—armored for protection from blast and mobile for exploitation overland. In no other way could we accomplish the exploitation with the speed and flexibility required. This absolute mobility is now possible. A short step into the future is sufficient to make convincingly clear that the form of ground combat needs no longer be dictated by the necessity to conform to any existing road net. Facilities now available make it entirely practicable not only to move and fight free of roads but to maintain adequate levels of supply while doing so. For the first time in history

armies can now afford to disregard elaborately prepared supply lines. For some time yet, the existing supply lines will continue to be used whenever and wherever they are feasible. The important point is, the LACK of such prepared routes on the ground is no longer a bar to successful operations. This is true because overland transport vehicles now exist which can transport loads of many tons over any type of terrain that will support ground bearing pressures of one pound per square foot. These vehicles do not require prepared roadways. (See the Rolligon, *ARMOR*, March-April 1954.)

Secondly, aircraft now on order by the Army are built around a cargo hold larger than the ordinary railroad boxcar and capable of lifting a loaded 5000 gal. gasoline tanker and tractor. (See *Freighters of the Future*, *The Atlantic Monthly* magazine, August 1953.) These planes are designed to exploit minimal runways and to operate on unpaved strips. These are the only facts known about the new craft but the facts, as stated, are enough to indicate the possibilities.

Likewise, unofficial but reliable records show that distance is shrinking in terms of time. A 3,000 mile voyage took Columbus seven months. Today civilian transport planes have made the same flight in three hours and twenty-five minutes. (Associated Press news report.) This indicates that it is not now mandatory to maintain huge stocks of supplies immediately behind the front but instead our supply build up can be underground in the Zone of the Interior.

For these reasons, we can confidently look forward to the very near future when roads will cease to be a



controlling factor in ground operations. This being so, the combat force is only limited by its OWN ability to move. Our first discovery is an important one—one that will have many ramifications both in the equipment and employment of ground forces. And this discovery leads us naturally to the next.

If we are not tied to the road system by the necessity to supply ourselves, then it is logical to expect that armies will adopt suitable cross country vehicles for the combat elements and that the army of the future will be completely mounted. That this is possible, we have already discovered. That it is necessary is our next discovery.

The bursting radius of contemporary scientific weapons, their great range and the numerous novel means of delivering them on the battlefield are bound to result in a dilution of the combat formations; a thinning out and separation of the individual units of the fighting force. Since this is unavoidable, each of these separate units will require the greatest possible mobility in order to make rapid moves to close a threatened gap—to strike forward quickly to take advantage of a temporary weakness in the opposing force—to make quick local concentrations for offense or rapid dispersals for defense. This trend was foreshadowed by the difficulties experienced by our enemies towards the end of World War II and all the developments since then tend to increase the importance of this combat mobility. There may still be occasions when we will dismount to fight but the further we move into the future the less frequent will these dismounted actions occur until, finally, they are likely to disappear entirely. The dismounted forces of an enemy would be bypassed and enveloped by our widely scattered formations until they found themselves deep in rear of the fighting area and contained on their strong point by mobile forces who would pursue them ruthlessly if they attempted to break through the cordon. In terrain where it proved impossible to bypass the enemy's dismounted forces, paratroops might be used to neutralize the pocket of resistance, or such a static force might be a good target for guided missiles or other new weapons. The im-

portant thing to accept is the fact that the dismounted (or more correctly, the unmounted) unit would almost certainly be destroyed by an opponent capable of moving freely.

### Old Concept of Lines is Finished

From the foregoing it becomes fairly obvious that the old concept of lines of defense is definitely passé. Instead of these "lines" which can now be pierced almost at will or enveloped vertically by the use of paratroops, we discover that the best chance for successful defense now lies in an area defense in great depth where the mobility of the defending force can be used to advantage to slice up any enemy attempt to force through in mass. The depth of our defensive zone must be much greater than the effective bursting radius of any conceivable tactical weapon. Defensive areas twenty or thirty miles from covering force to reserve positions will not be uncommon. To speak of the "front line" has become an inaccuracy, because, at least since World War II, there has never been a definite, recognizable line between contending forces. As we approach the future we can see that this is going to be increasingly so. In the mobile battles of the next war there will probably develop an area of overlap between the enemy and ourselves. In the combat area of, perhaps, five miles or more there will undoubtedly be small combat teams of both sides holding positions of strength without regard to any traditional concept of line. These more or less isolated combat teams cannot be considered "Strong Points" in the usual sense of that term because they will be constantly on the move—shifting about for safety's sake, feinting and thrusting, eternally on reconnaissance—and they will depend more on their speed of movement and armored firepower than on the complete and coordinated organization of a piece of terrain. They will be of sufficient strength to attack the enemy's dispersed formations should he attempt to infiltrate the combat area in any depth and to delay the enemy force sufficiently to permit the maneuver of our reserves to block the threatened zone. Should the movement of enemy forces appear to threaten the survival of our small combat teams, these would likely be

slowly withdrawn in front of the enemy advance keeping only slight contact with him in order to give warning of the direction, strength, and composition of his attacking force. As the enemy advances he would be met by increasing resistance, each independent combat force inflicting the maximum damage before withdrawing beyond the next team. In this sort of battle the damage inflicted on the enemy is the more important factor, the terrain given up or taken must not be the measure of either success or failure. We would try to keep our forces intact to fight again while attempting to inflict the maximum casualties upon the enemy. As the enemy's strength in number of vehicles and effective men decreased we would move in for the kill keeping in mind that the recovery of the terrain given up is entirely secondary to the destruction of his vehicles and weapons.

### Reserves

During the foregoing our reserves would be held back, mobile but not concentrated. They would be committed to make the kill but every precaution would be taken to prevent their concentration until they actually joined the fight. Probably they would be moved up from more than one direction. This does not mean that they would not have a concentrated effect on the battle for they would be so accurately coordinated that they would strike in unison though separated.

When we went on the offensive in this type of warfare we would push out with numerous small combat teams whose mission would be first, to bypass then to isolate and finally, by mutually supporting operations, to destroy the enemy's advanced forces. Since we must expect that the further we move into the enemy zone the greater will be the resistance we will encounter, we would push increasingly heavy teams through to take up the battle. By leapfrogging in this manner with heavier and heavier combat forces we would eventually break through the entire defensive depth destroying his forces as we went until at last we would be in the clear and free to exploit with all available combat forces. Maintaining always our dispersed



formation we would fan out deep in the enemy country seeking out his reserves and attempting, by merging the power of adjacent combat teams, to destroy them.

### Headquarters

It easily can be seen that in order to exert any influence on mobile battles of this sort the commander must be on the spot. Hence tactical headquarters from division down undoubtedly will become mobile, too. In order to do this they will have to be reduced drastically in size and the administrative echelons will be dropped off far behind the battle area. Probably they will be merged with those of the Army Headquarters and operate from more or less permanent underground installations though retaining their responsibility to, and operating in support of, their parent units. The command echelon of the headquarters of necessity would be very close to, if not in, the battle area. If the air situation permits, the commander will no doubt find that he can best observe the whole front from an airplane and will radio his orders to his units maneuvering on the ground. The enlarged and unobstructed view of the battle area should help the commander to evaluate the ground and the tactical situation and should provide the means of recognizing immediately those momentary advantages that appear and disappear in the ebb and flow of every battle.

We can now see that flexibility is at least as vital in contemporary battle as mobility. The flexibility we will require is not simply a matter of organization (though much needs to be done along organizational lines). Flexibility must be a prime element in every battle plan, and it must extend to joint operations between branches and between arms of the services. For example, it is certain that the enemy will use every possible means to restrict movement on the ground. Mines will be used to an extent not yet even dreamed of, minefields will no doubt be laced throughout the entire depth of his defensive zone. To seize the strong points overlooking the enemy minefields airborne troops might be used. While the airborne force occupies the enemy, gaps will be quickly cleared to permit the mobile ground

force to join them on the new position before the enemy's counterattack can be launched. Tactical aircraft will in the meantime engage any force the enemy attempts to use to reinforce his positions. Close coordination of the sort here proposed will require the finest kind of cooperation and it will certainly require unity of the entire command. The same commander who controls the subtle shifting of the widely separated combat teams must also have control of his supporting aircraft—with no strings or conditions attached. It is unjust to require a commander to accept the responsibility for great battles unless we are willing to give him undisputed control of all the forces engaged. The coordination now required can only be accomplished if instant advantage is taken of every fleeting opportunity. Flexibility in the organization and in the handling of the force is vital and it will depend on the quick decisions of a single commander.

And so another conclusion is reluctantly forced upon us. The army of the future, if it is to be completely effective, must have its own tactical air support. To the commander who fights on the ground his air support is just another supporting arm—an extremely important one but supporting, nevertheless. Soldiers realize that the pilot who flies in support of ground fighters is as much soldier as flyer. His missions are determined by the needs of the soldier not by any aerial theory, and it is therefore absolutely necessary that the ground commander be in a position to assign these missions without having to get the permission or concurrence of anyone. Time alone justifies this demand, and unity of command is violated if it is not granted. The tactical air force must take its proper place as a part of the same command it is designed to support. Mutual understanding of each other's problems and confidence built up through joint training and a single command are necessary to achieve the ideal support.

### Value of Exploration

In all our attempts to map the future of warfare in our times we have taken into account the probable effect of atomic weapons. We have been assured on the highest authori-

ty that they will be used and so we can safely leave aside moral arguments that they are inhumane, or that the fear of retaliation will prevent either combatant from resorting to them. In any case, whether they are used or not, they exist and the possibility of their use will have its effect. Beyond any possibility of doubt the advent of another great war would mean a considerably different type of fighting than anything we have yet experienced. Perhaps our potential enemy will be content to continue his current policy of "War by Proxy" but can we count on it? If we cannot it is certainly not too early to start adjusting our Army to the kind of war we know is now possible. Even if this Army should never have to fight, and its very existence protects us from ever having to employ it, it would be many times more effective in that passive role if organized and equipped to deal with the reality.

It has been said that we lack detailed knowledge of the newest weapons and that any attempt to puzzle out the future without concrete facts and figures can only be a shot in the dark and may, if it is wrong, do more damage than good. Perhaps. But we could point out that the basic ideas on which tanks were employed in World War II came long before the vehicles that really made them possible were even designed. We might remember that no plane specially designed to carry bombs existed at the time that the theory of strategic bombing was advanced (it has changed remarkably little in the meantime). No facilities existed for producing fissionable material in quantity nor for the manufacture of the atomic bomb when it was first conceived as a weapon. But in every case the POSSIBILITY was latent. It only remained for the pioneers in those fields to fuse the possibilities with imagination to produce the reality.

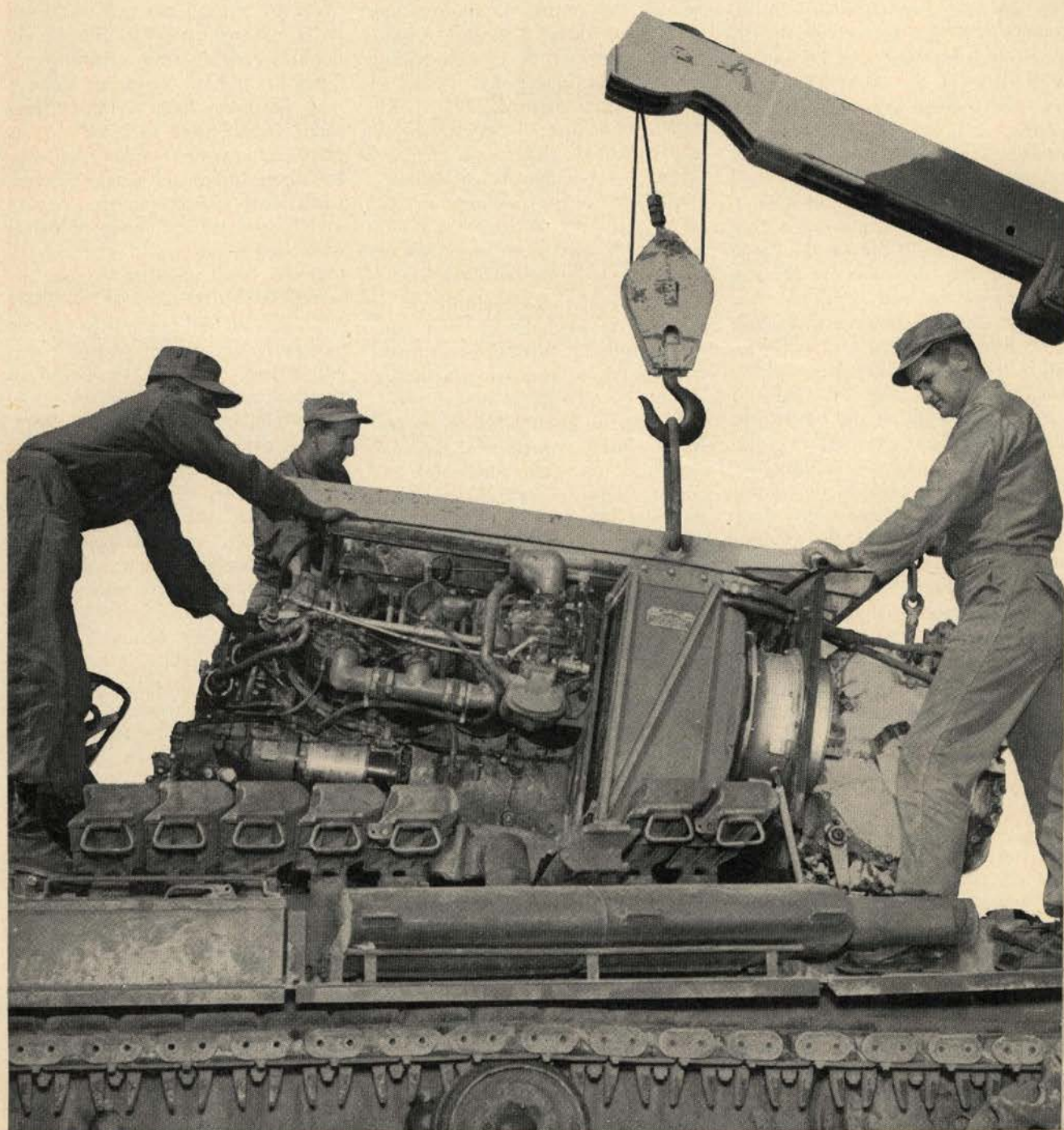
Of course there were false prophets, those who misinterpreted the trends. But even these, we can see in retrospect, served their purpose if only to aggravate other more capable thinkers into considering the problem and digging out the truth.

The knowledge that this is so should be sufficient encouragement for ANY pioneer.



# OPERATION 100% SUPERIOR

by COLONEL JOHN M. HENDERSON, JR.



U.S. Army



**N**OTHING fattens the horse so much as the eye of its master" was the pithy expression used by Xenophon, the learned Athenian general, to emphasize the value of personal supervision by the commander. Xenophon's sage advice is being applied to more modern transport at The Armored Center, raising the standards of organizational maintenance. Command responsibility and supervision paid off during the Annual Ordnance Technical Inspection conducted there by Headquarters Second Army.

Long known as a maintenance-minded commander, General Collier, the former Commanding General of The Armored Center, emphatically announced prior to the inspection, that "a rating of satisfactory is not good enough. I shall expect every unit to strive for a superior rating." To insure that all recognized the desired goal, General Collier directed that all phases of the ordnance inspection be known as "Operation 100% Superior."

Yes, the goal was set high enough in "Operation 100% Superior"—particularly when it is remembered that all units at The Armored Center are under pressure to maintain a concentrated training program. Tanks must roll daily in all School Troops Units to meet training schedules of The Armored School. The 3d Armored Division must move, shoot, and communicate to keep up with the stream of basic and advanced trainees. Tankers know that vehicles must roll and guns shoot accurately when the chips are down. Deadlined tanks don't win battles. This is one among other reasons why the year-round training program stresses preventive maintenance of equipment.

"Operation 100% Superior" was eminently successful. Ratings were given for eight different phases of maintenance and support of Ordnance equipment:

1. *Transportation vehicles*
2. *Combat vehicles*
3. *Trailers*
4. *Small Arms*
5. *Mounts*
6. *Instruments*
7. *Artillery*
8. *Supply.*

Three major commands at The



M1 rifle parts are meticulously gauged during Army Ordnance Inspection. U.S. Army

Armored Center received an average rating of superior in all eight categories. They were: The Armored School, Army Field Forces Board Number 2, and the 3d Armored Division.

The 3d Armored Division with its heavy density of Ordnance equipment, was a key unit in the over-all success of "Operation 100% Superior." Due to its training mission, the division has many more medium tanks in daily operation than in a T/O&E Armored Division. The Spearhead Division property books indicate that ordnance equipment valued at several hundred million dollars is on hand.

Major General Gordon B. Rogers, the Division Commander, is acutely aware of the immensity of this investment. He insists that the preventive

maintenance of this mass of equipment receive the same top priority as the training of recruits, the primary mission of his division. General Rogers expressed his attitude on maintenance training when he said, "A soldier must know how to care for equipment as well as use it—or he is not a trained soldier."

The Division's maintenance program is set up on a year-round basis with the annual Ordnance inspection as a high point. The program is founded on the principle that "Maintenance Is A Command Responsibility," with the division commander and his staff stressing the concepts presented by Lieutenant General I. D. White, Commanding General of the Fourth Army, in an article published in *ARMOR* (see September-October, 1952).

Command responsibility for maintenance, to be effective, must fill the thinking of every member of the chain of command down to the crew chief, squad leader, and tank commander. Each individual must "join the team for PM" and must appreciate the importance of his unit's con-

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tribution to the maintenance effort.

How was this remarkable record of 100% superior achieved? The answer to that question can be given best by citing events in the 3d Armored Division:

1. Determination by the Division Commander of the desired maintenance standards.
2. Widespread instruction as to how desired standards could be attained.
3. Continuous close supervision of the maintenance program by the Division Commander and each member of his staff.
4. Developing enthusiasm for PM throughout the command by fostering a competitive spirit.
5. Aiming high and refusing to accept anything but the best.
6. Follow-up and more follow-up.

The personal interest and participation of the Division Commander is the key to the superiority of the entire maintenance program in the 3d Armored Division. At least once a week General Rogers confers with each of his commanders and discusses maintenance problems and how they are to be solved. These conferences are not "broad-brush treatments." Specific defects are reported and instructions issued as to how they will be corrected. The Division Ordnance Officer assists in this presentation using charts, sample assemblies, and other training aids. Subordinate commanders are directed to give the same personal attention to maintenance within their units.

By way of personal example, General Rogers expresses his interest in maintenance training during his day-to-day visits to units. When the occasion warrants, during such visits, he publicly commends those at the working level whose performance is outstanding.

The determination of maintenance standards desired is essential to any maintenance program. In line with the frequently expressed policy of General Collier, each unit at The Armored Center must set realistic standards possible of attainment with economy. In considering the need to replace worn parts, General Collier often asks, "Would a prudent taxpayer spend his money on the replacement of his own equipment?" Parts are discarded only when the last pen-



U.S. Army

Proud of a superior rating is this 131st Tank Battalion crew—no deficiencies.

ny's worth of safe operation has been obtained. Commensurate with these safeguards against waste, each subordinate commander is charged with setting more stringent standards than the higher echelons of command.

Widespread instruction in how desired standards are to be attained is a dual function of inspection teams. This instructor-inspector service is the goal of inspectors from the G3 and G4 sections as well as division ordnance teams. Training schedules require daily "maintenance stables" formations for all vehicles supervised by the chain of command within each company. Technicians, such as motor sergeants and unit armorers, are used as advisors but do not have primary responsibility for this training. To insure that instruction is thorough, "Daily Maintenance Stables" are frequently conducted on the by-the-numbers system.

Continuous close supervision of the maintenance program by the Division Commander and his staff is a daily "must" in the Spearhead Division. Such supervision is not confined to arms rooms and tank parks. For

example, Colonel William M. Fondren, commander of CCA, during frequent visits to tank driver training areas, checks to insure that vehicle halt periods are used by crews to inspect and care for equipment. He says, "Rest halts are primarily for tanks, not to rest the crews." To prove that this attitude pays off, CCA passed the annual Ordnance inspection with an average of .13 deficiencies per tank of 354 tanks assigned to the command. An average of only one deficiency for every eight tanks is a remarkable record for a unit where tank crews are composed of trainees with less than 18 weeks of military service.

Developing enthusiasm for preventive maintenance poses a special problem in a training division where the bulk of the personnel are transients in the pipe line.

Lt. Col. Irwin T. Shaw, Spearhead Division G4, established a division wide maintenance competition. Major Glenn L. Greener, Division Ordnance Office and in charge of Ordnance inspection teams, was given the task of selecting, for public recog-





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From tanks to bayonets the byword was "Follow-up and more follow-up."

nitition, units and individuals for their superior performances.

He also had the job of setting up appropriate prizes. Prizes were awarded to crew members of the best tank in a unit; tanks with zero deficiencies in automotive, artillery, and fire control instruments; best tank company; best rifle company; best maintenance section; and best regiment. The prizes consisted of commendation letters, three-day passes, framed scrolls, engraved identification bracelets, and engraved cigarette lighters. Purchased prizes were bought out of unit funds.

Major Greener's job of selecting prize winners became doubly difficult when unit after unit had zero deficiencies in different phases of the inspection. The spirit of competition became positively infectious. Tank and weapon crews established eager espionage teams to spy on inspection activities in other outfits. When they learned that a deficiency had been discovered by the inspectors they carefully noted how it could be prevented or corrected and then dashed back to their own outfits to pass the word.

As a result of such G2-ing, seldom did the inspectors find the same deficiency twice. In fact, 41 company-size units went through the small-arms phase of the inspection with zero deficiencies. Not a single deficiency was discovered in any of the weapon mounts in the division. Many infantry type companies boasted of zero deficiencies in the entire unit. As the inspection progressed, competition became more intense and the slightest defect became a serious blot upon the honor of every man in a unit.

When the furor and shouting came to an end, there was one unscarred company without even a minor crack in a rifle stock, an ammunition ready rack bumper pad missing, a black-out light burned out, or a commander's hatch lock stuck. That honor unit was Company B, 36th AIB, commanded by Captain Scott R. Lyons. With its 45 assigned tanks manned by trainees, and equipped with unit weapons, mounts, and instruments, it came through with a perfect score.

Aiming high and refusing to accept anything but the best is essential if the too prevalent attitude of

"we can't do it because ———" is to be defeated. Everyone in the Army today is faced with personnel shortages, high turnover rate, lack of technically skilled men, parts shortages, rugged terrain, weather or training schedules, and many other troubles that make the going rough. Although sympathetic with these very real obstacles, General Collier refuses to accept myriad excuses as to why good maintenance can't be had. "If you have the resources to use equipment you have the resources to maintain equipment," said General Collier. He believes that the good commander adopts a "Can Do" attitude and finds the one road to success rather than futilely seek the many roads to failure. It therefore came as no surprise to Armored Center personnel when the Annual Ordnance Technical Inspection was titled "Operation 100% Superior."

Follow-up and more follow-up were watchwords of every commander that made "Operation 100% Superior" an outstanding success. Company commanders ordered the layout of small arms and their preliminary inspection by unit personnel. Knowing that minor faults can be missed, the commanders personally went over the weapons again before the arrival of the inspectors. When inspectors found defects, they were usually minor things that fatigued unit personnel had overlooked in their zeal.

As part of the everlasting follow-up of maintenance in the 3d Armored Division every commander and staff visitor makes it a practice to personally inspect some phase of maintenance during each visit. This is practiced even though the purpose of the visit is not related to maintenance.

What lessons can be learned from "Operation 100% Superior"? Of course the most important lesson is widely known but not always practiced fully—PREVENTIVE MAINTENANCE IS A COMMAND RESPONSIBILITY.

The second lesson is applicable in all military activities—A WELL-PREPARED PRACTICAL PLAN, PURSUED WITH ENTHUSIASTIC VIGOR, CAN BRING SUCCESS.

The Armored Center's "Operation 100% Superior" can be boiled down to the twin precepts of: AIM HIGH—CAN DO.



# Organization of Armored Units

## Tank Company and Tank Battalion

by RICHARD M. OGORKIEWICZ

**P**ERIODICALLY, as ideas and conditions change, the organization of different units comes up for analysis and discussion. Now, once again, it is the turn of tank units to be reexamined—in the light of new developments and new demands arising out of such problems as the employment within the widely differing frameworks of armored and infantry formations.

One of the main problems in organization, as in many other spheres, is that of achieving a satisfactory balance between what may be desirable and what is possible. It is appropriate, therefore, to consider the two aspects separately; first to begin with the desirable features, or the basic characteristics of an organization, and secondly to examine how they can be achieved in the light of available resources and other limitations.

Apart from the question of such limitations, which will set a certain top limit to what can be done, there are, also, certain minimum requirements below which it is hardly possible to go and which can provide a convenient starting point for any discussion.

### Minimum Strength

A platoon of combat vehicles can be taken as the smallest organizational unit. It is then reasonable to assume that the minimum strength of such a unit is three vehicles, if the functions of command and combined action are to be effectively carried out. From this an organization can be built up, by combining three such platoons to

form a company, and three companies to form a battalion.

This type of simple, "triangular" organization has actually been used—by the Soviet armored forces in World War II, for instance. It has the advantages of relative simplicity and compactness, but it is also very vulnerable. It is far too easily upset by losses since there is no "float" of vehicles to be taken up. It is not suitable for use in actions of any duration and it can, generally speaking, be taken as an absolute minimum.

### Increase in Strength

Some increase on the above minimum organization appears essential. The question is where the increase would best be used.

Any increase in tank strength should, in the first place, go to increase the strength of the platoons which bear the brunt of all the fighting and losses, so that instead of three there are at least four, or preferably five, tanks per platoon.

If it is considered that the resources available allow for still further increases, an increase in the number of units can then be contemplated. This should only be done, however, after the needs of the platoons have been satisfied.

The problem then becomes that of deciding whether the increase should be in the form of an increase in the number of platoons per company, or in the number of companies per battalion—assuming that the total number of personnel and equipment will be substantially the same in the two cases, as it can be.

Of the two, the second solution appears definitely preferable for the increase in the number of units and the resultant organizational flexibility can be used much better by the battalion command, with its superior command

facilities and potentialities, than by a company command.

### Company as the Basis

It may be advantageous not to increase the size of the company too much for another reason: namely to help to keep it intact. The larger the company the greater the tendency to split it up and use it in smaller packets, instead of as a whole.

This argument cannot, of course, be pushed too far for it would merely tend to reduce the company to the size of a platoon and the only thing which would then be achieved would be a change in unit designation! Nor is the argument in favor of keeping the company intact to be interpreted as prohibiting the use of tanks in smaller bodies: at times the use of single tanks may be the most profitable method.

But, normally, the company should be regarded as indivisible and used as a whole. To this end it is best not to make the company too large, nor to organize it in any way which would obviously invite the use by platoons.

### Proposed Organization

Following the reasoning outlined above, there emerges an organization with five tanks per platoon, three such platoons and a headquarters platoon forming a company, which would then have a total strength of some seventeen tanks.

Three, or preferably four, such companies would then form a battalion.

Such an organization appears to be the most suitable at the present stage of technical and tactical development. It is not, of course, intended to be rigid in its detail and the numbers of tanks, for instance, are given as a guide of what is considered desirable rather than final, fixed data.

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It is also an organization which should be equally suitable for use within the framework of armored formations as well as infantry formations.

### Undesirable Variations

Since the role of the tank, and of tank units, remains basically the same whatever the troops they are used with, there is no fundamental reason why a different organization should be evolved for tank units in infantry formations and those in armored divisions. There are several strong practical reasons why it should not.

First of all, the existence of different types of units represents a considerable complication in Army organization as regards equipment, maintenance, replacement, and so on. Secondly, it complicates employment in the field; it also complicates the problems of training and transfer of personnel and, therefore, leads to a serious loss in efficiency. On all counts, therefore, it is most undesirable.

It may be argued, as it is argued by some people, that a particular type of tank organization, different from that used in armored formations, would suit better the existing infantry organization. But, even if this were true, it is pertinent to ask whether such a special organization designed to suit the infantry would really get the best out of tanks, whether it would be desirable from the general Army point of view, and what would really be achieved by it?

For instance, any splitting up of the tank company is generally undesirable and, moreover, no matter how it is split up there will still not be enough tanks to satisfy all the demands for them by every infantry unit. This is a further argument against splitting up and, instead, for using the company as a whole where it is most needed.

Certain small differences may, of course, be necessary, mainly in the technical and administrative sections. But this cannot affect the main point that the basic organization can and should be the same, whether the tank units are used with armored or infantry formations.

### Precedents

That a standard type of organization is entirely feasible is fully borne out by history.

In both the British and German Armies, for instance, during the course of World War II, a virtually standard type of organization was adopted, irrespective of the type of equipment used or of the nature of employment. The case of the British armored units is particularly noteworthy in view of the existence at the time of the two separate, specialized categories of "cruiser" and "infantry" tanks. In spite of the existence of these separate categories and, hence, of units with very different equipment and operational roles, the basic unit organization was the same. In the U.S. Army also there have been no basic differences in the organization of armored battalions, even when different equipment was used, as in the case of the light and medium battalions in 1942.

As regards numerical strength, the British had for a long time favored three tanks per platoon and as many as five platoons per company. For some time now, however, the number of platoons has been reduced to four and the number of tanks per platoon increased—to four tanks per platoon. Generally, the total number of tanks per company in British armored units has varied between fifteen and nineteen tanks.

Germans in the early stages of World War II had as many as twenty-two tanks per company but they then reduced it to seventeen, at which figure the nominal strength remained for several years. In the final stages of the war, however, they reduced it further to eleven tanks per company, but this reduction was forced by shortages of equipment.

In the case of the U.S. Army, in 1940, the Cavalry armored troop—predecessor of the tank company—had only a dozen tanks. However, for tank companies, both light and medium, a strength of seventeen tanks was standardized and remained so until the post-World War II increases to twenty-two tanks per company.

The Russians, as already mentioned, favored the organization "by three's" and the great majority of their armored units had three tanks per platoon and three platoons per company giving a total of eleven tanks only. The heavy tank companies, however, were smaller still with two tanks per platoon and a total of seven for

the company. Soviet tank units have certainly been smaller numerically than those of other armies, though at the beginning of World War II the French also favored relatively small companies with eleven or thirteen tanks apiece. However, in the case of the French there seemed to be a somewhat different unit strength—for no good reason—for each model of tank used (and of which there were several) and there were also companies of infantry and cavalry tanks with as many as twenty and twenty-one tanks each.

As regards battalion organization, the triangular organization—i.e. with three companies per battalion, excluding headquarters and service companies—has been predominant. It has been standard in British and Soviet armored units and virtually so in the U.S. and many others. When resources allow, however, it would be more advantageous to increase the number of companies to four, as advocated by several tank leaders. Four companies per battalion was the organization of German tank battalions when these were at their best and unhampered by equipment shortages, of the U.S. armored battalions toward the end of World War II, and also of some British and French armored units in the past.

### Conclusions

The various aspects of the problem can be briefly summed up in the following points:

1. There is no reason why a single basic organization of tank companies and battalions cannot be used, irrespective of whether the units are used in armored or infantry formations. And there are many excellent reasons, referred to previously, in favor of standardization.
2. A basic organization of three platoons per company and four tank companies per battalion appears to be the best solution, superior to one with four platoons per company and three companies per battalion.
3. Similarly, under the present conditions, five tanks per platoon appears to strike the best balance between too large and too small a platoon.



# RANGE FINDER TRAINING

by

COLONEL LOUIS A. HAMMACK

**I** DO NOT like the range finder," said a captain in a unit that I was visiting not long ago. "My men can estimate the range more accurately by eye than by use of the range finder."

What this officer was actually saying is that he did not know anything about the range finder! Actually by estimating the range by eye, the error is normally about 25 per cent and as a rule the error is greater at longer ranges. Ordnance, in a recent test, proved that the range finder is 400 per cent more accurate than estimation by eye. Experience in training over 30,000 students at The Armored School strongly indicates that: (1) If you expect to get many first-round hits at ranges over 1000 yards, you must have some assistance in getting the range to the target other than estimating by eye. (2) Practically everyone can use the stereoscopic

range finder; of course some men can use it better than others, as some men will have better vision. However, the T46E1, although not the ultimate in range finders, is capable of at least 95 per cent accuracy in the hands of a trained gunner.

## Teaching Methods

The most important point in range finder instruction is to make sure that the student understands what he is supposed to see. I do *not* believe you can do this by verbal explanation in a lecture or conference. At The Armored School we use slides and an actual dismounted range finder to show the student the reticles and the function of each control. Then we use stereo projector and polaroid glasses (same as 3-D movies) to project the reticle on a screen and actually move the reticle and range on objects on a terrain slide. By this method we generally make it clear to the student exactly what he is supposed to see. In a unit you can use a visual cast projector and transparencies (developed by Special Devices Center in Port Washington, New York) with the polaroid glasses and

do the same thing. Then the student is ready to use the Stereo Trainer, T1 (16-D-15). This is a device developed for us by the Special Devices Center. They should be ready for issue to units very soon. This trainer is a box about 2 feet square with a movable reticle and terrain slides. By having the student range on a target, read his range, throw him off and range again, the instructor can get a good idea of how well the student is doing.

After the student has become proficient with this trainer, he is ready for introduction to the range finder. Here at The Armored School we have a range finder building from which the student can range on various targets, using the range finder mounted on a stand. I do not believe this is necessary in units, as the tanks can be placed on terrain where many targets are visible. In The Armored School, where we have large numbers of students and a shortage of tanks and instructors, we must have facilities of this kind.

## Speed In Ranging Is Essential

There are two things that we continually stress in tank gunnery: (1)

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speed and (2) accuracy. They go together. It would be of little use to have great accuracy in our guns if we could not shoot quickly. To shoot quickly you must range quickly. We say that a man must range in five seconds. When we start practical work on the range finder, we allow 30 seconds for each ranging, then 20 seconds, and finally five seconds. We get speed by teaching the student to quickly push the reticle out, until the bottom line of the V is beyond the target, bracketing it between this line and the next two lines. Then the bottom line is brought back to the target, and that is all. Actually this method of ranging is more accurate because if you continually move the reticle back and forth, you will find that the eyes will be strained and will blur, and your ranges will be less accurate.

### Battle Sights

The question is often asked, "What do you do when you encounter a dangerous surprise target?" We recommend and teach that a battle sight will be carried on all range-finder equipped tanks. A "battle sight" consists of a predetermined range and ammunition setting. These settings are determined from an analysis of the terrain and the type targets you expect to encounter. A normal battle

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*Discussion concerning the Range Finder, both pro and con, has been a lively topic wherever armored personnel gather. To understand and appreciate it, and so indoctrinate your tank crews is a command responsibility. Given a chance to prove itself the range finder can increase survival on the battlefield.*

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sight would be armor-piercing ammunition and 800 yards range. This will give you a good chance of hitting a tank at ranges up to 1000 yards. In desert warfare or in open country a range setting of 1500 yards might be more appropriate. To use the battle sight the gunner simply lays the aiming cross on the center of mass of his target and fires. If the first round does not hit his aiming point, he will immediately apply "burst-on-target." The battle sight will be determined by the unit and will be designed to fit the combat situation.

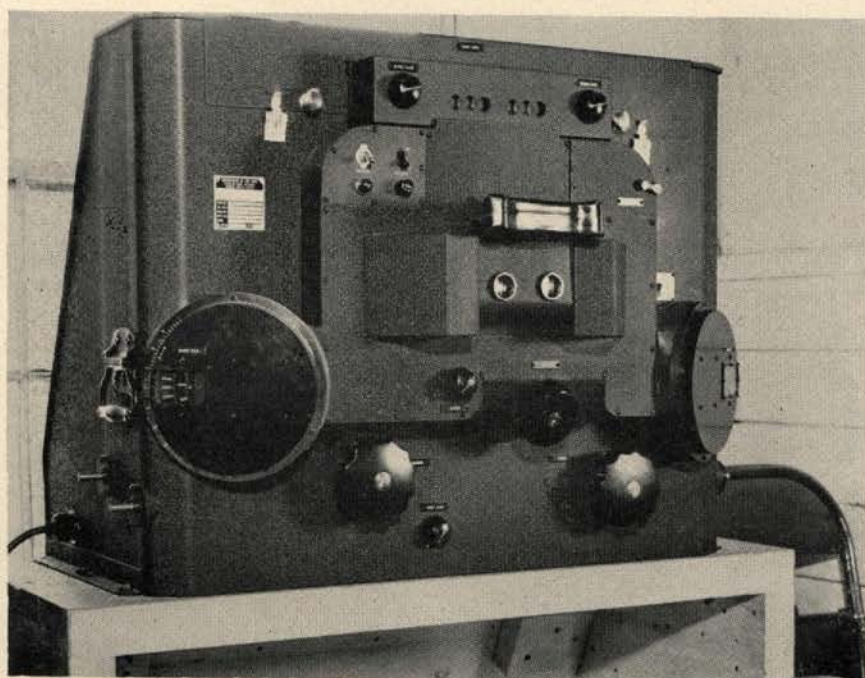
### Importance of Zeroing

It is most important that the tank with a range finder be properly

zeroed. The zeroing steps must be strictly followed as described in the appropriate training circular and at ranges as close to 1500 yards as possible. The 1500 yards is important so that you can get the desired accuracy at long ranges and still retain accuracy at shorter ranges.

### Conclusion

We must have some type of range finder if we expect to get first round hits at targets greater than 1000 yards. The range finder that we have is not the ultimate. We hope, before many years, to have a range finder which is so simple that the gunner can simply lay his aiming point on the target, turn the range finder on and automatically get the range to the target. We do not have this type yet, but we do have a good one. If a commander expresses an adverse opinion of the range finder before his men, then of course his men will not use the range finder. Usually these adverse comments are made through ignorance of the equipment. The most important step in teaching the range finder is to make sure that the student understands what he is supposed to see. Then, by practical application and under close supervision, the student acquires the skill and confidence necessary to obtain accurate battlefield ranges which will insure first round hits. There is no magic in the range finder. It is only as good as the man behind it. The great potential value of this instrument can only be realized when commanders believe in it and meet their responsibilities to insure that their tank crews are trained to employ it as effectively as possible.



The Stereoscopic Range Finder Trainer.

U.S. Army





Library of Congress

# The Corsican Ogre

by DR. ROGER SHAW

**N**APOLEON came to power, by a coup d'etat, late in 1799. There followed an imperialist war of gigantic proportions, which lasted for fourteen years!

The French revolutionary wars of 1792-99 had been of the "missionary" type, wars intended to spread the new doctrines of liberty, equality, fraternity, at the expense of the feudal system throughout Europe. French revolutionists had been backed by the radical freemasons throughout the world, and freemasonic aid had proved invaluable in the successful spread of the French republican armies and French revolutionary ideals. The three cardinal saints of the French Jacobins and international

freemasons had been: Brutus, Ben Franklin, and J. J. Rousseau. Their dress rehearsal had been the American revolutionary war of 1776. All this the imperialist Bonaparte—the little ogre from savage Corsica—inherited, to the preeminent advantage of himself and his numerous family relations.

Chief source of Napoleon's strength was the Revolutionary Army inherited from the republic. This was an enthusiastic mass army, based on universal military conscription, in which every private soldier "carried a marshal's baton in his furry knapsack." Carnot, that austere republican, had first brought it into being by his famous *levee en masse* of 1793; and it was more than a match for the long-term professional hirelings, of despots and dynasts, who opposed it on the revolutionary battlefields. French conscripts lacked the highly-drilled, finished polish of Austrian

and Frederickian regulars, but on their side they had superior numbers, complete self-respect, a humane discipline, and a personal stake in France and the revolution for which they fought. They sang "Ça Ira" and the "Marseillaise," while among the Prussians it was "customary" for a corporal with a cane to flog every two or three privates into action. French soldiers were treated as the salt of the earth at a time in which the Duke of Wellington referred to his own tortured redcoats as "scum."

Napoleon wisely retained all of the revolutionary trappings; tricolor flag, liberty, equality, fraternity, *personal* democracy. But he changed the nature of the war from "missionary" work to imperialist exploitation. He attacked with the infantry column in mass depth—the French revolutionary formation—and improved the artillery service, which was his special arm. His cavalry leaders, the

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German Ney and the Gaston Murat, were the best of the period; and he enlisted the Jewish bankers, in an anti-semitic era, by his propagation of religious freedom, which won for him also the devoted support of French Huguenots. Bonaparte had definitely, on the economic side, a capitalist and an anti-feudal viewpoint.

In 1800 he won in Italy at Marengo. In 1805 he defeated Austria at Austerlitz, and in 1806 he finished the Prussians at Jena and Auerstadt. In 1807 he did well by the Empire against the Russians at Friedland. By 1810 he was at the height of his power and prestige, despite an utter mess in Spain for which he was undoubtedly personally responsible. In 1812 came the madness of the Russian campaign, and in 1813 the German war for liberation, followed in 1814 by the Allied invasion of France, and the exile to Elba. Then there took place, the "Hundred Days" of 1815, Waterloo, and St. Helena. In 1823 the Corsican ogre died, off the African coast.

All through the war period was a struggle between two blockades, that of the British navy on the one hand, and that of Napoleon's Continental System on the other. The industrial revolution had come to England, with its new steam power, some thirty years or more earlier; and the British Isles were becoming a workshop whose prosperity was dependent upon the export of manufactured goods to the non-industrial countries of the Continent and the Americas. The Continental System closed all ports to British imports, from Petersburg in the north to Lisbon in the South. The imperialist manufacturers of England were rendered desperate, and unemployment and economic collapse faced florid John Bull. Meanwhile, Spanish American colonies were breaking away from Old Spain, in the course of the war, and these threw open their ports to British manufactured commodities, a little known fact which saved the British Empire from the disastrous threat of Napoleon's air-tight system.

By 1810 Russia was growing tired of the anti-British blockade, which forced great hardships upon her people, and finally threatened to secede from the System. To keep her in line was essential to success, and

this was, in reality, the cause of Napoleonic invasion of Muscovy in ill-fated 1812. Here was the beginning of the end. But the rigors of British counter-blockading, strengthened by Nelson's victories of the Nile, Copenhagen, and Trafalgar, caused Jefferson's unsuccessful embargo action of 1808, and later the entry of Uncle Sam into the war, in 1812. In short, blockade warfare cost France, Russia, and cost England, America, and in the net result Russia far outweighed America!

Napoleon's war-empire was very large. It included France proper, Belgium, Holland, the Rhineland, the Hansa Towns, Nice, Savoy, and lesser bits. Closely federated to this were most of Germany, in the guise of the "Rhine Confederation," the "Kingdom" of Italy, Naples, Rome, the "Duchy" of Warsaw, Illyria on the Adriatic Coast, Denmark, Spain, Portugal, Switzerland. In alliance were Austria, Prussia, and Russia, all lukewarm, if not unwilling, and quite prepared for the back-stabbing which they later perpetrated. England, America, Sweden, Turkey, China, and the Spanish colonies in the New World were outside the System, England's only territorial loss consisting of Hannover, which was merged in the "Rhine Confederation." Napoleon's brothers functioned intermittently as kings of Spain, Holland, Westphalia, or Naples, Murat-of-Naples having by this time turned into a brother-in-law. Napoleon's old mother ruled modestly, and sensibly, as matriarchal queen of the clan, although she wore no crown. The Pope was kidnaped. Here was imperialism in the last degree, perched precariously on continuous imperialist war.

The Congress of Vienna (1814-15) was just as imperialist as the Napoleonic Empire. Probably more so, for Bonapartism was collective in scope, while Vienna represented a crazy congeries of conflicting claims. Russia wanted Poland, Prussia wanted Saxony, the kings of Bavaria, Saxony, and Swabia wished to keep their new royal titles, which Napoleon had awarded them. England had, in the course of the long war, gobbled up many of the French and Dutch colonies, while she egged the Spanish colonies into independence. The Prussians actually got the Rhine-

land, and half of Saxony, the Russians were awarded "Congress" Poland, the Swedes received Norway at the expense of Denmark, which had backed Napoleon. Russia got Finland, and Austria was handed out North Italy. Belgium went to Holland.

America clearly recognized the imperialist nature of the Napoleonic cycle. Her Federalists had been anglophile and opposed to the French revolution, her Jeffersonians franco-phile and favorable to the Jacobins during the "missionary" wars which preceded Bonaparte. But with the Napoleonic Empire, Jeffersonians tended to lose interest in the cause of France, and so did the international freemasons, who were stout republicans. The American embargo, under Jefferson, was aimed quite impartially at *both* sides; and in 1812 a young warhawk named Henry Clay announced that the United States would do "best" by declaring battle against England and France simultaneously. (Such, apparently, was the feeling of many American statesmen, again, in 1916.) But the American war of 1812 was also imperialist in a sense, for one of its most highly prized objectives was an annexation of Canada which was unsuccessfully attempted around Detroit, and at Queenston. In practice, Americans burned Toronto and British burned Washington. . . .

At any time, until the final stages of the war, Napoleon could have had peace on the basis of the "natural" frontiers of France—the Rhine, the Alps, and the Pyrenees. This would have meant the safe annexation of Belgium, the Rhineland, and Nice and Savoy. France later obtained Nice and Savoy, by war and referendum, in 1859. She tried for Belgium in 1830 and failed. She demanded the Rhineland in 1919 and 1945 and was turned down. She may permanently annex them yet, but it is very doubtful indeed. Net results of the Napoleonic war period were the loss of several million lives, some new colonies for John Bull, some royal titles for South Germany, and a French-Napoleonic dynasty for Sweden. Liberty, equality, fraternity spread everywhere—a happy circumstance—but that was the work of the French revolution rather than the Corsican ogre, whose titular succes-



sors are the so-called "napoleons of finance."

Liberals have never known how to interpret Napoleon Bonaparte. He worried Thomas Jefferson and Thomas Paine, and other "leftists" of the era, and the correct political evaluation of the man has puzzled every humanitarian since his time.

In one sense the Corsican ogre was Emperor of the Red Jacobins, true heir to the liberty, equality, fraternity doctrines of the French revolution. He held high office *not* by the grace of God, but by the will of the people, and by his own dynamic qualities of leadership. Wherever his armies went, they carried under their tricolor Eagles the great French reforms: anti-feudalism, equality before the law, religious freedom, a "rationalistic" viewpoint—and a merciless military conscription for the perpetual wars of the period. Such old-fashioned radicals as Fouché and Carnot, and certain marshals, rallied to the Napoleonic standard; and although Napoleon was anything but radical himself, he moved in an intangibly radical aura. London considered him a dangerous red; Vienna thought him a *sans-culotte* usurper.

True it was that the Allies represented Reaction, and the medieval spirit, at least at the start of things. They stood for established religions, the divine right of kings, and the special privileges of vested aristocracies. In spirit they were largely cosmopolitan, and not nationalistic as were the "red" French. The Duke of Brunswick's Manifesto of 1792 typifies their conservative attitude, just as Danton's classic reply embodies the revolutionary spirit at its daring best. And wherever the French armies penetrated, they were welcomed vociferously by the liberal middle-classes, whose economic and political interests were identified with a new, capitalistic order of things.

Until the Russian invasion of 1812, the lines were clearly drawn on the whole. France and the French dependencies stood for equality and fraternity, if not for "liberty" in the Jacobin sense. The Allies represented sheer and perhaps stupid reaction. French armies were of the entire "nation-in-arms," while Allied Forces were composed of the hired mercenaries of divine-right dynasties which feared to place arms in the

hands of their own common people. Napoleon had held an international congress (1807) for Jews of the world, while the Allies utilized ghettos and anti-semitism, retained serfdom and flogging, held to legal torture and plenty of religion.

The change came around 1812. French armies were overwhelmed in Russia and humbled in Spain, not by dynasties and the highly-drilled hirelings of dynasties, but by climate, terrain, and above all, by popular risings of the plainest people. Napoleon's conscripts had defeated Hapsburgs and Hohenzollerns, Venetian oligarchs and Rhenish bishops, and such, but were in turn defeated by Russian and Spanish mob actions which were essentially lynchlike, or democratic. This was the Beginning of the End.

Before the Russian campaign, the Allies had fought Napoleon as diehard conservatives who opposed *all* reforms. After the Russian campaign, a large section of the Allies fought Napoleon as Liberals who opposed his extreme military despotism. The reactionary school of Allied thought persisted, of course, and was personified by Metternich, Gentz, and Castlereagh, as well as by the dynasties and titled aristocracies of Allied lands. But it was the Allied Liberals who finally beat Napoleon, just as his earlier triumphs had been at the expense of Allied diehards.

The year 1813 marked the German national rising against the French, and German dynasties were now much friendlier to Bonaparte than were their peoples. Young German radicals demanded a United Fatherland which would have curtailed the powers of their many petty princes; they hotly demanded reforms and Constitutions. They hated Napoleon more than did their rulers, but they also hated feudalism. Baron Stein, who freed the Prussian serfs, and that "enlightened" Duke of Saxe-Weimar who was Goethe's patron, were typical of the new orientation. The Weimar Duke, Charles Augustus, granted the first Constitution in Germany; Stein gave to Prussian cities municipal self-government. The poet Arndt and old Vater Jahn, founder of Turnvereins, were among the other "liberal" patriots. So was Prince Louis Ferd, of Hohenzollern, killed in battle with

the French. This German "student" school believed, with some grounds, that the sainted Frederick the Great was more of a radical perhaps than the detested Napoleon. They volunteered for the war of liberation (1813) in patriotic shoals, receiving from their princes liberal false-promises.

Czar Alexander of Russia inclined to the "liberal" view of things, and Stein was his specially favored advisor during these hectic days. Alex was temperamental and completely unreliable, a mystic and a hero-worshipper, but he had a warmly-beating heart which the balanced selfishness of Metternich, and other Allied diehards, instinctively repelled. There was, too, an English Whig school—foes of Castlereagh—which had supported the French revolution and opposed the policies of Pitt and Burke. English Liberals stood by their country against the Corsican, but they did so on "liberal grounds, and not from any love for the old order. Stanhope, Fox, and Fitzgerald had been earlier representatives of this influential group, although by 1813 there were few great names associated with it, except perhaps for our old friend Lord Byron.

Not only were Allied Liberals in the forefront against "Boney" during 1813 and 1814. Two French Jacobins were at the top in Allied counsels. They were Bernadotte, then adopted as Crown Prince of Sweden, and his great friend, Moreau, just back from American exile. These men—self-made generals—had served the French republic faithfully, and Bernadotte later functioned as a Napoleonic marshal. Czar Alexander wished to make Bernadotte Emperor in Napoleon's place, a "liberal" emperor, and not a military despot, or "anthropophagous."

Bernadotte's descendants still rule in Sweden, 1953, but the unfortunate Moreau was killed at Dresden during the 1813 campaign. Their presence in the Allied ranks was intended as reassurance to the Jacobins of France that the Allies were not all diehards. As a matter of fact, only Hapsburg, Austria—the stamping-ground of Metternich—was at this time entirely medieval-minded. Writers and intellectuals on the Allied side, such as Madame de Stael, were in many cases "redder" than



Napoleon; and although they were united in hating the French revolution, they were very much influenced by it.

When the reactionary Bourbons returned to Paris, in 1814, in the baggage train of the Allied armies, "liberal" influence was shown in respect to France, if nowhere else. Louis XVIII granted a constitutional Charter which preserved all the real gains of the revolution. The "white" terror was not now as severe as the famous "red" terror of 1793. The new Bourbon monarch proved himself wise and moderate on the whole; and Napoleonic wars and Napoleonic conscription were ended, to the joy of the essentially (maybe) pacific French people. Nor was France severely punished for her twenty-three-year struggle against the rest of Europe. Here, however, there is a strange paradox; for it was the Allied diehards, like Metternich, who preached generosity to the vanquished, and it was the Allied Liberals, like Stein, who sponsored punitive measures against the lair of the Corsican bogey. "Oh, Nuremberg!"

Then came the Congress of Vienna, and the triumph of the diehards in the Allied ranks. At its sessions the Liberals were overwhelmed by the conservatives, and the hopes of German, Italian, and Polish nationalists and constitutionalists were effectively squelched by dynasties which jealously guarded their medieval privileges. Czar Alexander suddenly switched to the diehards, and Baron Stein was ignored. For the time being, only Charles Augustus of Saxe-Weimar and "his" Goethe continued as European Liberals-in-office.

But the diehard victory at Vienna was short-lived, in the long light of history. In the next three or four decades England, Belgium, Prussia, South Germany, Greece, Austria, Hungary, Poland, Spain, Portugal, Switzerland felt the stirring call of liberalism, nationalism, constitutionalism. Herr Metternich and his inflexible principles were soon to be at a discount everywhere. Revolutionary sweeps, of 1830 and 1848, carried the Continent. Liberalism or "leftism" moved forward with increasing velocity until checked in course by the Fascist march on Rome in 1922, on Warsaw in 1926, on Berlin in

1933, on Vienna in 1934.

It seems, in some respects, that the French revolutionary principles (in their sanest form) were inherited by the Allied Liberals of 1813, rather than by Napoleon. The Allied diehards perhaps may be dismissed as fools beyond the pale of "progressive" civilization. What was left of the radical French Jacobins (most of them were elderly, or dead) had before 1815 turned against the First Empire. As to Bonaparte-Hapsburg by marriage, socially ambitious, conservative by instinct, professional shedder of blood—he was yet infinite-

ly preferable to the Metternichs from a "liberal" point of view. But, again from the "liberal" viewpoint, Napoleon fell far short of the Steins, the Weimars, the Moreaus, even the anglophile John Marshalls. "Radical" Napoleon's bitterest enemies were those adherents of the Allies who were yet more radically inclined.

It may even have been that the distinguished, and "enlightened," ghost of J. J. Rousseau stalked in perfect amity beside the fiery charger of old Marshal Bluecher (Prussian "Smedley Butler") in the 1814 march victorious against Napoleonic Paris.



U.S. Army

U.S. Army Ordnance recently released information on the M44 full-tracked self-propelled 155mm howitzer. A cousin to the Walker Bulldog light tank, the M44 is the biggest and heaviest of all vehicles in the "light tank family." It can be put into action with greater speed than any other medium field artillery piece now in use. The gun is equipped with a hydrospring power rammer which reduces the gunner's loading efforts, guarantees consistent ramming accuracy and makes it one of the most rapid firing 155mm howitzers ever developed. The gun mount is equipped with the new recoil system which reduces the recoil by two-thirds. This new design has increased the working space in the crew compartment, thereby permitting a greater elevating and traversing range. The major components of the vehicle are all standard Ordnance items and are interchangeable with those used on other vehicles. More protection is provided the crew than on the World War II predecessor. A .50 caliber machine gun is mounted on a new mount with 360 degrees traverse. Although the M44 weighs 32 tons, combat loaded, its ground pressure is less than that of the average automobile. It can cross bridges capable of carrying any standard piece of equipment of any army division. By removing certain portions of the vehicle, the weight of the M44 can be reduced for possible air transportation. The crew consisting of five includes the chief of section, driver, gunner, and two loaders.



# Training in Germany

On these pages are various photographs of Armor on maneuvers in Germany. They show the life of the tanker on field training and some of his problems. Here these problems are solved and teamwork is developed to a fine degree. Tactical errors are corrected—errors that in combat would be costly in life and equipment. Here, also, the service units train to keep Armor rolling with adequate logistical support. All this training, which is taking place today, is our life insurance for tomorrow.

All photos U.S. Army



Observing the enemy before attack.



In training problems armor and infantry, supporting each other in attacking an aggressor, develop perfect teamwork.



The Armored Infantryman now rides into combat protected by the APC's.



The Armored Personnel Carrier provides protection from small arms fire as well as shell fragment while delivering infantrymen and firepower into combat.





The fording of rivers, by using pontoon rafts, requires skillful teamwork which is obtained only by constant practice.



An "Aggressor" tank in firing position at edge of a woods.

A tanker using .50 caliber machine gun for fire support.



Bogged down in a deep mudhole, this tank is being put back into action by a tank retriever and a medium tank which have freed it from its predicament. A job which requires skillful teamwork saved this tank from falling into enemy hands.



# NOTES ON THE TRAINING OF AN ARMORED DIVISION

## Conclusion

# MORE TRICKS OF THE TRADE

by

BRIGADIER GENERAL HAMILTON H. HOWZE

**T**HE first article, appearing in the November-December (1953) issue of *ARMOR*, dealt in some detail with battle drill, a drill in which competence is required of all units of the 2d Armored Division. The second dealt with a number of training procedures in effect in the division, and the third set forth certain techniques of fire support—by tanks in overwatching fire positions, by armored artillery, and by anti-aircraft automatic weapons—as practiced here. The fourth article described the combat firing drills which tank companies, infantry companies and reconnaissance platoons of the 2d Armored Division run through twice yearly. The fifth discussed a number of good operational and training procedures for small units, and this ar-

ticle, the sixth, takes up a number of additional procedures, of the same nature, but applicable more broadly through the armored division.

### The "Training Notes"

We have found publication of Training Notes to be a useful training device. They are written by the author of this series of articles, and indeed form in large part the basis for them. Published in mimeographed form, Training Notes are not subject to the restrictions of the more formal types of division publications; I am even authorized to make mournful little jokes in them.

The Training Notes constitute (I contend) an important part of the training doctrine of the division. Each headquarters down to and including the company is required to maintain a file, for ready reference, and all unit commanders are required to be conversant with their provisions and to be governed by them in training.

Two paragraphs, quoted below, are tendered as samples because the con-

tent of each is in itself informative:

"SIMPLICITY OF INSTRUCTIONS. On tactical exercises there are many occasions in which messages or instructions miscarry. This leads us to expound the Wooden B—d theory—every person, in sending a message over the radio or in delivering it verbally or in writing to another person, should ask himself the question, 'Can this Wooden B—d possibly misunderstand the requirement?' Since the answer will normally be in the affirmative, the instruction should generally be repeated in plainer terms. It is extraordinary how often a person, particularly if he is tired, will say, 'Yes, sir,' when in fact he is very hazy in his understanding of what he is to do or where he is to go.

"MAP FOLLOWING. In addition to proficiency in basic map reading, units must instill in subordinate leaders what might be called good 'Map Following' procedures. Some officers and noncommissioned officers fail to use good procedures in following a map because of ignorance, and

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U.S. Army

Striped gun tubes are used to identify the platoon to which the tank belongs and numbers are used to identify the platoon and squad of the carriers.



U.S. Army

The 2d Armored Division uses "Milkers" for rapid refueling of combat vehicles to supplement jerry-cans as a means of keeping assault battalions running.

ARMOR—September-October, 1954

some because of mental laziness.

"a. Every commander who is charged with getting a unit or detachment across terrain must be *constantly alive* to the possibility of getting lost, and very much concerned as to the confusion and delay which will *always* ensue. The problem of turning a column of several vehicles around is always irritating and can be disastrous, and must not be allowed to occur if it is possible to prevent it.

"b. Haste, in following a route through strange country, often makes great waste. A platoon leader must be willing to halt his platoon periodically, and carefully consider the terrain in order to avoid the possibility of taking the wrong route. It is also very desirable for the officer or noncommissioned officer, if his other duties do not absolutely forbid, to follow his progress with his finger or with a pencil on the map. Even though the route is plain and the situation fully under control, it is always desirable that the commander know precisely where he is on the route.

"c. Many pathfinders also fail to consult the ground forms as an aid to their navigation. Thus not only the 'shape' of the road on the map must be considered and matched with the shape of the road on the ground; one must also compare the terrain indicated by the map with the ground itself. For example: does the road follow the north or the south side of the draw? Does the road follow the edge of the woods, or parallel it at some distance? Does the road point toward a certain village, or to the east or west of it? Should we be going uphill or downhill? Should the road where we are be pointing northeast or southeast?—etc. In other words, we must use all of the information on the map to assist in pathfinding, and not proceed like a tourist using a gas-company road map in following US 40 across Kansas.

"d. What's more, the check of ground forms will do much to minimize the difficulty caused by an inaccurate map.

"e. Helpful Hint: If the sun is shining, one can tell direction roughly as follows: point the hour hand of your watch at the sun; halfway between the hour hand and 12 o'clock is *south*. Many a person has followed a road for miles, going east when he thought he was going north or south



or even west. Second Helpful Hint: the North Star is due north—learn to find it easily. Both HH's have limited application at our division training area because it is usually raining."

### Vehicle Markings

We use in this division a system of marking tanks and armored personnel carriers which will permit tactical identification *within a given battalion*. The system is uniform throughout the division, the same color identifying "A" Company, for example, within any battalion. Striped gun tubes identify the platoon to which a tank belongs, and numbers identify the platoon and squad to which a carrier belongs. The top photograph on the preceding page indicates a tank from the 3d platoon (of a company which only a colored photograph would identify) working with a carrier from the 1st platoon of an armored infantry company.

### Gasoline Resupply

We have practiced the use of milkers (gasoline tankers equipped with a hose and a pump to permit rapid refueling of combat vehicle fuel tanks) to supplement the jerry-can as a means of keeping our assault battalions running. We find it a very desirable system.

The mobility of a battalion can be considerably increased by having a milker accompany each tank company on the march, visiting one tank after another as opportunity permits, keeping them all "topped off"; when it has distributed its load a milker should be replaced by another one, the first returning at once to the dump to refuel. Several milkers will quickly refuel a battalion in an assembly area or attack position.

The milker has considerable advantage over the jerry-can since it works appreciably faster and more silently, but it is somewhat less flexible and therefore should not exclude the jerry-can altogether. And for it to be of use, arrangements must be made to provide bulk gasoline in the Army supply setup.

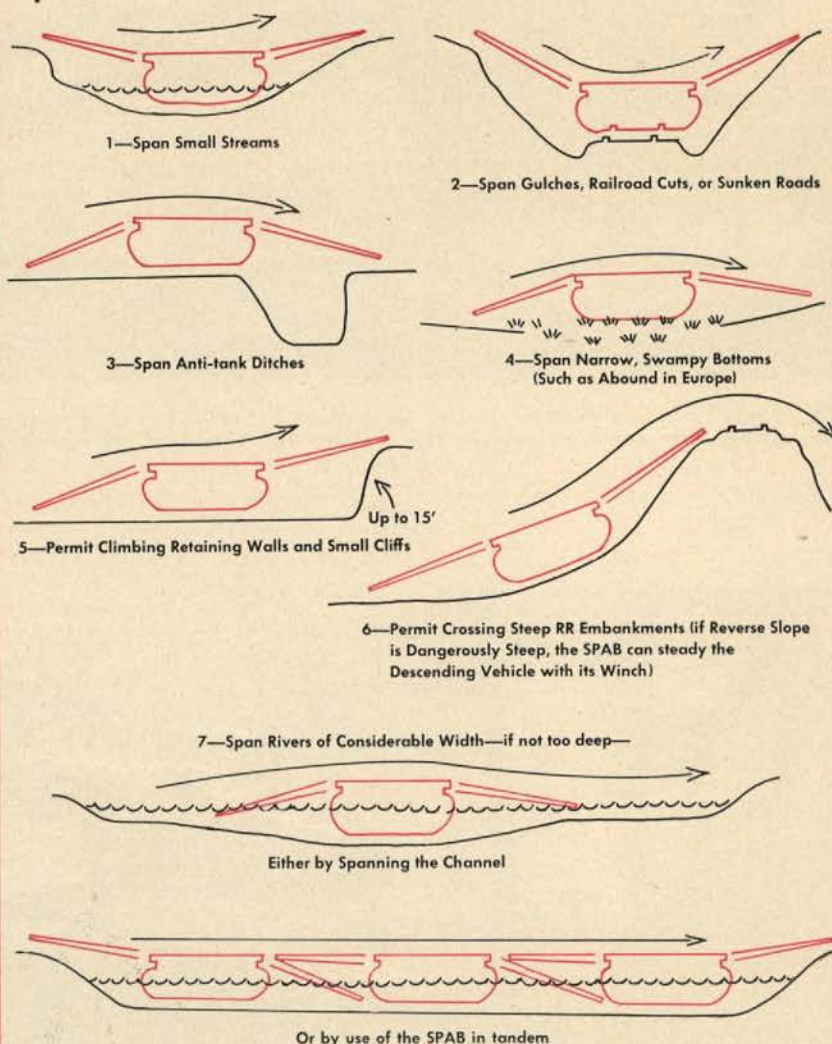
### Self-Propelled Assault Bridge

This division sought and received permission from Headquarters USAREUR for building, on an experimental basis, a single self-propelled assault bridge, or "SPAB." This

## SPAB

The Self-Propelled Assault Bridge, which will carry all division loads up to and including the M-47 and M-48 tanks, is 57' long, providing a span of about 51'. The carrying vehicle is waterproofed to permit launching in a mud-and-water depth of up to 6'.

The SPAB is designed to accomplish the following with speed:



And since the enemy will almost always seek to tie in his minefields with natural obstacles, the SPAB will in certain cases put us "through" his minefields by enabling us to cross the natural obstacle:

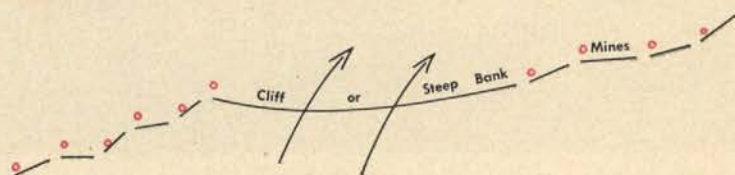


Figure 1





U.S. Army

This Self-Propelled Assault Bridge is in the process of lowering its ramps. It can span deeper and wider obstacles.

bridge is actually a refinement of the "Ark," a number of which were developed by the 1st Armored Division and made by Army Ordnance in Italy during World War II.

The present SPAB was built according to our specifications by the Mainz Ordnance Depot in Europe. The carrying vehicle is a tank with the turret off. It serves as a pier, pro-

viding for the bridge a stability and a flexibility not found in any other type assault bridge.

The carrying vehicle being in place—generally *in* the obstacle—the ramps are unfolded from the carrying position hydraulically and the bridge is ready for use. Our model will carry all division loads up to and including the M47 and M48 tank.

Figure 1 shows uses of the bridge over various type obstacles.

One great feature of the SPAB is its mobility. Generally speaking, it will go anywhere a tank will go, being of approximately the same weight, and having the same suspension and motive power. It is only slightly longer than a tank, and slightly wider, in traveling position.

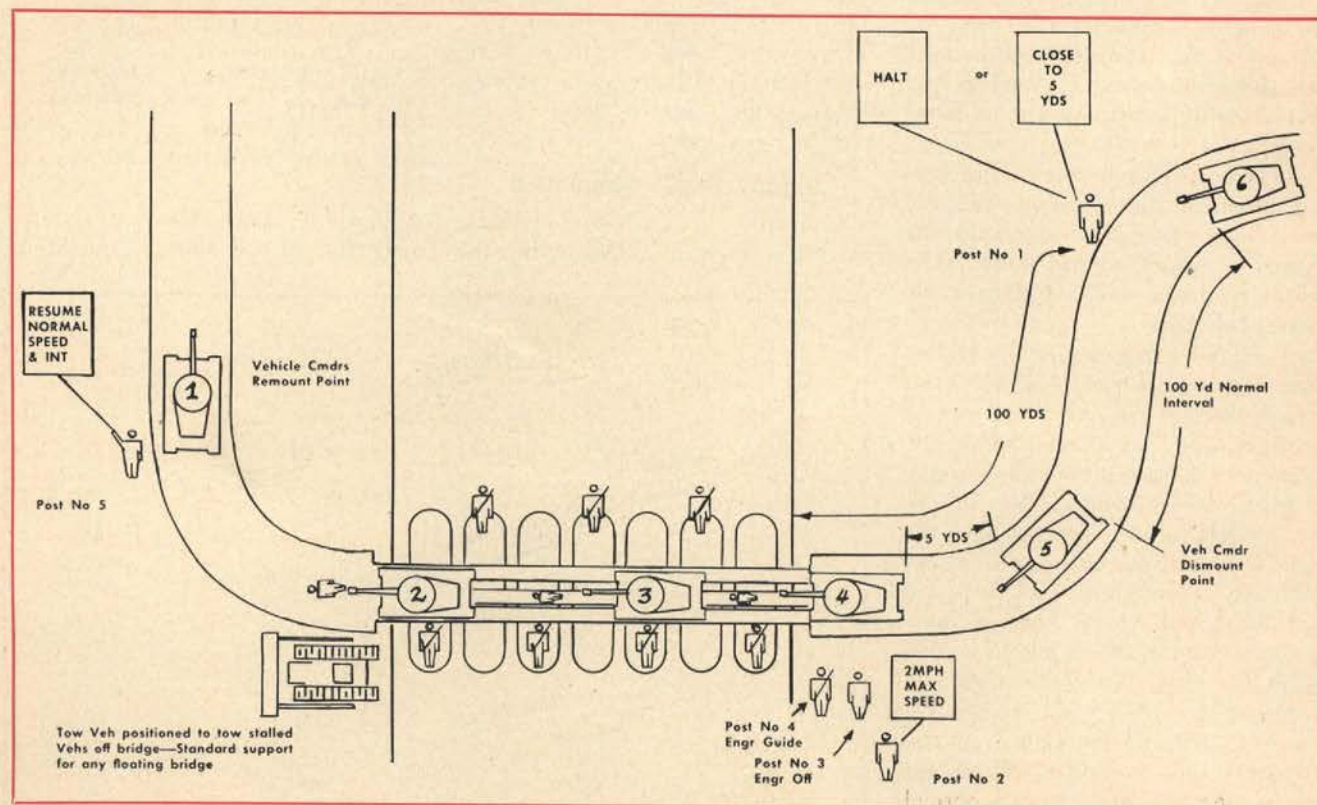


Figure 2



## Passage of Traffic Over a Long Bridge

It is wise to recognize that a bridge being used by an armored division to cross a major obstacle in the battle area will frequently be subject to the urgent attention of enemy artillery and aircraft. This obvious fact sometimes produces, in ourselves, an improper reaction: we tend to *spread* our traffic at the bridge, presumably because by reducing the congestion we afford the enemy a less attractive target.

In my opinion, our reaction should be quite the opposite. A bridge is a vitally important thing, and our successful use of it may spell the difference between victory and defeat. In consequence, means must be found to get the *maximum* use out of this precious structure as long as it remains standing, or floating, as the case may be. This then means that we should attempt to fill the bridge with traffic to its maximum capacity, accepting the possibility of greater casualties as a very worthwhile risk.

The necessity for doing this becomes quite obvious when one considers that tanks can use the present floating bridge only at a two-mile-per-hour maximum speed. If, then, a tank battalion crosses with distances of 100 yards between vehicles, the entire column of all type units behind the tank battalion must slow to 2 miles per hour—hardly a desirable rate of movement.

Figure 2 shows schematically how we organize the crossing. A little study will show how signs, in the hands of guides, control traffic. The position of the tanks indicates the density of traffic.

Tank No. 1 has cleared the bridge, and is resuming speed. No. 2 is just leaving the bridge. No. 3 is about 35 yards behind No. 2, that being the maximum density at which tanks may cross the present bridge. No. 4, with its "forefeet" already positioned on the treadways, has moved up to that spot just five yards behind No. 3; No. 4 will be started across by the engineer guide as soon as No. 3 has gained 35 yards distance. No. 5 has closed to within five yards of No. 4 and will move to adjust its forefeet on the treadways just as soon as No. 4 gets out of the way. No. 6, now at normal interval, will close to five yards on

No. 5 as soon as the guide gives it the signal to do so.

By this means we *load* the bridge, use it for all it is worth, and speed the division movement very appreciably.

### Route and CP Signs

We have found that the provision of certain standard signs, made of paper, greatly accelerates the movement and supply of the division, and, as a matter of economy, saves a good deal of gasoline otherwise expended by lost truck drivers.

Standard metal CP signs have been provided down to battalions by Headquarters, Seventh Army. Sometimes, however, there are not enough of these heavy signs to mark a long trail into a battalion CP, and we have therefore found it desirable to supplement the metal signs with some of our expendable paper ones, a sample of which is shown in Figure 3 A.

Issued to all headquarters (battalion and company) throughout the division is a standard route marking sign, shown in Figure 3 B. These may be used by any unit for any purpose whatever. The unit may make the sign distinctive unto itself merely by the addition of a colored grease-pencil figure placed in the center of the blank triangle.

Perhaps most important are the MSR marking signs, at Figure 3 C. These are in color. Their use is restricted to the military police marking MSRs under the direction of the combat commanders and/or the G4.

### Supply Traffic Circulation

Generally the Division G4 designates one "forward" MSR within the

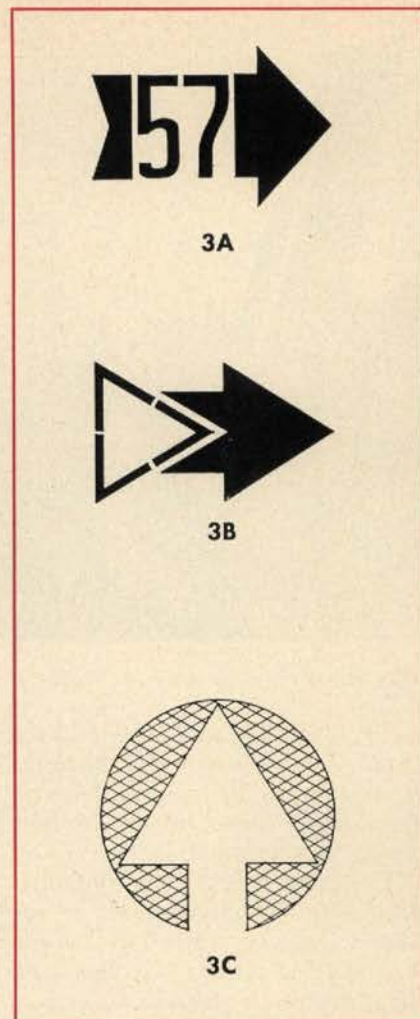


Figure 3

zone of operations of each combat command. These are known usually by color designation, according to the color of the MSR sign used to mark it.

Figure 4 shows the system schematically. Supplies move forward via

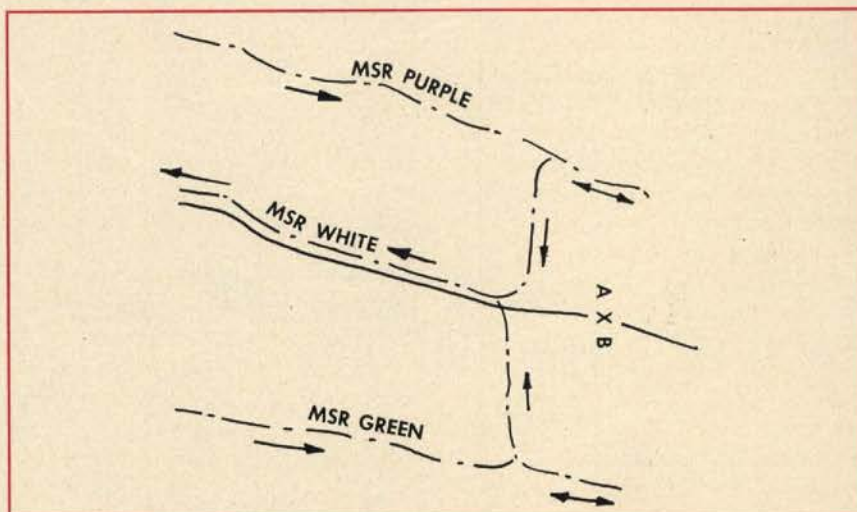


Figure 4



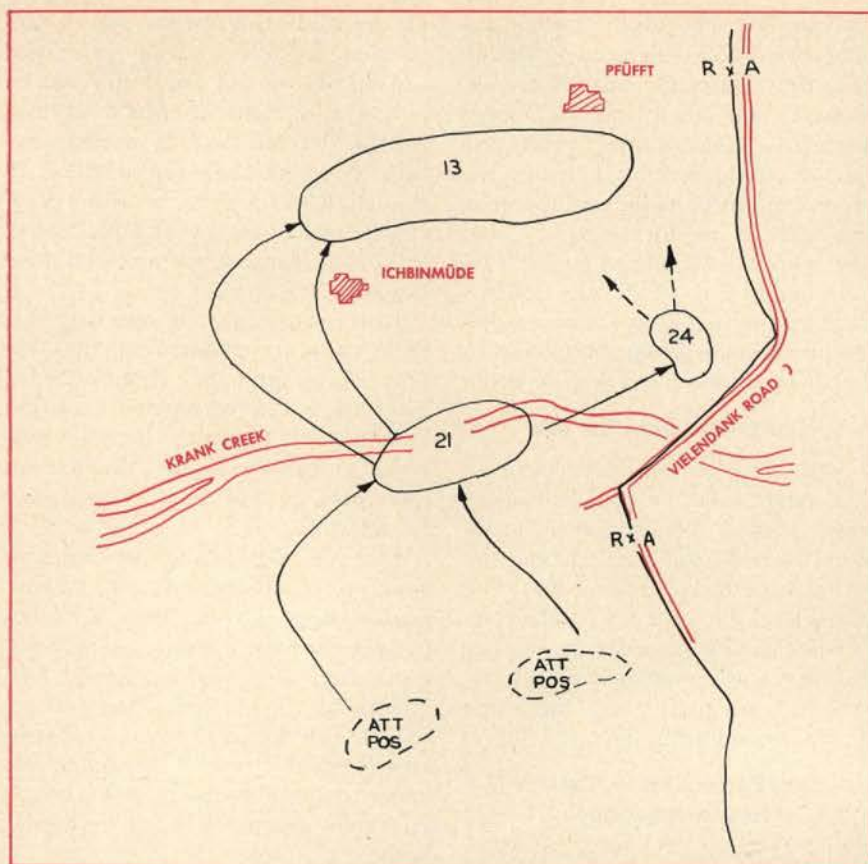


Figure 5

(for example) Routes Purple and Green and back via Route White.

### Operations Overlays

We have established as standard practice that all operations-type overlays prepared by headquarters in this division will include a few map locations (towns, rivers, prominent hills) for the convenience of recipients. This system is a very desirable one; it saves time, and to some extent eliminates misunderstanding.

Selection of features should be such as to provide quick understanding, without reference to a map, of certain of the most prominent bits of information: lines of departure, objectives, boundaries. Only one or two map points need be shown to identify each. Naturally one of the quickest ways of providing general orientation is to show a prominent river line, railroad, or highway.

Figure 5 shows a normal overlay, typically drawn. The red overprint shows our system: Note how the overlay information is now generally intelligible without reference to a map.

### Terrain Index

We have developed in the 2d Ar-

mored Division a device (or convention) which we call the "Terrain Index."

In the last war, it was common for armored units to use a system of "check points" or "reference points" as a low-level map locality code. As a rule these check points were road junctions, railroad crossings and other objects which had no military significance. The terrain index, on the contrary, numbers *only* terrain features of military significance—mostly hills and stream crossings, but also such items as important crossroads, and some towns.

Our terrain index is published on division level, being reproduced on an ozalid machine, of which I speak with due admiration and affection in later paragraphs.

The ozalid machine permits us to publish an indelible, easily read terrain index either in the form of an overlay (on which a number of prominent terrain features—rivers and towns—are sketched in, to render the index usable to a limited extent without transfer to a map) or as an overprint on a black-and-white map. In this case both the map and the overprint may be produced by a single

run through the ozalid machine.

The G3, being aware that the division is apt to be committed to action within a certain area, starts one of his more trustworthy indians to work at once on a terrain index. He may keep the results of this effort in the form of a negative, but will more often make up the prints and distribute them, for orientation and planning purposes, down to and including battalion headquarters.

The terrain index shows by a numbered circle each terrain feature likely to be of value in the anticipated operation. Additionally the principal routes—primarily those most apt to serve as approach routes, axes of advance, and main supply routes—are traced and lettered. Then phase lines running generally perpendicular to the probable axes of advance, and selected according to the configuration of the terrain, are added, and given names.

It is obvious that the terrain index must be handled with some degree of security, and the G3 prepares alternate terrain indices for issue in case of compromise.

Since the terrain index is usually issued to units well in advance of commitment, it is possible to commit the division to action on the basis of the briefest sort of order, rendered verbally in fragmentary form or sent by radio. Written orders are greatly reduced in length and complexity. And of course once the division is in action and moving in a fluid situation, the terrain index enormously simplifies the problem of control, designation of objectives, and designation of changes in mission, routes of march, axes of advance, main supply routes, etc. A good terrain index also reduces materially the misunderstanding of instructions.

Altogether, the device vastly simplifies the function of command, and enables the armored division to move with the speed and flexibility which is inherent in its organization and equipment.

### The Ozalid Machine

One day it occurred to us that the jelly pad deserved to be committed to the grave—with full military honors, of course, having served the Army without improvement since Sherman used it at the battle of Missionary Ridge. Casting about for a worthy



successor to this venerable gadget we struck on the ozalid machine. We managed to borrow one from a topographical unit, on an experimental basis, and now have a death grip on it.

The experiment has been an unqualified success. Division orders, overlays, terrain indices "going maps," intelligence reports, etc., now appear in bright indelible, and thus easily read form. Moreover, that delightful characteristic of the jelly-pad-produced overlay—of gradually fading into total illegibility as you peer at it—is mercifully lacking.

We have had a certain amount of trouble because the ozalid machine requires careful mounting to withstand the jolts of a truck ride, but these have been largely overcome. A product of the machine is shown at Figure 6. We even use it to reproduce instructional material, as per Figure 1.

ED. NOTE: Figure 1 was redrawn from the ozalid copy. However, we can truthfully say that the copy submitted to us is indeed legible.

One special trick is the production of an overprinted map, Figure 6. We

get from the topographical engineers map negatives which have certain obscuring features, such as woods, shown at only one quarter the normal intensity. The resulting print provides a strong contrast between the overprinted information and the map, although all are in the same color. The map is not quite so legible as a full color map, naturally, but is nevertheless quite usable and of course has the overprinted information on it in the most accurate and legible form.

#### Command from the Air

Some mention should be made of that magic machine, the helicopter, which permits the division on many occasions to be commanded from the air. It is of inestimable utility. We have a workable system whereby commanders on the ground may identify themselves to a slow moving whirlybird without performing the same service for an enemy fighter.

#### High Performance Aircraft Reconnaissance

The G2 of the 2d Armored Division is currently operating under a directive designed to bring about a

far greater facility, on the part of this division, in taking advantage of the capabilities of the Air Force reconnaissance squadrons. Much of this effort is devoted towards speeding the time of reports, so that information in the hands of the pilot, or in his camera, becomes quickly available to the tactical echelons of the armored division.

In this labor, we are receiving the enthusiastic cooperation of the Air Force. The principal obstacle to be overcome is the red tape which is inherent in any procedure between two services. But we do not doubt that ultimately we will arrive at a successful solution.

One great problem we are trying to work out is how we may take advantage of the negative report. As of the present time we get only positive reports, and of course those are frequently of the most vital importance to us. But to know that a certain area is possibly or probably empty of enemy troops may also be of the greatest value; argument is not necessary to prove that point.

Probably the answer lies in developing a terminology which will convey to us the degree of certainty, on the part of the Air Force, in saying that such-and-such an area is empty of enemy troops. Perhaps a percentage figure would do it: the figure 70% indicating that the Air Force reconnaissance agency would be willing to bet seven to three that the negative information is correct. Note that we could afford to bear no grudge against the Air Force if the report proves incorrect: they have told us that there is a 30% chance of their being wrong.

In a fluid situation we will not want to have reconnaissance information delayed by the time necessary for the Air Force to print and process photographs—reports of visual sighting, quickly relayed, will be more valuable. On the other hand night photographs will be of great value, provided we learn to handle them quickly. There is a great tendency in the average G2 section, upon receipt of a large bundle of aerial photographs, to be overwhelmed by the volume of the material and thereupon heave it into the corner of the truck.

Our G2, however, is required to do better: incoming photographs are processed immediately. The photographs are first separated, by strips.

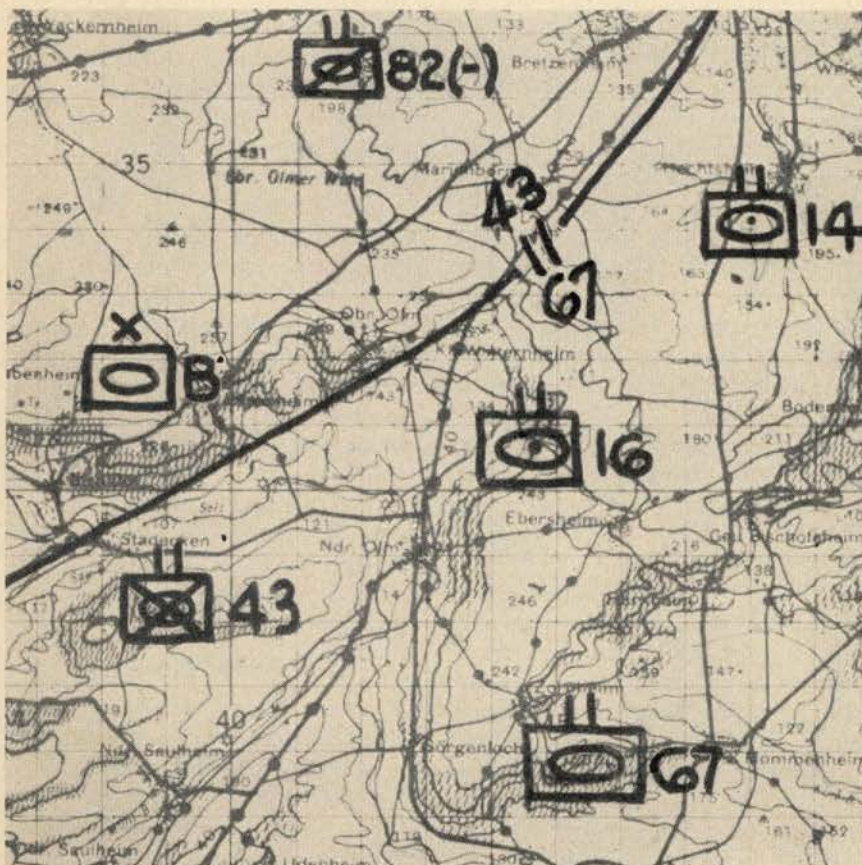


Figure 6



The photo interpreter then scans the successive pictures of each strip; a sample picture, at Figure 7, shows part of an Ack-Ack outfit going through a German town. The PI announces to a recorder (who uses the form at Figure 8) what is on each picture, being careful, of course, to avoid reporting the same object twice.

The team can run through a strip very rapidly, and total the number of guns, tanks, etc., photographed. The prints also give the locality photographed, and other data permitting the team to fill out the form. The data shown "PI Conclusions" is inserted, and the form is sent at once to the division operations center. There the G2 inserts his observations, as indicated, puts the data on the map, and notifies G3, C/S, affected units, and higher headquarters, as pertinent, checking off the form in the spaces provided. This system should provide us a means of getting the mass of de-

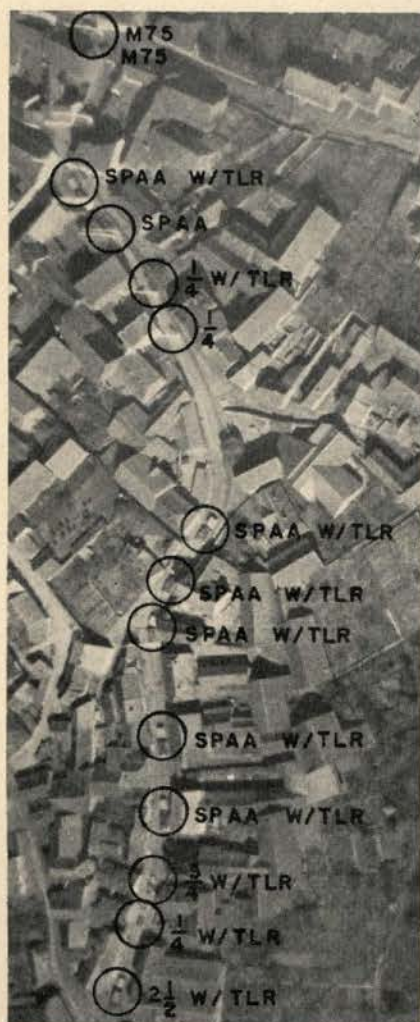


Figure 7

PHOTOGRAPHIC INTELLIGENCE REPORT						
MISSION			DATE/TIME		PRINTS	
06675			272025		1-7	
Sortie			Oct 53			
1106 (L&R)						
MISSION DATA			F/L		ALT	
			12"		2300'	
APPROX SCALE			1/2300		TYPE COVER	
					VV Recon	
DATE: 28 Oct 53						
MAP REF: T2-U2						
PRINT ACTIVITY						
1. Tk, 2-2 1/2 w/TLR. 2. Negative. 3. 3-1/4 w/TLR, 3-2 1/2 w/TLR. 4. 2-2 1/2 w/TLR, 2-3/4 w/TLR, 5 tk, 1/2 w/TLR. 5. 4-3/4, 2 tk, 4-2 1/2, 1/4. 6. Negative. 7. 6 tk, 8-2 1/2 w/TLR, 3-3/4, 1/4.						
SUMMARY 14 tk, 19-2 1/2 w/6 tlr, 6-1/4 w/4 tlr, 9-3/4 w/1 tlr.				LOCATION MA395135		
<b>PI CONCLUSION</b> Photos show one tank company in bivouac; however, there are too many 2 1/2 trucks for just one company. Disposition of one group in relation to other indicates possibly another tank company is in bivouac adjacent. Possibly battalion located in vicinity.						
One tank company is in bivouac at MA395135 at 272025 Oct 53. <i>21-20</i>						
<b>G2 OPN CONCLUSION</b> PW from 40th Tk Bn captured 1730, vicinity MA395095, states his unit was moving from MA450110 toward MA310140 but he became separated from the group and took a wrong turn.						
Movement of approximately 20 tanks along road at MA400100 to NW reported by artillery OP at 1730 hours.						
Probably entire tank battalion located in area, most likely the 40th, considering last known location.						
ACTION TAKEN						
<input checked="" type="checkbox"/> JOINT OPN MAP <input type="checkbox"/> OTHER						
DISSEMINATION <input checked="" type="checkbox"/> G3 NOTIFIED <input checked="" type="checkbox"/> C/S NOTIFIED <input checked="" type="checkbox"/> AFFECTED UNIT(S) <input type="checkbox"/> HIGHER HQ.						
Prepared by G2 HQ 2 A.D.						

Figure 8

tailed information provided by a mass of photographs into an easily utilized form in the shortest possible length of time.

### The Operations Center

The command of a division will always be greatly facilitated by a smoothly running Operations Center at division headquarters, and this in turn is made possible by a good physical setup in the G2 van, in the G3 van, and in the black-out canvas shelter which it is desirable to stretch between the two. The space under the latter we call "The Pit."

I shall not attempt a detailed description of our operations center. It is very desirable, however, that G2 and G3 devote a great deal of ingenuity in developing their vans, providing proper working space, drawers and cabinets, FM radio mounting, fans, and heaters—and perhaps most important of all, ample map space, which can be provided by sliding, nesting map boards.

In the pit the "Commander's Operation Map" is kept. It is most important that this be a large, well lighted, and very neatly maintained board, kept entirely up to date. Devices

which show combat command organization, time of last posting, major unit call signs, etc., may be placed out of the way around the edges of the board.

Both G2 and G3 data, in appropriate colors, are placed on this map.

We have found that neatness cannot be achieved with the ordinary grease pencil. Lines (such as zone boundaries, etc.) are put on with narrow colored strips of acetate. For unit designations we have purchased rubber stamp sets which make a very neat symbol, easily removed by a cloth dipped in solvent. The whole effect is a very professional looking map, providing a clear picture of the situation and calculated to inspire confidence among those who work at it, and to impress visiting "Elks."

Elsewhere in the pit are other map boards carrying such items as the published Terrain Index, and supporting fire plan when that is consolidated on a division level, G2 terrain analyses and "going" maps, aerial photographs or mosaics, etc. In one corner is a clattering teletype machine—the price of progress—and in the other a reclining messenger, usually asleep with his mouth open.



# Should I Request Transfer or Detail?

*This is the eighth of a series of articles from The Career Management Division which are intended to answer various and diverse questions which some officers of the three combat arms might have.*

**A**FTER serving in one branch for a period of years some officers are of the opinion that the grass is greener on the other side of the fence and they consider initiating a request for transfer or detail to another arm or service. The primary question which must be answered prior to determining further action is incorporated in one basic question: "Will the proposed change be in the best interest of the service?" This article outlines some of the considerations and processing actions involved in arriving at a final decision.

Prior to initiating a request each officer should clearly understand some of the differences between a transfer and a detail. A transfer, if approved, will permanently remove him from the assignment jurisdiction of his basic branch concurrent with assignment to another basic branch. The officer must be fully qualified to perform duty in the new basic branch for it thereafter will monitor his career and determine his duty assignments. Reserve Corps officers on extended active duty may apply for transfer if they are performing in the branch to which transfer is desired or if cogent reasons exist for transfer to a branch in which they are fully qualified to perform duty. There are no provisions for transfer of National Guard officers while on active duty; however, such personnel, if otherwise qualified, may apply for detail. Regular Army officers are not authorized to request a transfer to another branch until they have served

at least two years in their basic branch after appointment in the Regular Army, unless otherwise provided by Department of the Army to meet the needs of a specific branch. Although technically qualified for duty with another branch, an officer who has spent considerable time in his basic branch should apply for transfer only after careful and full consideration of all factors, since he may become neither "fish nor fowl."

A detail is a temporary shift to another arm or service in order to meet the needs of a specific branch. It does not effect a permanent change in basic branch. A detail may be considered comparable to an apprenticeship and normally should not be extended beyond 3 years. Officers who remain in a detail status for longer periods are deprived of improving their basic branch capabilities. They are depriving themselves of basic branch practice and theory as well as basic branch schooling. While officers are considered members of the branch in which detailed, they remain assigned to their basic branch. After a reasonable period, officers in a detail status should either initiate a request for transfer or they should request return to their basic branch.

Whether officers request transfer or detail, cogent reasons must be given to justify the belief that they are fully qualified to perform duty in the gaining branch. The reasons for requesting the change must be clearly stated and the application submitted through

channels. Indorsing commanders indicate their reaction to the request and if the request is not favorably considered they must state reasons therefor. Applications received from officers alerted or on orders for oversea assignment are returned without action. Returned applications may be submitted after arrival at an oversea destination.

Details for Army Security and Military Intelligence officers may be considered as "carrier" branch details because Army Security and Military Intelligence are components of the Reserve only and are not basic branches of the Army. Therefore, Army Security and Military Intelligence officers who are ordered to active duty are detailed in a basic Army branch appropriate to the officer's qualifications. This type detail normally is considered a "carrier" branch because duty is not actually performed in the detail branch. The Intelligence and Security Branch, Career Management Division, The Adjutant General's Office, monitors the career and determines duty assignments for Military Intelligence and Army Security officers. Army Security and Military Intelligence ROTC graduates on active duty are normally detailed to the branch of service in which they received ROTC training. Officers on active duty who are approved for transfer to Army Security or Military Intelligence normally are detailed in their former basic branch.

When applications for transfer or detail are received in Career Management Division, The Adjutant General's Office, they are referred to the applicant's basic career management branch. In the basic branch the entire record is reviewed and the application is forwarded with an appropriate recommendation to the career management branch to which the officer is requesting transfer or detail. If the losing and gaining career management branches approve the requested change in branch, appropriate orders are issued effecting the transfer or detail. In the event of disagreement between the gaining and losing branch, applications are referred to The Chief, Career Management Division, for final determination. Following are examples of the preceding type actions; Captain Jones requests transfer from Artillery to Armor. If both branches approve the request,



orders are published announcing the transfer. In another example, Captain Smith requests transfer from Infantry to Signal Corps. Infantry Branch disapproves the request and Signal Corps Branch approves the request. Captain Smith's application is then referred to Chief, Career Management Division, for final determination. In the Career Management Division the entire file of Captain Smith is reviewed. If after careful analysis it is determined that change is in the best interest of the service the request is approved and orders are issued announcing the change. If the request is disapproved, the correspondence is returned through channels indicating the reason for disapproval.

Periodically, the Department of the Army encourages submission of requests for transfer or detail to certain branches wherein there are officer personnel shortages. These announcements normally are published in Department of the Army Circulars and include the grade, MOS, qualifying schooling, or other factors which potentially qualify the applicant. Department of the Army Circular 58, 20 July 1953, encourages certain qualified officers to submit requests for transfer or detail to Artillery, Corps of Engineers, Ordnance Corps, Judge Advocate General's Corps and Medical Service Corps. Normally, an officer is not transferred from one branch to another without his consent; however, such transfer may be effected without the officer's consent should the Secretary of the Army deem such transfer necessary in the interest of the service.

The decision to initiate a request for transfer or detail to another branch rests squarely with each officer. After careful consideration, if the officer is firmly convinced that his transfer or detail is in the best interest of the service, he should submit his request. Each request is carefully considered and final determination is governed by the needs of the Army with due regard for the professional qualifications and desires of the officer.

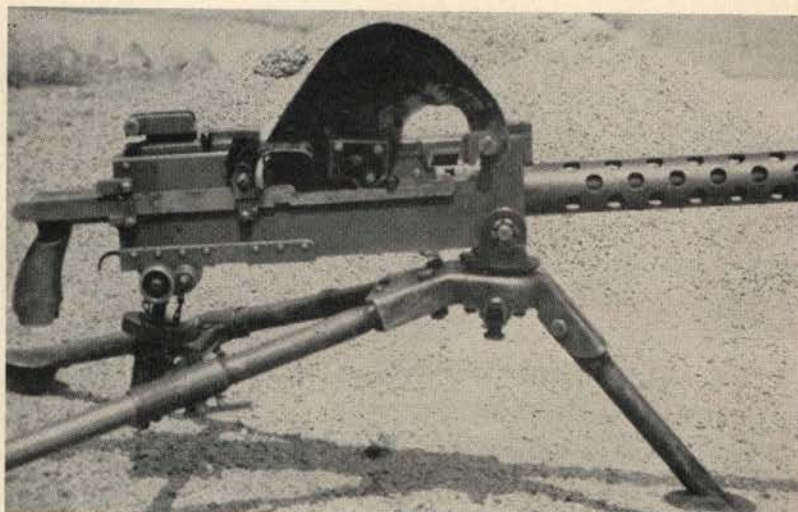
**In the next issue**

**RESERVE  
COMPONENT  
DUTY**

**CARDED**

## **SINGLE SHOT DEVICE FOR T41 SUBCALIBER**

*by* **CAPTAIN JOHN T. HODES**



U.S. Army

A special device has been created by Warrant Officer Donald Clark of the 370th Armored Infantry Battalion for use by the Reconnaissance Platoon tankers to enable them to fire single shot their caliber 30 machine guns which are mounted coaxially in the T41 tanks. The M1919A4E1 machine gun mounted coaxially in the T41 tanks sits too close to the 76mm gun for conventional single shot devices to function. Therefore, in order to fire the gunnery course subcaliber ranges, this device had to be used and was found to be most satisfactory.

The device is made of about 3/32" sheet metal cut as is shown in the picture. Upon firing, the bolt stud pushes the device up, permitting the bolt to slide all the way to the rear. Upon returning to battery the stud catches on the bottom projection of the device, preventing the bolt from going fully closed.

Because the "coaxe" is situated so close to the main armament, a retraction bar has been placed on the standard caliber 30 machine gun in order to make it function in the T41 tank. This device is successful because it catches the stud from the top and not from the bottom.

A photograph of the blueprint can be obtained by writing to Headquarters & Service Company, 370th Armored Infantry Battalion, APO 29, c/o Postmaster, New York, New York.



## Things To Come

With the advent of Fall, football games, cool weather and increased interest in mobile warfare, we are reminded that the 66th Annual Meeting of the U. S. Armor Association is just around the corner. In fact, preliminary plans have already been made to assure us of an outstanding meeting.

Not too long ago a letter arrived here in the office from an officer stating that he had attended the last two annual meetings and benefited very much from being present. He also stated that he believed the panel discussion utilized in 1953 was outstanding and the lack of such an activity in the last meeting (1954) was sorely missed. He went on to recommend that a two-hour forum be established in the agenda for the purpose of presenting papers on selected topics by selected individuals. We applaud the forward thinking of the writer of this letter and believe we can assure him that steps will be taken to adopt, at least in part, his recommendations.

At a Summer meeting of your Council this subject was discussed, prior to the arrival of this letter, and a committee formed to study the possibilities of a similar schedule and present it at the next Council Meeting at which time the plans for the Annual Meeting will be firmed up. Agreement to return to Fort Knox and to hold the meeting in January (as prescribed by the constitution) was reached at the last Council Meeting.

Also with the arrival of Fall, we believe the time appropriate to kick off an intensified membership drive to increase the active voting membership within our branch. Despite increased membership the difference between Armored Officers and Association membership is still too great.

Looking in retrospect at our progress made to date in 1954, it can be said that Armor has come a long way.

A new Regular division has been activated, one National Guard Infantry division has been converted, and word has been received that soon another division will be converted to Armor (see page 52 News Notes, this issue). New equipment has made us more mobile than ever before. Between these pages, issue by issue, we have tried to keep you informed as we have progressed and we sincerely believe we can say that Armor is on the move.

Won't you keep on the move with us by joining our ranks? We feel as long as you are an Armored branch member you should be an Armored Association member. By so joining you become an active voting member.

In this manner you can help to shape our views; for it is our desire to heed the wishes of our membership. We are not a closed organization. We are not a private commercial enterprise. We are a professional military association representing your branch. Your wishes are our command. While checking your own membership, won't you please encourage your fellow officers to join our ranks?

Furthering our belief that all branch officers should be members, regardless of component, we feel that ARMOR is an adjunct to training and should be brought to the attention of your key noncommissioned personnel through the medium of unit subscriptions.

In order to improve your own knowledge, enhance the prestige of your Association, and increase the opportunities of the members of your unit, won't you help us with this Fall drive today?

*The Editor*



# COMBAT LULL TRAINING

by MAJOR JOHN K. BRIER

**W**HENEVER a tank platoon, or a larger tank unit, is temporarily withdrawn from combat (actual or simulated combat) it is normal for the leader of that element to evaluate the recent action. Such evaluation often reveals some shortcomings within the tank crews in the practical application of tactics, intelligence, logistics, and personnel management principles originally taught each tanker in his early training.

Efficient leaders take advantage of temporary lulls in combat to improve their team. They do this, not only by first giving the team time to rest and rehabilitate itself, but also by retraining. Most leaders realize that basic training and early unit training are completed in such a short time that men don't really learn all they need to know to become good tankers. It takes plenty of repetition of crew drill, radio telephone procedure practical work, terrain board "firing," and physical work in the motor pool to make an efficient tanker. *Combat lulls must be used as retraining periods to achieve the desired results.*

Combat lull training must be pre-planned; it must stress fundamentals; it must require a minimum of training aids, and the overall training program must be flexible. The following is a description of such a program,

a program which any tank platoon leader or tank company commander can keep on a small file of 3-inch by 5-inch cards.

On the first two cards are the following general comments and instructions:

This combat lull training program is for the use of tank platoons and companies. Exclusive of the initial rest and rehabilitation which each unit needs after a withdrawal from action, the program encompasses six training weeks. Each week includes six eight-hour training days. The program can be initiated and interrupted and then taken up again at the last break off point as required by the tankers' tactical situation.

The first 24 hours after closing into an assembly area, after being relieved from combat duties, will be devoted to rest, relaxation, personal hygiene, and setting up the bivouac area.

The second 24 hours after closing into an assembly area will be devoted as follows:

16 non-duty hours;

6 hours—unload tanks, and other vehicles, of all personal gear and loose impedimenta; then clean same and re-stow all vehicles;

2 hours—perform 1st echelon checks on all vehicles.

Starting at 0730 hours, or at 1230 hours—whichever comes first after 48 hours spent as just outlined on this card—the platoon or company will commence training

outlined on the cards in this file.

This file includes two types of cards. One type card gives a daily schedule; these daily schedule cards are marked "1-1", "1-2", . . . "1-6", "2-1", . . . "6-6"—the initial number indicates the training week, the last number the training day in that week. Thus a card marked "5-3" shows the training to be accomplished on the third day of the fifth week of training. The other type card in the file gives certain information for the training subjects.

Training will continue on an eight hour per day schedule until combat assignments require otherwise. When subsequent relief from combat occurs the unit will resume training within the schedule shown on these cards where previous training ceased.

It will be noted that the training listed on the individual cards seldom accounts for eight full hours. The time differential between the scheduled instruction and eight hours will be utilized for controlled maintenance. Controlled maintenance, necessary to avoid having tankers spin their tracks and otherwise fritter away their time, involves scheduling maintenance periods together with fixed objectives. For example, on the first day's maintenance all tankers might be directed to concentrate on cleaning the fighting compartment; on the second day they might be directed to concentrate on cleaning and inspecting weapons and ammunition; on the third—suspension system and tools, etc. Such control assures the leader that over a period of time each tank is completely inspected and tended to by

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MAJOR JOHN K. BRIER, Armor, served in Europe during World War II with a separate tank battalion. Prior to his present assignment he was in Korea with a tank battalion, subsequently as Assistant G3, 45th Infantry Division. He is now assigned to the Foreign Aid Division, Deputy Chief of Staff for Logistics, Dept. of the Army.



- 651 Close order drill
- 103 Signs and symbols
- 509 Marksmanship—sight pictures, positions, and trigger squeeze
  - 2 Disassembly and assembly of 90mm gun
- 401 Types of radios in a tank company
  - 61 Checking suspension system
- 151 Characteristics of armor action

Figure 1

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999-Subject number    SUBJECT KEY CARD

- Title of subject
- General area of instruction—inside or out
- References
- Training aids required
- Length of class
- Remarks—such as list of qualified instructors

Figure 2

103

- Signs and symbols
- Outside
- FM 21-25, Chapter 3; map legend; and FM 21-30 (June 1951), Figures 1 and 2
- Blackboard and chalk
- 60 minutes
- Lt Brown, Sgt Carrol, and Sgt Darwin are prepared to teach this class

Figure 3

its crew. Incidentally motor officers find it easier to evaluate the effectiveness of maintenance periods when all crews have a definite, common mission for the same hours.

Figure 1 is an illustration of a typical card outlining the training for a day, in this case the first day of training of the first week of training. The numbers to the left of the subjects listed, i.e., 651, 103, 509, etc., are cross references to cards giving detailed information on the subjects.

Figure 2 is, as it says, a subject key card and should be part of the file of cards. It illustrates the sequence, placement, and meaning of information contained on each subject card.

Figure 3 is one of the subject cards referred to in Figure 1. Comparing Figures 3 and 2 we note that: the subject card number is 103; the title of the subject is "Signs and symbols"; the general area of instruction is outside; the exact references, for the instructor's use, in field manuals are listed; training aids required are a blackboard and chalk; the length of the class will be 60 minutes; and, in pencil, there is a note on the card listing Lieutenant Brown, Sergeant Carrol, and Sergeant Darwin as qualified and prepared to teach this class.

Figures 4, 5, and 6 are other subject cards referred to in Figure 1. The purpose of the subject cards is to assist the instructors.

Several instructors should be selected for each subject to insure the availability of a prepared instructor whenever one is required. In selecting instructors, officers have a wonderful opportunity to help increase the prestige and effectiveness of their NCOs. The vast majority of subjects that should be part of combat lull retraining periods should be taught by NCOs. Let the sergeants and corporals teach their crews and other crews while the officers spend their time training the NCOs how to teach. In combat lull training, armor officers can make real headway in developing the usefulness of NCOs. The instructors selected must rehearse their units of instruction, with all the required training aids, under the guidance of their officers. The instructors must be taught, and have thoroughly drilled into them, the basic requirement to teach their men through the use of practical application rather than through lectures and/or conferences.



509

Marksmanship—sight pictures, positions, and trigger squeeze

Outside

FM 23-35, para 78, 79, 80

Pistol/2 EM; L target/2 EM

30 minutes

All gunners are prepared to teach this class

Figure 4

2

Disassembly and assembly of 90mm gun

Outside

FM 17-12, para 24

1 tank/5 EM

20 minutes

All tank commanders are qualified as instructors

Figure 5

61

Checking suspension system

Outside

TM 9-718, para 223

1 M46 tank/5 EM

30 minutes

All platoon sergeants are qualified as instructors

Figure 6

As easy as practical application type of instruction (having the soldiers learn by doing while being supervised by active NCO instructors) actually is to conduct, the average instructor will attempt to lecture his students. Firm leadership must be exercised to prevent lectures and conferences being used in lieu of simple practical application type of instruction. Training time during combat lulls is too valuable to let some poorly prepared person waste it.

The combat lull training program and card file system explained in this article has been developed and utilized in the European Theater in 1945 and in the Korean Theater in 1952 and 1953. The program and card system have proved well worth the effort involved in their development.

The general concept involved in the above program can be employed for infantry, artillery, and technical service units of platoon and company sizes to a good advantage. This same general concept was expanded to form the basis for a flexible four-week program, progressing from individual training to platoon tactics, for tank companies of the 245th Tank Battalion in Korean operations in late 1952 and early 1953. Seldom was it possible to predict how long a company would be off the line; for that reason the following training system was used. Each company first initiated training under the four-week program and progressed as far as time permitted—i.e., until recommitted. Then after returning from the line the unit picked up where it had left off in the four-week program. Rotation's toll was so heavy that once a company finished the full four-week training cycle—punctuated by a number of weeks on the line—it needed to start all over again.

Even on the division staff level a similar system—concentrating on officers schools which teach the functions of the various staff sections—could be quite profitable.

When a unit has been relieved recently from combat every reasonable step must be taken promptly to correct basic deficiencies noted during the actions just concluded. A preplanned, flexible combat lull training program, and card file system, as described above, is a time proved, combat theater tested solution.



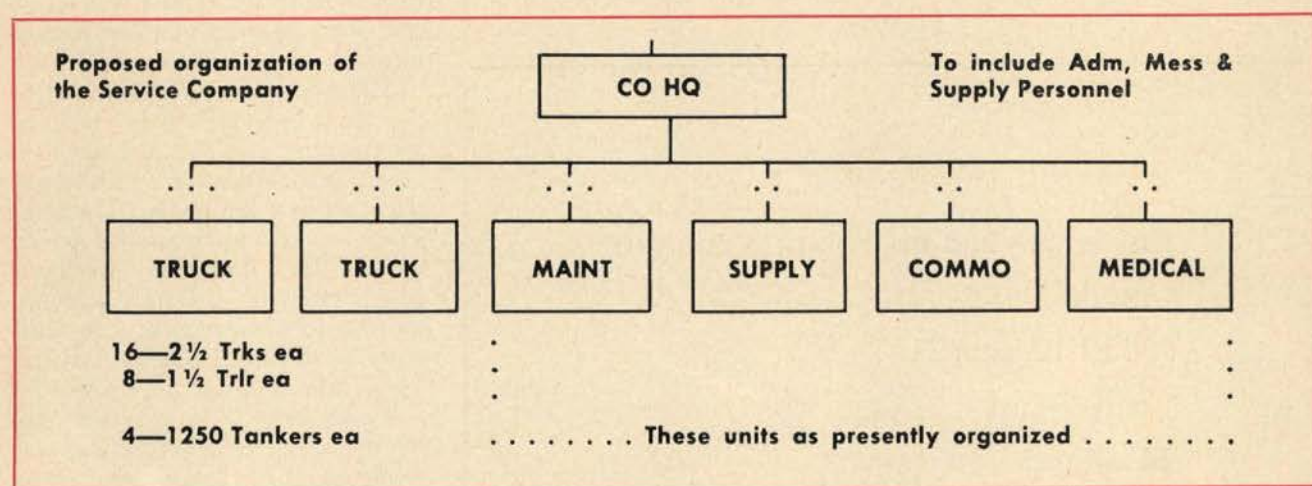
# ARMORED SUPPLY

by CAPTAIN EDWARD D. DOUGHERTY

**M**UCH has been written to the effect that adequate resupply is necessary if an armored unit is to remain mobile. Also the subject of Logistics of an Armored Division is frequently discussed. However, through years of experience, that has included assignments as tank battalion S-4, battalion trans-

Recent maneuvers in EUCOM, in which this officer participated, lead me to believe that much further thought is needed on this subject. Experiments indicate that additional truck units are required to maintain the mobility of an armored unit in a fast-moving situation. Experiments have also been run to determine the

Commo Section, Supply Platoon, and Battalion Maintenance Platoon from Headquarters and forming it into the well-known Service Company of old, with some new twists, resupply would get a decided lift. In addition, by reorganizing the Supply Platoon into two Truck Platoons, with Lieutenant platoon leaders, the needed added



portation officer (now supply platoon leader) and company commander of a reconnaissance company and a tank company, both in a tank battalion and an infantry regiment, I have found a lack of appreciation of the real cause for letdown in the battalion resupply picture. The problem is usually solved by the around the clock operation (actually on the road) of the drivers of the supply platoon and the battalion supply section. This problem has recently been magnified many times by the advent of our newer tanks with their greater gasoline consumption and heavier type ammunition.

**CAPTAIN EDWARD D. DOUGHERTY** served in the Pacific during World War II with a separate tank battalion. Recalled in 1948 he was assigned to Europe where he commanded a tank company in an Infantry Regiment. Subsequently he became S4 of a tank battalion. He is presently assigned as the Advisor to the 140th Tank Battalion, Pasadena, California.

advisability of augmenting the battalion supply platoon with 1250-gallon tank trucks (improvement could be made here with the development of a tracked tanker). The above experiments indicate that commanders and supply officers are not satisfied, a point well taken, with the present resupply picture.

At the present time all battalion supply and evacuation personnel are assigned to Headquarters, Headquarters and Service Company. This puts all administrative, staff and supply personnel under the command of the Company Commander, Headquarters, Headquarters and Service Company, who also must act as Headquarters Commandant in the field.

This places a tremendous burden on this commander who is also responsible for his reconnaissance and mortar platoon as well as the headquarters tank section.

By divorcing the Supply Section,

command supervision could be added.

This proposed organization would relieve the Headquarters Company Commander of all responsibility of administration, messing, maintenance, etc., for this battalion tail and would allow him to devote all of his energies to the control of the headquarters personnel and to his combat elements, which of necessity are now usually under *separate* command of the platoon leaders.

This proposed organization would place all logistical elements of the battalion in a separate organization under the immediate tactical control of the battalion supply officer (S-4) completely separate from the administrative and operational personnel.

The writer would certainly appreciate comments on this subject from all interested and everyone associated with armor definitely should be concerned.

We concur.—EDITOR'S NOTE.



# "How would you do it?"

## SITUATION

You are company commander of a reinforced tank company in the attack. The tank carrying the artillery forward observer working with your company has just been destroyed, killing all occupants. It will take considerable time for the remaining two members of the artillery forward observer section to catch up with you.

How can you get artillery supporting fire without waiting for replacement forward observer personnel? Who could be used as a forward observer after the remainder of the forward observer personnel report to you?



AN ARMORED SCHOOL PRESENTATION

AUTHOR: LT COL W G HOPKINS

ILLUSTRATED BY CPL E MANDARINO

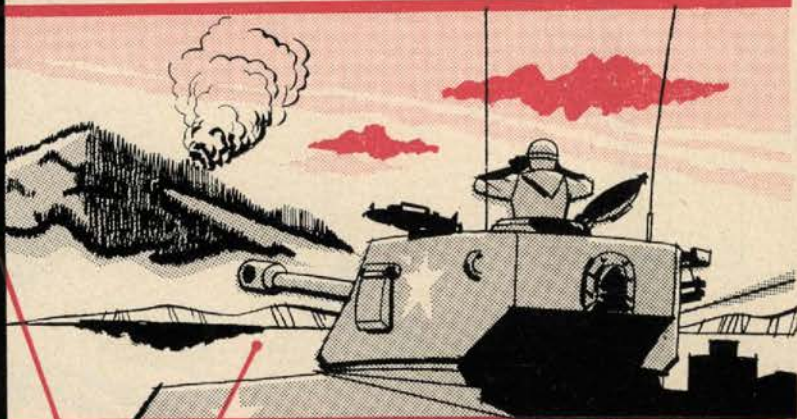
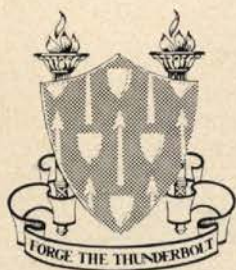


# "How would you do it.?"



**SOLUTION** An artillery forward observer section consists of one lieutenant (FO), one sergeant (reconnaissance), and one PFC (radio operator—jeep driver). Organic transportation is one ¼-ton truck; organic communication is one AN/PRC-8 and two AN/PRC-6's. When working with a tank company, the lieutenant forward observer is assigned a tank from the headquarters section of the tank company. Communication in the tank includes one AN/GRC-3 radio. (The forward observer would tune Set Nr 1 of the AN/GRC-3 to the artillery fire direction net. He would listen in the tank company command net over the auxiliary receiver.

The remaining members of the forward observer section would be following the attack in their jeep, a short distance to the rear. Prior to the attack you would have determined the frequency of the forward observer's fire direction net.



1

For immediate fire support you could set that frequency on the AN/GRC-3 in your tank and request artillery fire from the artillery battalion fire direction center.

2

Until the artillery reconnaissance sergeant arrived forward to act as the FO, your platoon leaders and you could adjust artillery fires which you would coordinate.

3

When the reconnaissance sergeant arrived you could use him as the artillery forward observer, since he is trained in the adjustment of artillery fire.



## FROM THESE PAGES

### 65 Years Ago

The pursuit of a repulsed enemy is exclusively reserved for the mounted supports. The dismounted men will not allow themselves to be drawn into it, but will use their fire to accelerate the retreat. If circumstances permit, they should join their mounts, in order to pursue the beaten foe, on horseback.

For the offensive, the instructions are generally in accord with those of the infantry; however, it is recommended to the cavalry to dismount as near the enemy as possible, usually at about 1,500 paces. From this to 800 paces the advance is rapid; at this last distance the methodical attack commences.

The Russian regulations prescribe the same formations as do our regulations for the dismounted cavalry, acting against mounted troops. Threatened by a charge, the platoons already deployed, rally at the commands of their chiefs, and await the attack of the enemy in solid order, firing at command. The skirmishers, who are protected by obstacles impracticable for cavalry, remain deployed.

Dismounted cavalry attacks artillery in dispersed order, the reserves joining in the attack of battery supports.

When the cavalry is accompanied by artillery, it is recommended to leave as much of a mounted support as possible, as a guard for the latter. In case of retreat, the foot combatants should cover the movement so as to give the pieces time to retire without disorder.

*Instructions for Foot Combat in the Russian Army*

H. T. ALLEN

1st Lt. Second Cavalry

### 50 Years Ago

Now then, is modern cavalry well enough armed for future fighting? The horse has been discussed from every standpoint. We have had thorough investigation of the saber, the lance and the tactical employment of cavalry; but not so thorough, perhaps, have been the discussions of cavalry firearms, the importance of which continues to increase as conditions change; and when we consider equipment we must always bear in mind that this part of the equipment will remain cavalry equipment, and will put no restraint upon the normal development of the arm.

Machine guns have recently been issued to the cavalry of several foreign countries, and we are thus led to inquire what would be the best course for us to pursue with regard to them. The idea is not a new one; such is the lightness and automatic action of the later patterns of these instruments that they are now able to perform the greatest service for cavalry by simplifying and strengthening the dismounted fire action, thereby enabling the cavalry leader to keep mounted and in readiness for movement almost his entire effective strength.

*Cavalry Machine Guns*

LT. CESBRUN-LAVAU

### 25 Years Ago

Recent studies in the mechanization of warfare, and particularly the adoption by our new cavalry organization of armored cars, raises in my mind the importance of armored railway cars and trains. It seems probable that any employment of American troops in warfare on this continent would call for a general advance along railroad lines. Modern warfare recommends the employment of troop trains to push combatant units as far to the front as possible, to see railroad troop trains used with celerity and audacity. Such troop-laden trains, however, will require all possible protection, not only from the air but from ground attack.

I consider that the experience of the several forces in the irregular but severe fighting which took place in Siberia in the years 1918-20 are capable of affording instruction and guidance on this important phase of warfare. This fighting was confined practically to the long line of the Great Siberian Railroad and its branches, including the Chinese Eastern Railroad.

*Russian Armored Railway Cars*

MAJOR GENERAL DAVID P. BARROWS  
40th Division

### 10 Years Ago

By that time all who would look could see that Lt. General Omar Bradley's plans called for a mighty infantry-artillery-tank-air team—a 1944 model blitzkrieg that knew no parallel in history—to carry the fight into Berlin. Infantry, riding on tanks, in light armored vehicles, sometimes on Shank's mare, mopped up after the fast-moving tanks, consolidated gains, swiftly herded thousands of demoralized German prisoners to the rear and continued to press on \* \* \*

By the first week in September Patton's columns had pounded into Verdun, the historic French city where, many of his men recalled, their own fathers had bled and died in 1917-18. In less than a day General Patton's army had taken ground that in World War I had required 4 years of relentless pounding and copious bloodshed to take.

Meanwhile, armored columns of General Hodges' First Army, operating on the left flank, had trained their guns on the Belgian frontier and seriously imperiled the right abutment of the Siegfried line.

Here, too, the armored division and the various separate tank units were being committed to employment as its experts had dreamed. Tank columns were closely supported by infantry and artillery. Deadly air activity broke through to mill around in the enemy's rear, disorganize his supplies, his reserves, his morale, and his communications. With bit in teeth, armor charged across the quiet French country toward Germany.

*Lightning War—U. S. Style*

CAPTAIN ARTHUR L. PADDOCK, JR.



# NEWS NOTES

## A New National Guard Armored Division

The Secretary of the Army recently notified the Adjutant General of the State of Tennessee that an allotment of an Armored Division to that State has been approved subsequent to the return of the 44th Infantry Division from active military service. This brings the total of National Guard Armored Divisions to four. A late press release stated that the 44th Infantry Division will become the 2d Infantry Division in early October.

## The Jersey Blues

The 50th Armored Division, New Jersey National Guard, is now known officially as the "Jersey Blues," it was announced recently.

Without a distinctive name since its organization eight years ago, the new designation conferred by the Department of the Army identifies the division as a New Jersey unit, and evidences the link between today's New Jersey National Guard and its predecessor colonial militia units as far back as 1747, when the name was first applied to New Jersey Colonial troops.

The new official designation of the division, approved and made a matter of record by the Chief of Military History, Department of the Army, is "50th Armored Division (Jersey Blues), New Jersey National Guard."

The name "Jersey Blues" was first applied to Colonel Peter Schuyler's regiment in 1747, following service in New York and on the Canadian border in King George's War. This regiment, numbering 650 volunteers, is reported to be the first body of uniformed troops organized in the colonies for service outside their home district.

## Alloy Found Better Than Weapon Steel

A replacement for steel in making military weapons has been developed by the Armour Research Foundation of the Illinois Institute of Technology, it was announced recently.

The lightweight titanium alloy, it was said by Dr. Donald J. McPherson, non-ferrous metallurgy supervisor of the foundation, can be used in the manufacture of heavy weapons and tanks and will greatly increase their mobility.

The alloy was developed under a program sponsored by the Watertown Arsenal Laboratory, Watertown, Mass., which has conducted research in titanium for the Army. The foundation has been conducting titanium research for five years.

Dr. McPherson said plates of the

alloy were heat-treated and tested at Watertown and found to be "very promising."

Col. B. S. Mesick, commanding officer of the arsenal and coordinator of the Army titanium program, said the alloy was 40 per cent lighter in weight than high-strength steel.

The Watertown tests also show that the alloy is highly corrosion-resistant and has properties that compare favorably with those of steel used in weapons.

## Army Ordnance to Award Contracts

Combat and tactical vehicles valued at \$266,000,000 will be procured for delivery during the period June, 1955, through May, 1956, the Department of the Army announced recently.

Although no breakdown of the money involved was available the Commanding General of the Ordnance Tank-Automotive Command at Detroit, Michigan, announced that the vehicles to be procured include: the Patton M48 medium tank, M59 Armored Infantry vehicle, M42 twin 40mm Self-Propelled Gun built on the light tank chassis, and the 5-ton cargo truck.

All of the vehicles are currently under production and are scheduled to continue under existing contracts through May, 1955. Requests for proposals will be sent to the prospective suppliers through their nearest Ordnance Districts within a few days. Firms which will be considered are a part of the active or standby base established for each vehicle.

Current producer of the M48 medium tank is the Fisher Body Division of General Motors Corporation at their plant in Grand Blanc, Michigan. Other producers equipped to make the tank are Ford Motor Company and the Chrysler Corporation.

The M59 Armored Infantry vehicle is currently produced by the Food Machinery Corporation in San Jose, California.

The twin 40mm vehicle is now being produced by the Cadillac Division of the General Motors Corporation at the government-owned tank plant in Cleveland, Ohio.

International Harvester Company is currently producing the 5-ton truck for the Ordnance Corps. Other producers equipped for producing this vehicle are Mack Truck and Diamond T.

## NATO Tanks Order Placed in Britain

Two major offshore procurement contracts, totalling \$40,650,000, have been placed in Britain by the United States Army Ordnance for production of Centurion Mark V tanks and ammunition, it was announced recently.

Headquarters of the United States Army in Europe said that \$27,150,000 is for the manufacture of Centurion tanks, tank-recovery vehicles and spare parts, and the rest for production of ammunition.

The tank contract is in addition to earlier offshore procurement contracts placed by the United States Army Ordnance in 1952 and 1953 for Centurion Mark III tanks and spare parts costing over 100 million dollars.

The tanks under the new contract will be completed at the Royal Ordnance Factory, Leeds, and at Vickers-Armstrong, New Castle. Their production will involve more than 100 separate British concerns. The completed tanks under the new contract will be turned over to North Atlantic Treaty countries in Europe.

The contracts bring to about 280 million dollars the value of United States Army Ordnance contracts awarded to the Ministry of Supply and private British firms under the Mutual Defense Assistance program since May, 1952.

## Essentials for Successful A-War

Field Marshal Lord Montgomery, Deputy Supreme Allied Commander in Europe, recently outlined the four essentials of successful land warfare in this atomic age.

These are: an active peacetime force ready to go into action to meet any surprise attack; well-organized reserves with sufficient peacetime training to enable them to fight defensively whenever called upon; sound organization for logistics and movement; and a sound civil defense organization.

Predicting that atomic and nuclear weapons will be used by both sides as soon as war breaks out, Field Marshal Montgomery said the introduction of such weapons must obviously profoundly affect not only the organization of armies and tactics of land warfare, but also the organization of civil defense and of the entire national effort. A complete reorganization of reserve armies of all NATO nations is necessary, he declared.

## British Concentrate on Atomic War Games

The British, Canadian, Dutch, Belgian and U.S. troops who will take part in the "Battle Royal" army exercises this September will concentrate on atomic weapons for offense and defense.

"The strategy and tactics adopted will be in direct relationship to this new major atomic factor in war," General Sir Richard Gale, Commander of the Northern Army Group of NATO, announced recently.

More than 30 per cent (or 48,000) of the 140,000 Allied troops taking part in the war games will be British. The others will be drawn from Canadian, Dutch and Belgian NATO forces. In addition, several American crews man-



ning 280mm atomic guns, will be loaned from the Central Army Group.

Also taking part in the exercises will be a number of Britain's new Conqueror tanks. The Conqueror is considerably heavier than the famed Centurion which rendered such invaluable service in Korea, and has even more powerful guns. It retains the four-man crew and exceptional mobility of its predecessor, and is equipped with the latest system of fire control.

### The 6th U. S. Cavalry

The Veterans' Association, 6th U. S. Cavalry which includes the following organizations; the 6th Cavalry Group, 6th Cavalry Reconnaissance Squadron, 28th Cavalry Reconnaissance Squadron, and the 6th Armored Cavalry Regiment, have established headquarters at P. O. Box 987, Chattanooga, Tennessee. Former or present members of any above mentioned outfits are eligible for membership by contacting Mr. Joseph J. Tocco at the Chattanooga address.

### 761st Tank Battalion Holds Sixth Annual Reunion

The 761st Tank Battalion held its sixth annual reunion in Chicago early in September of this year. It is believed that this battalion is the only separate battalion in the Army to hold an annual reunion. Over 200 members and guests were in attendance.

### Combat Television

The Army demonstrated recently how television can be used to direct troops engaged in battle. The demonstration took place at Fort Meade, Maryland.

A National Broadcasting Co. audience watched as portable vidicon cameras fed a stream of information from the field to a commander at regimental headquarters. The commander directed his troops through an amphibious landing and a successful assault on an "enemy" stronghold.

The portable cameras were carried by infantrymen, mounted on armored vehicles, and landing craft and airborne by helicopters.

Army Chief of Staff General Matthew B. Ridgway said after watching the demonstration that he was sure "television will take its place beside the atomic cannon" in the Army's arsenal of weapons.

General George L. Back, the Army's Chief Signal Officer, emphasized, however, that combat TV is still in "the beginning of a stage of development."

The field maneuver was carried out by the First Battalion of the Third Armored Cavalry Regiment.

During the maneuver, the TV cameras were used to follow a tank-infantry attack across open terrain. The cameras went with troops and landing craft across a body of water and later televised a skirmish and the demolition of an ammunition dump.

The airborne cameras furnished information from behind "enemy lines" and about the movement of "enemy" troops and supplies.

At one stage of the operation, an intelligence officer questioned a "captured enemy officer" and looked over a "captured enemy map" via TV.

The regimental commander had before him a bank of eight TV monitors which were linked by microwave to the cameras in the field. He could choose the picture from any monitor to be cast on a larger screen for detailed observation.

### Packet Training

The newest innovation in Army training methods, born only last December in the 3d Armored Division, has proven to be a "precocious child" in its short span of operation.

Called the "tank packet company" because of its utilization of closely knit five-man crews, the new system has become the source of well-rounded, well-trained tankers.

The great success of this packet system has been evidenced by reports of outstanding achievement from points all over the world where Spearhead-trained outfits have been shipped. The challenge of the field has proven the tremendous effectiveness of such a plan of training.

Under the packet system the advanced Armor company is divided into nine Armor platoons, each of which is divided into five-man crews, or "packets." One of the crew members, a man who has already completed the 10-week advanced training course, is held over in the company as a Tank Commander. A trained tanker, picked for his leadership abilities and knowledge of the M47 tank, this man is responsible for the guidance of the four trainees assigned to him.

The five men train as a group, live as a group and, finally, ship as a group.

When training is completed, the packet platoon ships intact. The integrity of this platoon is guaranteed as far as the first overseas station. As a result of this training method, each crewman eventually becomes proficient enough in tank operations to do the job of every other man in the crew. Before the introduction of the packet training system, tankers were trained as driving, maintenance, or gunnery specialists. In the "packet" each man becomes a jack-of-all-tanker trades, capable of driving, firing, and doing maintenance. In this way each man has the comforting knowledge that he can fully depend upon any one of his buddies to "take over" should the occasion arise.

As far as his training is concerned, the Armor packet trainee receives the best from specially-assigned and specially-trained teams from the Regimental Instructor Group. Instruction by experts is received both in the classroom and in the field. Each phase of "book learning" is fully supplemented by practical application of the material on the tank itself.

Currently, the 3d Armored Division is the only unit in the country training tank crewmen. Since the graduation of the first Advanced Armor Packet company in February of this year, Spearhead-trained packet platoons have been sent to nearly every corner of the globe. More than 180 of them have trained and shipped under the new system. After completion of training many of the platoons have gone directly overseas. Europe took the greatest number—thirty-one; eighteen have gone to the Far East, four to Alaska, four to Australia and two to the Caribbean.

Within the United States, sixty-four Spearhead platoons have gone to the Fourth Army, three to the Sixth Army and one to the 11th Cavalry Regiment here at Fort Knox. Most of these platoons were slated for further training with TO&E outfits before shipment overseas.

### TOP COMMAND CHANGES



Maj. Gen. Hobart R. Gay  
CG Fifth Army



Maj. Gen. Thomas L. Harrold  
Headquarters III Corps



Reviews  
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# THE BOOK SECTION

## "A BOOK FOR EVERY AMERICAN, IN OR OUT OF UNIFORM"

**COMBAT ACTIONS IN KOREA.**  
By Major Russell A. Gugeler.  
253 pp. Maps and Index. Combat Forces Press, Washington, D. C. \$5.00.

Reviewed by  
**CHARLES B. MacDONALD**

**U**NLIKE the novelist or the playwright, the historian is not the master of his material. Like Ponderero in H. G. Wells'

—The Author—



Bauer

Major Russell A. Gugeler served in Europe during World War II. He accompanied XXIV Corps to Leyte and Okinawa for the single purpose of gathering historical information. Subsequently he wrote, in collaboration with three other writers, *Okinawa, the Last Battle*. After recall to active duty in 1951, he was assigned to Korea to gather information for this book. He is presently assigned to the Historical Division, U. S. Army, Europe.

*Tono Bungay*, he has to say, "It isn't a constructed tale I have to tell, but unmanageable realities."

Not only are historical realities inflexible; often they are elusive. For the military historian, modern warfare's fast-moving situations, its commands, messages, and events written on air and erased by the wind, have complicated the matter further. Yet, paradoxically, we have seen in this era of modern warfare the most conspicuous effort to get at the truth of what actually happens on the battlefield, not in the general's command post but down where little frightened clusters of men are doing the dying. What happens when the squad, the platoon, the company, the battery, or the battalion actually comes to grips with the enemy?

During World War II, efforts to penetrate the veil of the battlefield centered about the "combat interview." This is an historical method that never had been practiced widely before, though its lineage can be traced to Thucydides. As soon as possible after the event, "combat historians" talked with survivors in an attempt to catch the truths that on the actual day of battle (to quote Sir Ian Hamilton) "may be picked up for the asking [but] by the following morning . . . have already begun to get into their uniforms." These interviews are providing one of the bases for the combat volumes being written by the Army's Office of Military History in the series, *The U.S. Army in World War II*.

During the Korean Conflict also, several teams of historians followed the fighting. In addition, Capt. (now Major) Russell A. Gugeler went to Korea on a special assignment. He was to accumulate material designed especially for a volume of short and varied studies illustrating the nature of combat as experienced by small units of the three major combat arms: infantry, armor, and artillery. As the former Chief of Military History, Maj.

(Continued on page 56)

—The Reviewer—



U.S. Army

Charles B. MacDonald, author of *Company Commander* and the *Arncliffe and Schmidt* portions of *Three Battles*, served in Europe during World War II as a rifle company commander. He is presently Chief of the European Section of the Office of the Chief of Military History, Department of the Army, where he is engaged in research and writing of a new volume in the Army series of World War II books entitled *The Siegfried Line Campaign*.

ARMOR—September-October, 1954



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## "STARK REALITIES OF WAR AT THE TACTICAL LEVEL"

**IMPACT. The Battle Story of the 10th Armored Division. By Lester M. Nichols. Illustrated. 325 pp. Bradbury, Sayles, O'Neill Company. New York, N. Y. \$7.50.**

Reviewed by  
**Lt. Gen. Willis D. Crittenger**

**I**N reading of tests planned for an armored and infantry division in Texas this fall, we are told that they are scheduled in

the hope of perfecting a new battlefield organization for thermonuclear warfare.

This, together with the emphasis on the so-called "new look" for the armed forces, designed to provide the sinews of war necessary for the much disputed "massive retaliation," would seem to focus timely attention on any review of the military characteristics of the fighting elements that go to make up our Army.

*Impact* tells the battlefield story of the 10th Armored Division Tigers.

Through its pages the reader can review the military capabilities of one of our armored divisions of ten years ago.

What changes are now due in our armored divisions remain to be seen.

But at least, here is a running account of what armor accomplished in World War II, if such combat achievements of a past decade are still important considerations in the atomic army of the future.

This book vividly describes the role of the 10th Armored Division in World War II, and its service in four American armies.

It is a diary of one of those sixteen American armored divisions that knifed their way across France and Germany to establish a record of battlefield achievements that will go down in history.

That day ten years ago when the 2d Armored Division marched out of Fort Benning, past the saluting cadre of the 3d and 11th Cavalry, that was to make up the hard core of the new

10th Armored Division, we had every reason to expect that these veterans would give a good account of themselves. *Impact* tells their story. And their story is something to read about: the sacrifice, humor and tragedy of War—it is all there.

After entering the port of Cherbourg in September 1944, the 10th Armored Division rocketed 600 miles through France, Luxembourg, Belgium, Germany and Austria in a

(Continued on page 59)

—The Author—



U.S. Army

Lester M. Nichols served, during World War II, with various Armored Divisions as an Armored Infantry Platoon leader, a Tank Unit commander and Press Officer of the 10th Armored Division in Europe. Subsequent to the War he became associated with several New York City newspapers and is presently engaged as the Assistant to the President of The City College of New York in charge of public relations. He holds a reserve majority.

ARMOR—September-October, 1954

—The Reviewer—



Volpe

Lieutenant General Willis D. Crittenger has a distinguished Army career. He has served in the mobile arm since his graduation from USMA in 1913. He has been closely associated with the development of armor. President of the U. S. Armor Association for three years, he has been President of the Greater New York Fund since his retirement on December 31, 1952. He is also Advisor to the Mayor, New York City on Civil Defense.



## COMBAT ACTIONS IN KOREA (continued)

Gen. Orlando Ward, put it, he was to show "the confusion of battle, the importance of discipline, and the necessity for constant, realistic training."

That these items can be depicted effectively and that you can catch truth while still it is naked is demonstrated more than once in the book which Captain Gugeler has written, *Combat Actions in Korea*, a part of the Army's official History of the Korean conflict. This volume, I venture to say, is the most effective literary indoctrination available in our language to those who seek a vicarious introduction to war at the fighting level.

This is not to say that Captain Gugeler and the other historians in Korea—to whom he acknowledges gra-

usual. The overall product is as close to combat reality as we may expect to approach on the printed page for a long time; in the process, it is educational and, what's more, fascinating reading.

In the twenty studies, Captain Gugeler concentrates upon units ranging in size from a squad to a task force equivalent to a reinforced infantry regiment. The actions too are varied: infantry in withdrawal, as a covering force, in attack and defense, on patrol; armor in support of a river crossing, on patrol, as a relief force, in pursuit; artillery in defense, attack, and withdrawal. Arranged in chronological order, the studies provide a surprisingly complete outline of the

who have used the combat interview method in search of truth, both from World War II and Korea, have fallen into the trap that ensnares many newspaper reporters, scenarists, and novelists when they write of war; they soup up truth. The face of war is so lined and troubled in its own right that adding a new wrinkle cannot be other than obvious and false.

The writing here is almost deadpan. Note these examples:

His eyes still showed white and he kept moaning 'rain' and the men near him wished he would shut up. As the column proceeded through the village, enemy fire killed the drivers of the first three trucks. The column halted and an enemy machine gun immediately raked it at point-blank range. Jumping off the tailgate of the third truck, Lieutenant Campbell scrambled for the right side of the road . . . Leaning against the embankment, he fired his carbine at the machine gun's flashes. A body, an arm torn off, lay nearby on the road. The overturned truck, its wheels in the air, rested in the small field below the road. Someone pinned under it kept pounding on the truck's body. Wounded men, scattered nearby, screamed either in pain or for help. Up on the road someone kept yelling for men to drive the trucks through . . . It began to snow again—a fine, powdery snow.

Truth as Captain Gugeler has found it is neither always pretty nor exemplary. There is nothing admirable, for example, about overbearing national conceit; yet we and our soldiers had it during those early days in Korea. An ugly undertone of it permeates the early studies in this book ("As soon as those North Koreans see an American uniform over here, they'll run like hell.") and those dealing with the period of Chinese intervention. ("Don't let a bunch of Chinese laundrymen stop you.")

Neither is a man by the simple process of donning a GI uniform changed into a fighting saint who can lick his weight in Orientals with one hand tied behind his back. Sent to bolster an infantry defense, 15 artillerymen at Chipyeong-ni "turned



U.S. Army

Allied cooperation at its best—American tanks supporting the British Infantry.

cious credit—have overcome entirely the inflexible and elusive aspects of battlefield realities. There are twenty studies in this book; like collected short stories, they vary considerably in quality and interest. This is attributable both to the nature of the dissimilar events and to the varying amount of facts Captain Gugeler was able to uncover. In the first study, for example, which is entitled "Withdrawal Action" and relates the experiences of one of the first infantry companies committed in Korea, three or four genuinely exciting incidents are bound together by essential but nonetheless prosaic and lengthy connective tissue. Yet this is not the

entire war in Korea from the overconfident days of first American commitment, through exultant advance to an ignominious retreat from the Yalu, to the frustrating months of the Panmunjom truce talks.

One secret of such an effective penetration of the fog of battle must be that the author went to Korea with a specific purpose in mind: this book. That he and the other historians who provided his source material turned inquisitive minds in the right directions must be another. I believe further that much of the ring of authenticity may be attributed to the fact that the author has eschewed flamboyance in his presentation. Some



and ran back down the hill." Others cowered in their holes. "You'll die down here anyway," a lieutenant yelled as he grabbed a couple of men by their clothing. "You might as well go up on the hill and die there." The men wouldn't budge. In another instance, a sergeant in charge of an outpost panicked at first sight of the enemy. "They're coming!" he screamed in a voice that threatened to transmit his panic to the men around him. "They're coming! Millions of them! They'll banzai us!" In another position, a lieutenant left his bunker. "It's getting too hot around here for me!" he said. "Let's get out!" Between 15 and 20 men followed him toward the rear.

This is how war always has been and always will be as long as the human equation is involved. Yet the message is clear that adequate training and good leadership will hold this kind of thing to a minimum. Some of the artillerymen, for example, were replacements who had no genuine identification either with their own unit or with the infantry unit they were to reinforce. Men of another artillery unit repulsed a strong attack on their gun positions primarily because they had confidence in each other and in their scheme of defense, which one dry-run after another had made second nature. At the outpost, a lieutenant tackled the terrified sergeant, pounded other men on their helmets, and yelled to "Get up on that damned hill!" His composure regained, the sergeant a few minutes later was reassuring his men. "We're holding them!" the sergeant shouted somewhat incredulously. "By God, we're holding them!"

A reassuring aspect of this book is that the author has not gone out of his way to find deplorable incidents. He has reported these in the natural course of chronicling the truth.

As on the battlefield itself, plenty of incidents of exemplary performance and heroism counter the inglorious. As a tank column passed through a constricted roadcut, a round from an enemy bazooka set one of the lead tanks on fire. "The men in the fighting compartment . . . were killed. Although severely burned, the driver . . . gunned the engine and drove through the cut and off the road, thus permitting the remainder of the column to advance." Though wounded



U.S. Army

Tanks crossing the Han River in Spring of 1951 to give close Infantry support.

twice, a jeep driver was a mainstay of a successful defense established after a patrol was ambushed. Tankers bolstering a river crossing were not content to provide static fire support; with initiative and courage they discovered a ford that, though treacherous, enabled them to join the infantry during crucial fighting in the bridgehead.

Individual heroism is not necessarily its own excuse for being; only when channelled into the sphere of united effort does it realize its full potential. Four men in an attack displayed enough courage and initiative to warrant as many Medals of Honor; yet the platoon failed in its mission. Unorganized into a single, vigorous

effort, the individual exploits, for all the bravery involved, were but isolated pinpricks in the enemy's hide.

How effective a role did intelligence information play in Korea? As illustrated effectively by Captain Gugeler, the Americans greatly underestimated the enemy in two major instances, at the start of the fighting and as the first Chinese trickled haphazardly onto the scene. Yet the studies in this book leave me to wonder if these were the only intelligence failures.

In light of the outcome of the fighting, it is understandable that we cannot paint the enemy side of the picture; yet the enemy story from an



U.S. Army

Static fire support by tanks, although not the ideal solution, was often necessary.



intelligence standpoint also is missing. Is this the writer's omission, or were small units unsupplied with the picture at the time? Although squads, platoons, and companies need not be concerned with the enemy's unit designations nor the names of his commanders, they do need current estimates of his local strength, of his minefields, of his machine gun positions. To know that a machine gun occupies the knoll on the left, while only riflemen inhabit the knoll on the right, is of vital concern to the platoon leader; the reader in turn can appreciate the platoon's dispositions and actions fully only if he knows whether this kind of information was available. If the G2 estimate stops at regiment or battalion, it is not fulfilling all its possibilities.

Supplementing all but two of these battle studies is a discursive "critique," which is based upon comments from the Army schools and compiled by Lt. Col. Carl D. McFerren. They hardly could have been better done. I find myself reluctant, nevertheless, to endorse their inclusion in the book. It has been noted elsewhere that "a number of factors that often vitally influence a battle action—some of them unrecognized even by the participants—inevitably remain a mystery." Captain Gugeler himself notes that "Sometimes there are obvious gaps because important information was lost with the men who died in the battle. Sometimes the accounts are incomplete because the author failed to learn or to recount everything of importance that happened." In light of admitted lacunae, and even though the avowed purpose of these critiques is modest, i.e., "to stimulate thought and promote discussion," I find disturbing the weight imparted to these critiques by the authority that inevitably is invoked by the printed page. To me the critiques are crutches for healthy study which should not require them.

Footnotes are sparse, which I believe is all to the good. It will encourage those to whom annotation is an evil distraction; those who ordinarily insist upon detailed documentation will be placated by Captain Gugeler's matter-of-fact presentation. A man who writes this way can be trusted.

Technical detail has been kept at a reasonable minimum without loss of

## ACTIONS AND PARTICIPATING UNITS

1. **WITHDRAWAL ACTION**  
Co. A, 34th Inf.
2. **ATTACK ALONG A RIDGE-LINE**  
Co. A, 34th Inf.
3. **DEFENSE OF A BATTERY POSITION**  
Btry A, 64th FA Bn.
4. **AN ATTACK TO THE REAR**  
Co. G, 7th Cav.
5. **TANK ACTION AT CHONGJU**  
Co. D, 89th Tk Bn.
6. **ARTILLERY AT KUNU-RI**  
17th FA Bn.
7. **CHOSIN RESERVOIR**  
1st Bn, 32d Inf.
8. **TWIN TUNNELS PATROL AMBUSH**  
1st Bn, 23d Inf.; det of Co. F, 21st Inf.
9. **DEFENSE OF CHIPYONG-NI**  
23d Inf; 37th FA Bn; Btry B, 82d AAA AW Bn; Btry B, 503d FA Bn.
10. **TASK FORCE CROMBEZ**  
23d RCT; 5th Cav; Co. D, 6th Tk Bn; Co. A, 70th Tk Bn; Btry A, 503d FA Bn.
11. **TANK SUPPORT**  
Co. A, 89th Tk Bn, 35th Inf.
12. **RIFLE COMPANY AS A COVERING FORCE**  
7th Inf.
13. **ARTILLERY IN PERIMETER DEFENSE**  
92d AFA Bn; Btry A, 17th FA Bn.
14. **BUNKER HILL**  
38th Inf; 9th Inf.
15. **TASK FORCE GERHARDT**  
2d Inf Div; 187th AB Inf; 72d Tk Bn.
16. **MILLION DOLLAR HILL**  
Co. K, 5th Inf.
17. **BLOODY RIDGE**  
9th Inf.
18. **HEARTBREAK RIDGE**  
Co. G, 23d Inf.
19. **OUTPOST EERIE**  
Co. K, 179th Inf.
20. **COMBAT PATROL**  
Co. A, 35th Inf.

educational value. The civilian as well as the soldier will find this book fascinating reading.

An accolade is due the publishers as well. Their use of a simple format and a convenient size encourages reading; the maps they have provided are adequate without being cumbersome or forbidding.

Of the twenty studies, I was most entranced by "Chosin Reservoir," the story of a dreadful retreat in below-zero cold by about two battalions of infantry in face of the first Chinese onslaught in November, 1950. Not since Theodore Plevier's *Stalingrad*, a novel based upon fact, have I seen the stark countenance of war so vividly through the eyes of another.

One of the most provocative studies is "Task Force Crombez," an account of what was essentially an armored action. A company of tanks supported by a company of infantry made a quick, sharp thrust through about ten miles of enemy territory to aid beleaguered defenders of Chipyeong-ni. The task force succeeded, though at high cost to the infantry. Equipped with that spurious acumen called hindsight, we may speculate that the task force might have accomplished its mission without infantry assistance and thereby have saved lives. Yet the need for tank reinforcement at Chipyeong-ni was urgent; infantry spelled a measure of security for tanks that could not help at Chipyeong-ni if they were left in flames along a Korean road. As the thoughtful reader will discern from this and the other studies, the question with two sides is nowhere more evident than in military operations.

Considered as a whole, *Combat Actions in Korea* is like a trip up and over a Korean ridge. You start in a rice paddy to ascend a ridge of steadily mounting interest. At the top, which is the approximate center of the book, you come to "Chosin Reservoir," "Task Force Crombez," and two other fascinating studies: "Twin Tunnels Patrol Ambush" and "Chipyeong-ni." Then you go down the ridge toward another rice paddy on the other side.

For all the inflexible and elusive aspects of battlefield realities, they provide in this instance a trip up and over a Korean ridge that is provocative and exciting all the way.



## IMPACT (continued)

seven months' campaign, capturing 650 towns and cities along the way, providing the fabric for mobile ground warfare as only armor could.

With today's trend toward armor as a combat arm which offers a chance for victory and survival on the battlefield, the story of this division is documentary evidence of what could be accomplished a decade ago with the mobility and firepower of tanks.

Without fanfare the author has recorded the day by day account of the Tiger combat achievements, which contributed to the justification of the tactical role developed for American armor from those earliest days back in the 1930's.

He tells the story of rampaging tanks in the capture of the 2000-year-old Metz Fortress.

The reader is swept along with the 10th Armored blitz of the Saar-Moselle triangle following closely behind the artillery bombardment into historic Trier and later "described in a signed statement by Field Marshal Jodl as one of the most important phases of the war." Then came the race toward Kaiserslautern and the River Rhine.

The text keeps pace with the Tigers, as they crash into southern Bavaria and the Austrian Alps, in a stirring climax to the War. The charts are simple and understandable.

The temptation to delve into the high strategy and international diplomacy has been resisted by this World War II writer. Nor does this book glamorize the tankers, the men who drive the battle wagons, or serve the guns, or any other armored soldiers. It is difficult to understand how the written word could possibly glamorize such harrowing, man-killing duties.

But the author saw it, and has written his realistic, rather loosely knit story, in a way that tells how those men lived—in battle, on the march, and in bivouac—as only an eyewitness can. It treats the stark realities of war at the tactical level.

The courage, the stamina, the initiative, the spirit, the leadership, the friendships, the understanding of the American soldier—as well as the hunger, the heartaches, the frustrations—are all there in the countenance of human attributes and expression of



The Tenth Artillery digs in gun position at Trier.

U.S. Army



The Tenth Armored crosses over the Moselle at Trier.

U.S. Army



The Tenth Army occupies the outskirts of Saarburg.

U.S. Army



privates, sergeants, majors, colonels; yes, and even generals.

And what the privates and sergeants have to say oftentimes provides the reality that gives the book some of its greatest appeal.

If the reader is looking for a studied, high-level treatise on the strategic concept of World War II, this book is not it. Instead *Impact* tells the battle story of this one Armored Division, and of the American soldiers who were in it. For that reason it is worth reading.

The readability of the book is enhanced by the inclusion of a number of verbatim copies of press releases written at the time by the author, who was press officer of the division on its

tankers, and the close interdependence of all elements surrounded in that historic fight.

Anyone who ventures within the text is almost certain to share the numbing tension of valiant men as they quietly prepared the defense of Bastogne against the onrushing spearhead of 14 crack German divisions.

In his inimitable style, James Cannon filed a dispatch describing one of the 10th Armored Task Forces, quickly improvised of cooks, clerks, radio operators and other specialists, and named SNAFU, which inflicted such heavy casualties that the GI word for despair, overnight at Bastogne became a synonym for gallantry.

The reader will not forget the pic-

assault at Bastogne and at the underbelly of the Bulge in northern Luxembourg. It is no wonder that our Tiger lines were cut to shreds."

The New York Public Library has called *Impact's* chapter on Bastogne, "the best account of that confused campaign."

And then there was Crailsheim—another fight in which a major element of the 10th Armored, launched boldly forward into the fast-moving tide of battle, is soon cut off by superior German numbers.

The division had rolled eastward in darkness, collided with the enemy, and completed a 180 degree turn from Heilbronn. It then drove 31 miles behind the enemy line to Crailsheim. Now the Tigers were 40 miles from the nearest VI Corps supporting units.

The Germans, quick to sense the situation, attacked to isolate the advance elements which were by now in the Crailsheim area.

Soon supplies were running low; and to make matters worse, the road was cut.

Crailsheim was assuming all the characteristics of a smaller Bastogne.

Richard J. H. Johnson, of *The New York Times*, described the Germans' furious attempts to cut the 10th's supply route from Bad Mergentheim to Crailsheim. The Luftwaffe followed up an early morning dive-bombing and strafing attack on Crailsheim with reckless, low-level slashes through the day on American positions and supply columns.

"In the last 24 hours the only supply route was cut a number of times in a half-dozen different places.

"It was reopened time after time by the 10th's armor. The road was called a 'rolling bahn' or bowling alley, by German PWs."

But, as in Bastogne, once again air transport was effectively used.

The 55th Armored Engineers were sent in to prepare the airfield for the big C-47s bringing in fuel, food and ammunition to the beleaguered Tigers.

Upon their return the planes were to evacuate our wounded.

The battle report by the author further describes the activities of their supporting Tactical Air:

"When the Twelfth Tactical Air Command bombers established a protective cover over the American forces, the battle presented the odd spectacle



U.S. Army

Mutual Tank-Infantry support by Tenth Armored personnel speeds advance.

advance across France and Germany into Austria. It also includes press dispatches filed at the time by well-known war correspondents.

While others have told the heroic deeds of the 101st Airborne Division in the epic story of Bastogne, the author focuses attention on the very important part played by Combat Command B of the 10th Armored.

The odds were incredibly stacked against the paratroopers and tankers.

Words are inadequate to describe the gallantry of that little band at Bastogne.

Although it has been said by some that without armor, both within and as rescuers, Bastogne might have been a different story; this account features the stalwart stand of paratroopers and

ture of tanks, artillery, and infantry, firing in all directions, fighting on foot, plugging gaps in the circumference, running low on ammunition, the freezing weather, looking after the wounded, improvising communications, improvising everything—hanging on, hanging on—until the day after Christmas when 4th Armored Division reinforcements arrived.

As the author describes it, "Twenty-nine days from the beginning of the German blitz, the 10th Armored left Bastogne in a raging blizzard. In a period of thirty days CCB had been assigned to the Third, First and Seventh American Armies, further testimony of the mobility of armor. . . . The 101st and 10th Armored had taken the full force of the furious





U.S. Army

Tanks of the "Tiger" Tenth blast out enemy snipers as the Allied Advance rolls across Germany during Spring of 1945.

of two opposing air-ground contests going on simultaneously.

"9th Troop Carrier Command, heavily escorted by P-47s of the 6th Fighter Wing, landed on a strip marked with our own panels.

"Five cubs flew in medical teams and medical supplies, with equal success, and on the way out evacuated wounded.

"In two days, fifty transports of the 9th Troop Carrier Command and protected by blunt-nosed P-47 Fighters brought in 20,000 gallons of gasoline, 7,000 rations, 100,000 rounds of small arms, and 1,000 rounds of 105mm ammunition.

"Our superiority then weakened the German effort, forcing the Luftwaffe to give up battle and flee from the area."

Crailsheim had been successfully supplied from the air, again illustrating the flexibility of close air-ground support.

Although the author used to advantage a period of seven years in preparing and checking his manuscript, had the story been available to the public shortly after the war, it might have provided a factual background of realism for some of the writings of that time. H. V. Kaltenborn, the veteran commentator, has described the book as the "definitive history of one of the great combat units of the Second World War."

As it is, *Impact* takes its place among the records of the World War II fighting, at a time when America's potential might in armor, as symbolized by another United States ar-

**As indicated by the author, the 10th Armored had but two commanders from the day of its organization until the end of fighting. General Paul W. Newgarden, who organized and trained it to the motto of "March, Maneuver, and Shoot," was killed in a plane crash in July of 1944. Upon learning of this tragic accident, which was such a loss to the young Tigers, General William H. H. Morris, Jr., then commanding the XVIII Corps, was assigned to the division at his request, and led it through all of its combat. Both of these commanders contributed much to the development of armor in the United States Army.—Reviewer's Note.**

mored division and three armored cavalry regiments, is very much a vital factor in our NATO organization on the European continent—a symbol of America's potential might in armor for the whole world to see and remember.

It is a war record of men and machines locked in battle that makes the reader proud of every Tiger who wore the triangular insignia of the 10th Armored.

The story is told by the route of march, depicting armor in a war of movement, from Cherbourg (23 September 1944)—Mars la Tour—First Enemy Contact—Luxembourg—Metz—Bastogne—Trier—Kaiserslautern—The Rhine—Heidelberg—Crailsheim—The Danube—Garmisch—to Marseilles (3 October 1945).

We were lucky to have such stalwart soldiers in the epic fight along that route of advance, so vividly described in this battle story of the 10th Armored.

Although the 10th Armored battle service of seven months was less extensive than that of some of the earlier divisions, its 4,000 casualties, the objectives captured, the missions accomplished, and the 7,000 decorations to its gallant members, all so vividly described in *Impact*, record imperishably for history that there was never a dead hand on the throttle of the Tiger Tanks in World War II.



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(See The Book Section)

NOVEMBER-DECEMBER, 1954 • 85 CENTS





# ARMOR

*The Magazine of Mobile Warfare*

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Published by THE U. S. ARMOR ASSOCIATION • 1727 K Street, N. W., Washington 6, D. C.

25 November 1954

Dear Member:

With the publication of this issue we are closing the sixty-third volume of the Association's journal.

Looking back through the years we see that many changes have taken place within our branch. The most significant change was the passing of Cavalry and the birth of Armor.

Looking into the future we can only speculate as to what the concepts of Armor will be.

But returning to the present we need not speculate because it is a known fact that in January of the new year the annual conference of the Association will be held at Fort Knox, Kentucky. This meeting of members promises to be the biggest and best get-together to date. We have tentatively set up a two-day affair with an outstanding guest speaker, several panels on current Armor doctrine and a demonstration of "Armor in the Attack."

Renewing old acquaintances and meeting new friends and fellow professionals from the field of mobile warfare will be a memorable experience.

Mark the dates January 27-28, 1955 on your calendar and plan to be with us at Fort Knox. Detailed information can be found in Armor Association Notes elsewhere in this issue.

Now, turning to our next issue and another year, we feel that the Armor branch will continue to move forward and that your journal will keep you abreast of the latest changes . . .

Sincerely,

*The Editor*





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# The German General Staff

by  
Walter Goerlitz

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## LETTERS TO THE EDITOR

### A Point Well Taken

Dear Sir:

In your picture display "Training in Germany," September-October 54 issue, the center picture of infantry advancing in open in front of tanks may create a false impression. Your picture is contrary to my interpretations of par 91, FM 7-17. Keep the dismounted infantry man out of the open at all times. When in the open let the tanks stay well to the front, and in close terrain push the "doughfoots" ahead.

CAPT. JOHN T. HODES

Co A, 370th Armored Infantry Battalion  
APO 29, N. Y., N. Y.

### Requests for ARMOR

Dear Sir:

I would like to have the five back copies of ARMOR Magazine, which contain the five parts of "Notes on the Training of an Armored Division."

This article has been widely read by officers and staff NCO's of this Battalion, but the number of copies are limited. Therefore it would be greatly appreciated if an extra copy could be sent.

WILLIAM S. RUMP  
Captain, USMC

3d Tank Battalion  
3d Marine Division  
FPO, San Francisco, Cal.

• We have received many requests for extra copies containing the articles by Gen. Howze. We can furnish extra

copies, in limited numbers and at the usual cost, of all these articles except the January-February 1954 issue. Our supply of this particular issue is completely exhausted.—Ed.

### Foreign Armor

Dear Sir:

May I take this opportunity to thank you for the "Outstanding Armor Graduate" Award which I received this past June.

Now, as in the past, I find your magazine interesting and valuable. Of special interest to all are articles on German and Russian armor, and the tactical employment thereof.

Please enter my membership to the Armor Association.

2D LT. LEE F. WOLLARD

Co B, 4th Tank Battalion  
Fort Hood, Texas

• Thank you. Lt. Wollard received his award as the outstanding Armor graduate from New Mexico Military Institute for 1954.—Ed.

### Change of APO

Dear Sir:

This is not the kind of letter I enjoy writing but it appears that if I don't, I may not get any more issues of ARMOR Magazine at all.

I subscribed to ARMOR this last time along with many other officers of this Battalion, the exact date I have

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**Rates:** See bottom of contents page.



forgotten but it should not be necessary for me to give it to you. I have failed to receive the last two issues of the magazine for which you have already been paid.

I enjoy reading ARMOR, and I hope you will immediately correct this situation, I don't enjoy paying for something I fail to receive. From what some other officers have said, this apparently happens quite often and if so, I'm sure you do not know about it.

CAPT. THOMAS J. PETERSON

2d Battalion, 14th Armored Cavalry  
Regiment

APO 800-2, N. Y., N. Y.

• You are right Captain Peterson, we did not know about it. Although you remained in the same unit, your APO was changed and we did not receive a change of address. First class mail is forwarded but, as we have said many times, second class mail is not sent to the new address. Whether you have changed station or just APO's please keep us informed and we will keep you informed with the latest issue of ARMOR.—Ed.

### Flying Tanks

Dear Sir:

There seems to be a fair amount of agitation to give Armor a face lifting and put them in the air as well as on the ground. The light reconnaissance vehicle that can be transported or flown by air behind enemy lines would be a great innovation and give the forces possessing such a weapon the invaluable element of surprise. The design of such a vehicle leaves much to the imagination.

Such a vehicle should be armed with rockets, or a recoilless rifle, in addition to light machine guns. Weight must be kept to an absolute minimum and the general overall design of a streamlined shape maintained. A crew of

two men should be sufficient. The flying saucer keeps coming to mind as a general design. Mother nature provides some of the answers to problems of this type and a good look at the turtle might provide valuable information. Such a vehicle will operate primarily on the ground and not from the air. The air will be a secondary element. The armoring of this thing is tricky. Present day armored vehicles are large masses of sheet steel built to bounce projectiles off. How about using the idea of absorption penetration and deflection all together and cut down the weight? I've never read anything about projectiles hitting a rotating surface or a spring loaded flap for deflection, which is an attempt to absorb impact with hydraulic action. Some work has been done with laminated nylon for body armor; how about the same thing for vehicles? Last but not least, the old flak curtain that was used in ships during the war might prove to be practical.

How do we get this contrivance into the air? The helicopter just won't do it, and equipping it with wings, control surfaces, propeller, and power plant defeats the basic purpose of the machine. The air foil should be of the telescopic variety or standard wings detachable immediately after landing. The old Italian idea of using a tube to feed a propeller a stream of air could be used for both ground and air motivation. Or if gears and wheels are in order the tractor and trailer principle can be applied for air tow. Air speed must be kept low and several hundred feet is sufficient altitude for operation.

CHARLES B. LANIGAN

3729 Garner Avenue  
Kansas City, Missouri

\* \* \*

ARMOR appreciates letters of comment with thoughts on published articles, or ideas for other articles. Let us hear from you—soon and often.—THE EDITOR.

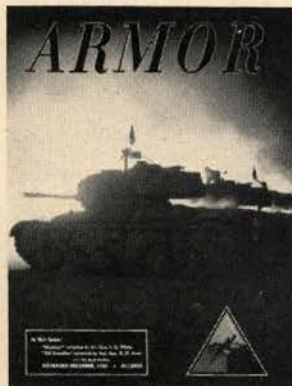
# HITLER: A STUDY IN TYRANNY

by

Allan Bullock

Here is a detailed and dramatic canvas of world history in the days when men drifted toward totalitarianism, and of the cataclysm which followed. Here is the incredible story of the formation of the Axis, of how Mussolini became the puppet of his master to the North, of how neither could dupe the insatiable Franco. Here are the men, the events, the documents and the records; the Anschluss, Czechoslovakia, Munich, Prague; the Nazi-Soviet pact, the fall of France, the decision to attack Russia. All have been exhaustively examined.

\$6.00



## THE COVER

The night firing cover picture was taken during a problem this past May in Korea. The tanks belong to the 89th Tank Battalion, 25th United States Infantry Division. This night practice firing was held at Tagewanni, Korea, and substantiates the claim that in the U. S. Army, training is continuous "round the clock."



# As One Man Views It!

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Recently a letter came across this desk with a press release from the Third Armored Division which caused considerable thought, and it is deemed worthwhile to bring it to the attention of all readers.

The Third Armored Division has adopted the policy of handing out cards to all trainees when they leave the Division for another station. They ask that the trainee keep the card and after several weeks have elapsed subsequent the arrival at a new station, they are to fill out the card and send it to the Division at Fort Knox. The card contains recommendations for suggestions in training methods, difficulties encountered, and other related subjects. It is felt that these replies assist the General Staff of the Division in evaluating the training given to former members of the Third Armored Division. With this thought in mind the letter, addressed to Major General Gordon B. Rogers, the Division Commander, is published as follows:

\* \* \*

2 October 1954

"Dear Sir:

"I am a soldier in the U. S. Army stationed in Germany. I have been here since the last of April. I am in an Infantry company in the 5th Infantry Division. You do not know me and maybe I have no business writing to you.

"I had my basic training at Fort Knox last winter. I had my first 8 weeks at B-57 and my second 8 weeks at A-67. After our second 8 weeks we

were placed in Carrier Company No. 7. We left the United States April 14. Most of the men in our carrier company are now in the 10th Infantry Regiment.

"When we left Fort Knox we were told to fill out a card that was given to us. It was addressed to you and on it was information concerning our assignment in Europe. I lost my card and was not able to send it to you. That is one of the reasons for this letter.

"The other reason for this letter is to thank you for the training that was given to us at Fort Knox. It seems to me that we received much better training than many of the soldiers that were here when we came. We were better informed about our job in the Army and our mission in Europe. Because of this, the job that was given to us was easier. The other day I was told by one of our Master Sergeants that we were the best group of Privates that had come into the company since he had been here. It made me feel good and I couldn't help but be proud of Fort Knox.

"I am glad that I can serve my two years in the U. S. Army. If this is all that I have to do for my country I cannot complain. I am glad that I have been given the chance to see part of the world that I would not otherwise see. I am also glad that I will have the opportunity of continuing my education on the GI Bill of Rights. The Army has many things that I do not like but while I am in I will try to make the best of it. Again I wish to



thank you and your staff for the training you have given to me."

\* \* \*

In reproducing this letter we are not trying to publicize the accomplishments of any particular outfit—that is contrary to our editorial policy. Nor do we intend to glamorize any individual—that also does not assist in the professional development of our membership.

We do applaud the foresight of General Rogers and his staff in exploring all facets in their attempts to continually improve on their methods in training. They likewise have reached the ultimate goal by inculcating in new trainees a spirit of pride in unit. To attain this goal during the comparatively short period of basic training is indeed worthy of note, and is a tribute to the officers and noncommissioned officers responsible for the training, well-being and indoctrination of this individual and his associates in the Army from civilian life and the comparative security and comforts of an American home.

In addition to these reflected thoughts which tend to renew our faith in our jobs in the Army, several questions arise which should set the wheels in motion and make a follow-up necessary. This soldier states that there are many things in the Army that he does not like. Now nobody knows better than a leader of men, be he a commissioned or noncommissioned officer, that it is impossible to please everybody in a unit. It would seem in

this case, however, that this letter deserves a follow-up to this man's unit in Germany to ascertain what he does not like about the Army and the reasons therefor. Certainly the writer points out two of the most beneficial features concerning him as an individual when he realizes his opportunity to explore a part of the world which might otherwise be denied him and, secondly, the opportunity to further his education on the GI bill when he is discharged. What principal things does he dislike and what can we do now to correct them either at the training or tactical level?

This letter should serve as an impetus to all unit commanders to better understand their men and to better train them to do their assigned jobs when they move to the units which will be their homes for a least the period of time left on their current enlistment. It also should serve as an impetus to further our efforts to continue *Our Army* as the best trained, best informed, and best led Army in the world.

To centralize these thoughts one is reminded of a famous statement attributed to the late General Patton. He often discussed the duties of an officer, which apply equally as well to noncommissioned officers. He stated:

"The safety, honor, and welfare of your country come first

Always and every time.

The honor, welfare, and comfort of the men you command come next.

Your ease, comfort, and safety come last  
Always and every time."



by CAPTAIN JOHN C. BURNEY, JR.

CARDED

## PIPELINE IN THE SKY

*To capitalize on Armor, with its fast moving, hard hitting, columns of tanks, Armored personnel carriers, and self-propelled Artillery, we must keep them re-supplied with fuel, which to the tank is "The staff of life." Herein, an expert, who has worked with the problem, discusses Air re-supply.*

All photos U.S. Army



**T**HE aerial highway by which tons of vital supplies, including 35,000 gallons of gasoline, were delivered by parachute to encircled marines at the Chosin Reservoir in Korea is a matter of history. The success of this lifeline through the sky requires no further plaudits.

We view with pride the fact that the marines with much of their equipment were saved; but we accept with complacency certain inefficiencies of our latest method of logistical support, aerial delivery.

Let us examine more closely the results of these Chosin Reservoir drops. Of the gasoline delivered in fifty-five gallon drums, forty per cent, nearly half, was lost because of the rupturing of drums on ground impact. Results were scarcely better when five gallon containers were used. Webbing was tied through the handles of the cans; and when the parachutes snapped open handles broke and valuable fuel plunged earthward. Let us not permit our success in extricating the 1st Marine Division to blind us to the revelation of our shortcomings. *We urgently need an efficient method for the aerial delivery of gasoline.*

Aerial delivery, now in its infancy, is on the threshold of a field of broadening application and growing importance. Are we in Armor cognizant of the potential of this newest method of resupply? Do we fully realize the many advantages to Armor of an effective technique for the aerial delivery of fuel? Has the development of such a technique received deserved emphasis?

The resupply of armored units, especially during an exploitation, poses weighty problems for those charged with the support of the fast moving columns; but the results are well worth the price. Highly mobile units far behind the enemy front are especially effective in cutting lines of communication, destroying supply installations, and creating the utmost confusion and disorganization. In deep slashing thrusts into the enemy's

CAPTAIN JOHN C. BURNEY, JR., a 1946 graduate from USMA and a frequent contributor to ARMOR, is presently assigned to the G3 section, Fifth Air Force, FECOM. Prior to his present assignment he was with Army Field Forces Board No. 1, Fort Bragg, North Carolina.



rear areas, armor's firepower, mobility, and shock action are fully employed to effect the maximum destruction of the enemy and his will to fight.

The decisiveness of such operations was repeatedly demonstrated during World War II. A major world power, France, was brought to her knees in one month largely as a result of a highly mobile type of warfare then termed the *Blitzkrieg*. General Heinz Guderian raced 220 miles to Dunkirk and then sped 240 miles behind the Maginot Line to Switzerland. This was accomplished with German equipment inferior in quantity and quality to that of the French. In 1945, the Soviet General Volski, after a series of crushing attacks, dashed from central Poland to the Baltic Sea and cut off hundreds of thousands of Hitler's troops. The day of penetrations extending for hundreds of miles, with all the inherent logistical problems, is most certainly here.

In future wars, mobility will be the key that unlocks the door to military success. To defeat a numerically superior enemy we must be capable of rapidly moving from one objective to another. Highly mobile units have the necessary speed for rapid dispersion and concentration required in warfare dominated by the atomic bomb. The victors of the battles of the future will employ flexible teams of armored infantry, tanks, and self-propelled artillery; for these units possess the tactical or battlefield mobility required to observe to maximum advantage the time honored principles of economy of force, mass and surprise.

But swift movement of hundreds of heavy vehicles demands tons of food for hungry engines. And this brings supply agencies into the limelight, for by some means a continuous flow of fuel must be maintained to the combat elements. Without competent logistical support, our armored columns will be doomed to failure.

Hitler could not keep the fuel tanks of his Panzer units full when he was deep in Russia because his wheeled supply vehicles were unable to negotiate muddy unimproved roads. The German offensive ground to a halt, and the tide turned. With this example before them, many officers strongly advocate full-tracked supply vehicles for the armored division. But



The H19 helicopter's limited capacity makes it unsatisfactory for fuel re-supply.

this proposal does not contain the complete solution to the problem; wheeled or tracked supply vehicles are not flexible enough to support fast moving columns which are subject to rapid changes of pace and direction. Also, unless tactical units are diverted to protect supply convoys, our lines of communication to units engaged in deep penetrations stand a great risk of being severed. A reliable method for the delivery of gasoline to fast moving units must be developed.

We faced this same problem in 1944 when General Patton was racing across France. Having outrun truck transport, columns of the Third Army were resupplied by C47 airplanes, which landed at captured airfields. Our tanks drove deep into France and were finally halted a short distance from the Siegfried Line by the diversion of fuel to another front. The effectiveness of this exploitation may be judged by General Von Blumentritt's words in *Von Rundstedt the Soldier and the Man*: "There was nothing to stop them [the Americans]. Many [German] divisions simply did not exist any longer." The Nazis had underestimated the Allies'

ability to overcome logistical difficulties which normally impede the progress of large numbers of troops during long, rapid advances.

As clearly demonstrated by Patton's success, only the cargo airplane has the speed, range, and flexibility to provide adequate logistical support to armored units. The use of aircraft flying at speeds of two to three hundred miles per hour will erase the time and distance problems which have plagued supply officers in the past. The effects of poor terrain, guerrilla action, destroyed bridges, and attacks on lines of communication will be discounted by the use of aerial supply lines. Airplanes can hurdle terrain barriers and reach areas inaccessible by normal supply routes. Preplanned resupply missions can be executed on a moment's notice. And if a unit moves while its supplies are en route, the drop zone can be quickly changed in accordance with the situation; aircraft have the flexibility required to adapt their missions to rapidly changing situations. On the other hand, the lack of speed and flexibility of the cargo trucks of the armored division renders them incapable of delivering large quanti-



ties of fuel when long distances, poor roads, and rapid movements are involved. The vehicle which can most effectively support armor is the airplane.

The efficient delivery of fuel by air will have far reaching results. The speed and flexibility of our armored units will be enhanced when commanders are rid of the threat of severed supply lines. Tactical units will not be diverted to protect lengthy accompanying trains. Units on tracks can cut themselves away from road nets required for wheeled supply vehicles, and armor will be able to make full use of its mobility and shock action.

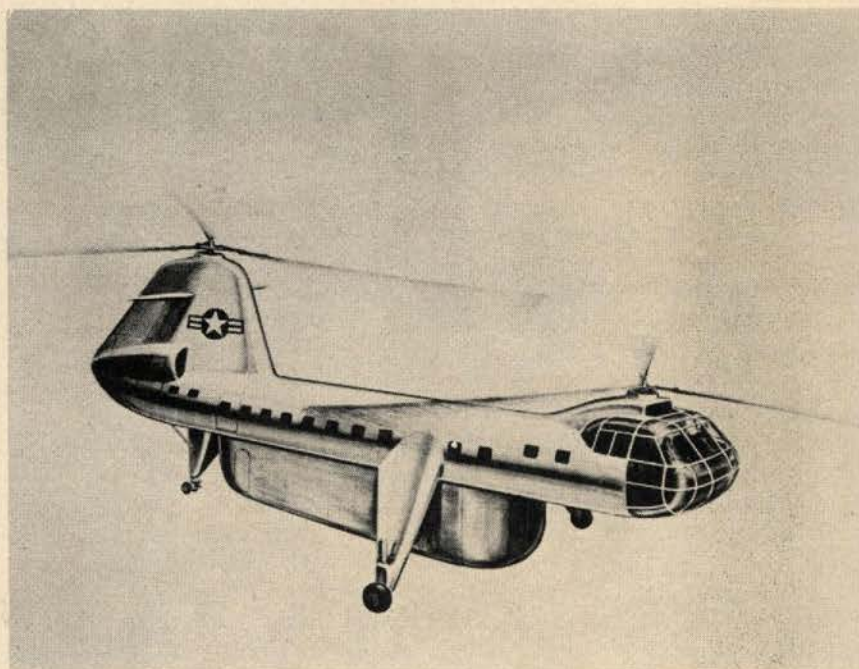
Are we now capable of keeping our vehicles rolling using current aerial delivery techniques? The answer is *no*; and of greater importance, we seem little concerned. Today, after the lessons of World War II and Korea, there is still no prescribed method for the delivery of gasoline from an airplane in flight. You may search our technical bulletins for the standard method of preparing Class III supplies for delivery by parachute, but you will find nothing. Quartermaster aerial supply companies faced with the problem of delivering fuel by parachute must rely on their own experience and ingenuity or refer to operations of their predecessors.

The parachuting of Class III supplies has been attempted repeatedly with dubious success. In Korea, the 8081st QM Airborne Air Supply and Packaging Company delivered large quantities of gasoline to combat units. First used was a twenty-four foot parachute attached to a fifty-five gallon drum, and breakage varied from twenty-five to seventy-five per cent. A better method employing two parachutes per drum was devised; but the use of two parachutes increased rigging time, decreased the usable payload of the airplane, and multiplied the cost of an already very expensive method of resupply. In Germany during *Operation Combine* in 1951, the 557th QM Aerial Supply Company delivered four and a half tons of gasoline to the 2d Battalion, 26th Infantry Regiment, when the battalion was cut off by aggressors. The 557th used twenty-four foot parachutes and fifty-five gallon drums, and results approximated those of the Korean drops. Back in the United

States, the 601st QM Aerial Supply Company during *Exercise Longhorn* in 1952 utilized a more dependable method in their delivery of fuel to units of the 1st Armored Division. The 601st dropped five gallon cans on standard six thousand pound capacity load bearing platforms with one hundred foot parachutes. A total of 22,500 gallons were delivered with comparatively little loss; *but* the weight penalty inherent in the use of platforms weighing 1,290 pounds,

the number of airplane loads required to furnish enough fuel to move an armored division one hundred miles.

Class III requirements of a modern armored division are approximately ninety per cent higher than during World War II, largely as a result of the standardization of heavier wheeled and tracked vehicles with automatic transmissions. Including the prescribed allowances for the warm-up of engines, movement in bivouac areas, limited reconnaissance, kitchen



The H16, the world's largest helicopter, can carry six tons for short ranges.

parachutes weighing 250 pounds, and conveyors weighing 50 pounds per section, in addition to the monetary costs of all these items, rendered this method too expensive. Each costly C82 airplane delivered only six hundred gallons of fuel per trip. Our past efforts at maintaining a pipeline in the sky have produced only an undependable trickle.

Though it is apparent that the logistical support by air of large armored formations is a necessity, we have never attempted either in training or combat to prove the feasibility of resupplying an entire armored division by parachute. In the absence of conclusions drawn from an actual exercise, let us theoretically calculate

requirements, wastage in the combat zone, and movement of supply vehicles, 350,500 gallons of eighty octane gasoline are required to move an armored division equipped with the latest tanks and armored infantry carriers one hundred miles. And this is under ideal conditions, for experience has already shown that the fuel consumption of the new M48 medium gun tank when operated cross country is five to six gallons per mile rather than the 3.10 gallons used in computing the optimistic figure stated. The supply platoons of tank battalions must receive their gasoline in five gallon drums for easy handling and rapid distribution, so we'll use the load bearing platform to deliver



our fuel. Subtracting the weight of two 6,000 pound capacity load bearing platforms, four cargo parachutes, and ten sections of conveyors from the maximum usable payload of the C119 airplane, 243 airplane loads are necessary to deliver only the gasoline consumed in a one hundred mile march.

The number of aircraft can be reduced by the use of aerial delivery containers and sixty-four foot para-

hibit the loading of airplanes to maximum rated capacities. Aircraft requirements grow still higher when we add loads to replace gasoline lost by breakage upon ground impact, for our cargo parachutes are far from foolproof. When fuel is delivered by parachute in the desired container, the number of aircraft required to keep the engines of only one armored division running is most certainly prohibitive.

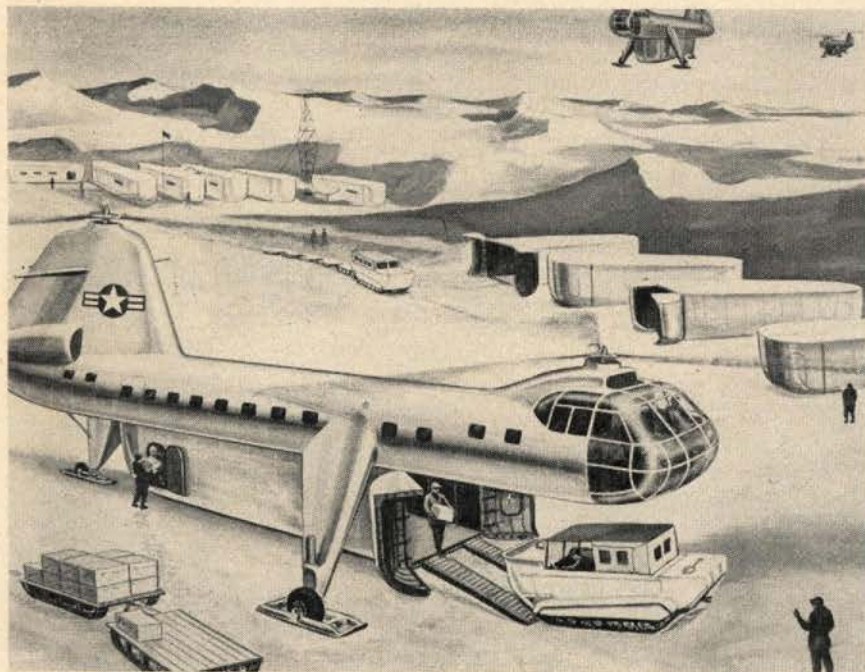
saturation of the air. No, the parachute is not the solution. In the words of Major General James Gavin in *Airborne Warfare*: "Parachute resupply is at best an emergency resupply means."

Why not employ the most effective aerial delivery technique and land airplanes at their destination, the method used to supply General Patton in France? Can any commander deep behind enemy lines definitely plan on being in control of a suitable landing field when he is vitally in need of fuel? At present there is no reliable, efficient method of delivering gasoline by the fixed-wing airplane.

A new type of aircraft has recently enjoyed much publicity because of its novel air transport capabilities. Perhaps the helicopter can provide the solution to our aerial delivery problems. By the use of slings, helicopters can easily manipulate palletized loads of five gallon drums; payloads will not be reduced by parachutes or aerial delivery platforms; losses resulting from breakage will be eliminated; fuel can be delivered directly into the beds of waiting trucks; and marginal weather will have less effect on logistical operations. Yes, the helicopter shows great promise.

But for these advantages there is a price. Mass production facilities must be constructed, hundreds of helicopter pilots must be trained, and helicopters themselves are very expensive. In operation, rotary-wing aircraft demand much maintenance and consume large quantities of fuel. And being highly vulnerable to ground fire, they require protected landing areas.

At their present stage of development, helicopters do not have the range or cargo capacity required to support deep penetrations. Delivering enough fuel in five gallon drums to move an armored division one hundred miles requires 1,711 loads using H19 helicopters if the division is within two hundred miles of the supply dump. With no cargo, the maximum radius of our most plentiful helicopter is only 230 miles. The H21 helicopter, of which we have a surprisingly limited number, is more satisfactory; for 870 H21's are required to fly the missions of 1,711 H19's. At a radius of 250 miles, 1,322 H21 loads are required



An artist's view of mass re-supply by the H16. We must control the landing field!

chutes. By dropping seven containers from each airplane, 220 C119's can accomplish our mission, but the increase in the number of parachutes enlarges parachute packing, rigging, and recovery problems.

Actually, the number of airplane loads required will be greatly increased when we step from the theoretical to the practical. Carrying a payload of 16,000 pounds at normal maximum take-off weight, the radius of the C119 airplane is only 432 miles under optimum conditions. Therefore the use of air terminals farther from the drop zone will reduce the airplane's load carrying capacity. In addition, troop carrier group commanders observe SOP's which pro-

hibit the loading of airplanes to maximum rated capacities. Aircraft requirements grow still higher when we add loads to replace gasoline lost by breakage upon ground impact, for our cargo parachutes are far from foolproof. When fuel is delivered by parachute in the desired container, the number of aircraft required to keep the engines of only one armored division running is most certainly prohibitive.



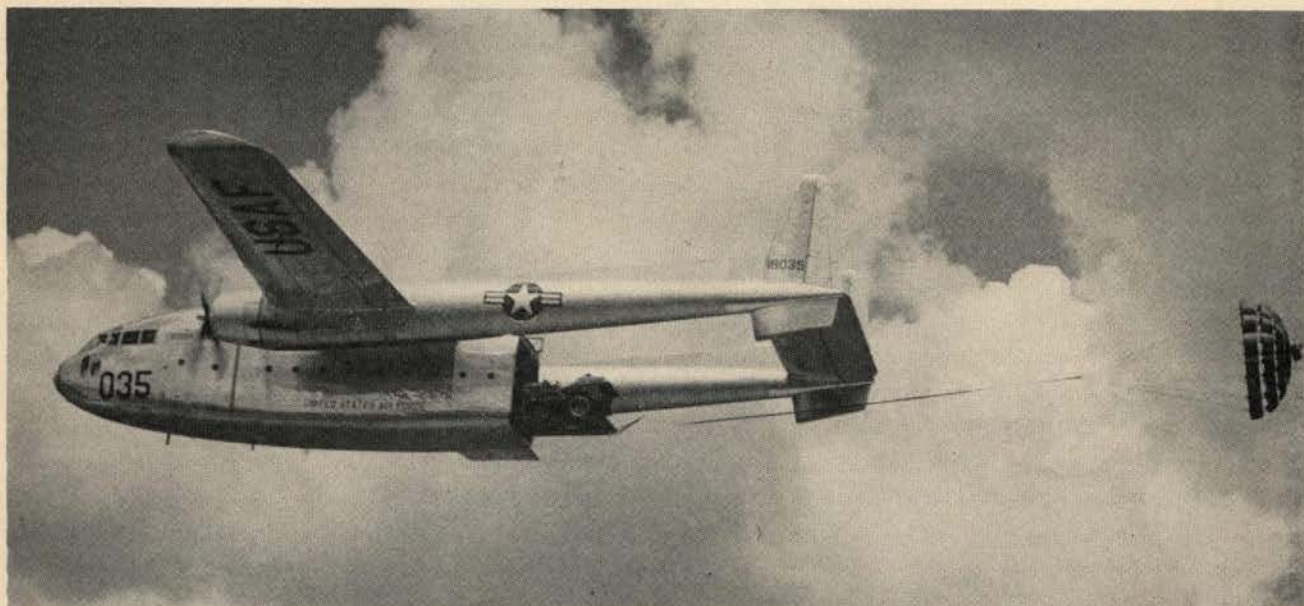
to deliver the fuel to resupply an armored division; and at its maximum radius of three hundred miles, the cargo capacity of the H21 drops to zero. The picture has brightened considerably, however, with the recent unveiling of the world's largest transport helicopter, the H16. Even with this monster, 265 loads are necessary to deliver at a radius of two hundred miles the fuel consumed by an armored division in a good day's exploitation. At three hundred miles from Class III supply points, 307 H16 loads would be required. This data is based on the assumption that the H16 will live up to the claims of its designers, for the aircraft has not yet been service tested. The number of

increased proportionately. The exclusion of parachutes decreases the personnel and time required for the preparation of loads, eliminates the problem of aerial saturation, and simplifies recovery problems. Free-fall delivery means more cargo in less time.

Gasoline is readily adaptable to delivery in a small free-fall container of such a size to facilitate rapid refueling, and attempts are being made to produce such a container. But the program lacks warranted emphasis, and progress is slow. Is it not obvious that we urgently require an inexpensive free-fall method for the delivery of gasoline? Certainly our progressive chemical industry can devise an eco-

in other phases of aerial resupply. Our schooling facilities for the training of aerial delivery personnel are limited. Our QM Aerial Supply Companies are too few. We must branch out from the concept of aerial supply primarily for airborne units and permit all combat arms to fully enjoy the advantages of improved logistical techniques.

Armor, a most potent combat arm, requires logistical support that can provide the large quantities of fuel consumed in lengthy exploitations. The only carrier with the speed, range, and flexibility to effectively supply fast moving columns is the cargo airplane. But parachute delivery is too costly, air landing is un-



The C119, our standard cargo airplane, drops heavy equipment and large quantities of supplies from its boxcar fuselage.

helicopters required to support logistically large scale operations forbids their use. Although the prospects are bright, helicopters are not yet the answer.

There is an additional method of aerial delivery, not as efficient as air landing supplies but much more effective than delivery by parachute. Free-fall delivery is a highly desirable technique when the item to be dropped is not fragile. This method eliminates the requirement for costly parachutes and heavy platforms, and usable payloads of cargo aircraft are

nomical plastic or synthetic rubber container which will solve our Class III resupply problem. Whereas the Air Force is responsible for the creation of general purpose aerial delivery containers, the development of special purpose and free-fall containers is a responsibility of the Army Quartermaster Corps.

We are not capitalizing on the advantages offered by the use of elevated lines of communications. Not only have we failed to develop an effective technique for the aerial delivery of fuel, but we lack foresight

dependable, and today's helicopter has neither sufficient cargo capacity nor range. We urgently require an efficient method for the aerial delivery of fuel, a pipeline in the sky; and the free-fall container appears to be a solution. If Armor's slashing attacks and lengthy exploitations are to be employed to maximum advantage, then Armor's speed and flexibility must be supported by the most rapid and flexible supply techniques. Though a Napoleonic army may have moved on its stomach, today's army moves on its fuel tanks.



by CAPTAIN C. R. McFADDEN

# TAKE ANOTHER LOOK!

**T**HE United States Army is no longer capable of decisive tactical action! The highly productive combination of science and technology has rendered ground armies obsolete as effective instruments of war! This has been the hue and cry of many provocative articles presented in our service journals since the spectacular advent of atomic science and technology in the military weapons field. Moreover, as the development of guided missiles increased, the future of ground combat units became even more dubious.

*At ease!*

All has not been lost to illogical whim. Fortunately, as technical research and development continued to explore and expand, academic attitudes maintained an equal pace. As

a result, some extremely stimulating arguments for the real need for ground tactical units have been submitted publicly by prominent military leaders. These personalities have been generally unanimous in their expression. They have concluded that we will have ground combat units capable of decision. Further, they have stated that these units, to be decisive under the conditions imposed by the employment of tactical atomic weapons, must be fully capable of instantaneous strategical air mobility, true tactical ground mobility with commensurate fire power, and complete independence of land lines of communications.

In discussing the tactics of these atomic warfare ground units, Brigadier General Paul A. Disney has stated that their operations may well be "... characterized by the almost continuous movement engendered by the requirement for rapidly alternating concentration and dispersion."<sup>1</sup> That these expressions are the essential characteristics of atomic warfare units there can be little doubt.

But take another look. Considerable importance has been attached,

and rightly so, to the organizational and operational requirements of the ground combat units of tomorrow. Yet, oddly enough, little mention has ever been made concerning the demands these requirements will make upon Army leadership.

Surely, as the weapons of war change, the techniques of their manipulation also change.

Remember the era of wooden mock-weapons, M3 Tanks, P39 and B17 Airplanes? Today, consider in review, the gigantic forward strides made by technology alone. Combine these with the fantastic progress of science. Now add the human element of management and you recognize the still current validity of a statement made in 1940 that "Technology and specialization make the arts of leadership even more complex than consideration of size alone would indicate."<sup>2</sup>

Reflection upon the events of the past and upon the conditions of the present and probable future indicates that we must change our techniques of leadership. The credibility of this statement gathers import by a thought expressed by General Eisenhower in

**CAPTAIN C. R. McFADDEN**, Armor, served in Europe during World War II as an Infantry Platoon Leader. Subsequent to the War he served in the States and as a Tank Company Commander in Korea. He is presently assigned as Senior Combat Arms Advisor in the Washington, D. C. Area on Reserve Component Duty. While in Washington, he has been instrumental in organizing a local Armor chapter for the exchange of ideas on mobile ground warfare.





Are executive and operating leadership mixed in an Armored commander? U.S. Army

his book, *Crusade in Europe*. In considering leadership, he stated "... One of the most important characteristics of the successful officer of today is his ability to continue changing his methods ... to keep abreast of the constant change that modern science ... brings to the battlefield."<sup>3</sup>

Since leadership is our professional function on the battlefield, serious consideration of three basic questions becomes appropriate. What will be required of Army leadership under the conditions suggested by the tactical employment of atomic weapons? Will these requirements alter the current forms of leadership at all levels? And, if they do, where will we receive the training necessary to prepare us for the application of these forms?

What will be required of Army leadership under the conditions suggested by the tactical employment of atomic weapons? The answer to this question lies in understanding just how the implied conditions will influence the tactical leadership of the Army.

Army leadership of the future will be affected by a functional chain reaction to the capabilities and limitations of science and technology. Beginning with the requirements of military objectives, we can trace the effects these conditions will have upon leadership. The requirements of military objectives influence the or-

ganizational design of units. That is to say, the organizations are formed so as to effectively accomplish specific missions. A point to remember here is that one should never form a boy-sized unit to accomplish a man-sized task. The next link in this chain reaction is the manipulation of the organization. If the unit is to accomplish its mission, it must be handled properly. Obviously the proper manipulation of an organization requires leadership. Similar logic dictates that Army leadership will be affected by the capabilities and limitations of atomic warfare weapons.

How will these conditions influence leadership? Consider the essential characteristics of atomic warfare armies mentioned earlier. Those organizational and operational qualities strongly suggest Army reliance upon smaller, completely integrated, highly mobile, tactical ground units to accomplish its objectives. Certainly *rapidly alternating concentration and dispersion* suggest tactical and strategical mobility. And certainly this mobility will require our units to be capable of rapid organizational flexibility if we are to fight with any degree of efficiency. In effect, then, as tactical leaders are organizational manipulators, it becomes apparent that we will be influenced by the connotations and impositions of mobility.

What then is mobility? To some, mobility is the slow, plodding pace of one and one-half miles per throat-parching hour. To others, it is the twenty-five miles an hour jostling rush over dust covered roads. Still, to others, it is the five miles a minute swoosh from field to drop zone. To a few, mobility is the fifteen to thirty miles per hour of a mechanized juggernaut rumbling over all types of terrain. It is obvious that under the conditions of today, mobility remains a term of many connotations. This thought gains considerable import when reviewed in the light of a statement made by a leader revered for his knowledge of mobility and military history. In writing on mobility, Brigadier General Paul M. Robinett has stated "The story of war is the record of an unending contest between the proponents of static and mobile concepts."<sup>4</sup>

Ordinarily these expressions would contribute to military society. But, under the conditions of tomorrow, do we still have the time now to maintain a professional attitude of indifference? The high probability of formidable competition from well organized partisan and guerrilla forces, in addition to that offered by atomic weapons, seems to demand that we become united immediately in our understanding of mobility. The conditions of tomorrow imply that we can no longer rely solely upon our present attitudes as dictum for our operational mobility and its necessary ally, organizational flexibility.

Rather, we must realize that there are two types of mobility, strategical and tactical. And that as leaders of ground force units, if we understand the latter and its primary importance, the former slips easily into place. By tactical mobility we mean the capability to conduct warfare almost perpetually (excluding human requirements) over all types of terrain, through any type of weather, under any type of scientific influence, through the medium of the tactical rapidity expressed by mechanized, completely integrated ground warfare units. This capacity to shoot while moving under any condition renders ground strategical mobility a simple matter—no shooting. Of course, Army-wide strategical mobility implies greater concern for logistics which we shall not discuss here.



Tomorrow, mobility will demand an Army physically and mentally capable of organizational plasticity and operational fluidity. This means we must be capable of spherul as well as lineal action. And further, we must know how to organize quickly for agile, flexible, and rapid decisive tactical movements. These capabilities can be provided and acquired by aggressive leadership. The organizations must be smaller, more flexible units which lend themselves readily to the decentralization of organization and control. And the leadership of these units must be mentally and physically capable of handling units under these conditions. Thus, under the conditions imposed by the tactical employment of atomic weapons, Army leadership will be required to decentralize its authority and responsibility. Inasmuch as that is a rather profound statement, and differs from our current trend toward centralized leadership, we must then consider our next question.

Will these requirements alter the current forms of leadership at all levels?

While it is recognized that military leadership is all things to all people, it remains that it is executed in two fundamental forms. These forms appear as the executive and the operative types of leadership. Or, if you prefer, strategic and tactical leadership. *Whichever you prefer, this is not to imply that either form is divorced from the other in execution.* Actually they complement one another in execution. Rather, it is to state that one form appears more frequently than the other in direct proportion to the echelon of execution or exercise.

This idea is best illustrated by explaining that executive leadership extends from "... the military leaders ... at the highest level, down through the division commander ..."<sup>5</sup> and that operative leadership "... usually extends from the squad or section to the regiment."<sup>6</sup> From this example we could say that the operative leader exercises a more personal and intimate leadership of the activities of small specialized groups. And more, we could say that executive leaders exercise a more remote leadership of the activities of large composite groups.

Devote a few moments to those

thoughts. Reflection reveals that executive military leaders deal with matters primarily pertaining to planning and organizing. The executive, either Brigade or Division Commander, of current operational necessity is required to concern himself mainly with the "who," "what," "where," "why," "how," and ... well, you fill in the rest of planning, and the "with what" of organizing. Moreover, this study indicates that operative leaders, company grade through field grade, must concern themselves primarily with the "on-the-spot," "face-to-face," "push-the-button," physical leadership of commanding and the fatiguing, never-ending discipline of controlling. Again, this is not to imply or to state that either echelon of leader does not exercise both major forms of leadership in the conduct of their assignments. Obviously, they must perform both executive and operative functions to succeed. But because this phase of leadership easily becomes such a volatile subject for argument, this is to emphasize that one leader remains primarily an executive, while the other remains primarily an operative. Thus, in terms of military leaders, the senior field grades through General ranks appear as executives, and the company through field grades appear as operatives.

Now in search of a solution to our second question. The authorities

and responsibilities of military leadership must change when mobility becomes the keynote of Army organizations and operations. From this perspective a transfer of executive activities to operative leaders at the tactical level is visualized. The very thought of fluid combat action supports this thesis. For successful, sustained, independent tactical action conducted by tactical commands, combat commands, brigades, task forces, regimental combat teams, or what have you, under *real*, mobile ground warfare conditions invites decentralization of the authorities and responsibilities of executive military functions. Even with the use of electronic devices as battle monitors, complete and adequate executive functioning seems almost inconceivable. Under the conditions of the probable future, the executive may be unavoidably too far removed from the scene of action to properly exert his operative influence on battle. Nevertheless, the influence of executive planning and organizing must remain constant in the operation of successful combat. We discover then, that the probable remoteness of tactical military executives and the vital importance of their activities to success in battle combine to cause the operative to accept greater executive authorities and responsibilities.

In the interest of tactical operative



U.S. Army

Have we measured tactical mobility spherically as well as on the ground?

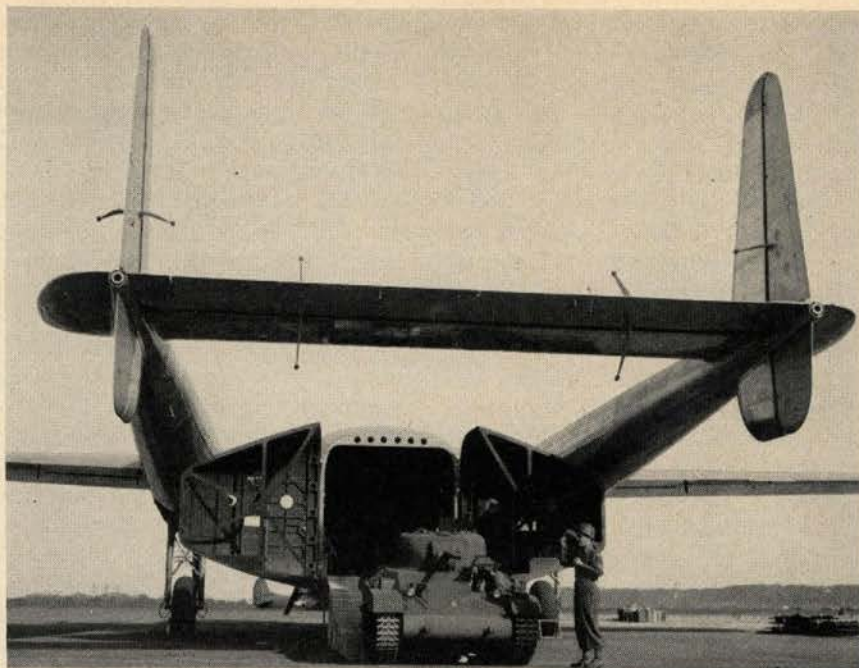


leaders, who may one day realize that executive knowledge and experience play an extremely important part in their role as leaders, brief discussion of executive activities seems proper. In reiteration, emphasis is placed on the point that executive activities consume but a representative portion of leadership. You remember that executive military leadership activities primarily embrace planning and organizing. Planning then remains a perpetual motion function, which includes the analysis, hypothesis, synthesis, and forecasting of the operations, conditions, and events of Army units. Further, we discover that knowledge and experience of organizations—and organizing—is extremely important to military executives. For, who could possibly plan an operation without complete knowledge of the capabilities and limitations of the various arms and services to be employed? In addition, the executive must know the operational value of organizational structures; or, who does what and reports to whom, at what time, and with what information?

In view of the requirements demanded of Army ground units by the impositions of nuclear and guided-missile weapons, we found that the authorities and responsibilities of Army leadership would be decentralized. And, since our tendency today is toward centralized leadership, we found that this practice would require modification in preparation for tomorrow's operations. Thus, we launched the query concerning the leadership forms to be altered. This examination disclosed that operative leaders must accept greater executive responsibilities. The vitality of this knowledge and its importance to the future success of ground combat operations dictate the absolute necessity of the proper preparation now of our leaders of tomorrow, the senior NCO's and the company officers of today.

This thought leads us to our third question: Where will we receive the training necessary to prepare us for the proper application of the leadership forms found necessary to the successful conduct of ground warfare under the conditions of tomorrow?

Normally, your first thought is the offerings of our excellent Service schools. However, as many of our leaders through all levels do not at-



Is our Armor equipped to change rapidly from strategic to tactical mobility? USAF

*At all levels of command, on or off the battlefield, leadership is our most important function. Do new weapons and concepts alter our present methods? This should be a continuing challenge to all Armor leaders.*



What limitations, if any, will tactical atomic weapons place on mobility? U.S. Army



tend those schools from which they might gain the required knowledge, it would seem proper to eliminate this consideration now. It would, however, seem proper to consider the training and experience to be gained from assignment to troop units. Thus, as leaders of ground force units we have three general choices of troop duty from which to select an opportunity to gain the training and experience discovered to become a requirement for the future. We can expect this training and experience to be found in Airborne, Armored, and Infantry units. Now the question becomes: Do all three offer the

bility in the grand concept because of current weight restrictions. They do, however, offer complete organizational flexibility and tactical mobility and the real capacity to operate without being tied to land lines of communications. Infantry units offer tactical mobility, but it is tactical mobility limited by our endurance capacities as humans. And the organizational flexibility of these units is limited to the old triangular concept whether it be regimental or battalion combat teams. Where then, do we find training and experience offering all aspects of mobility, flexibility, and the capacity for complete tactical

Where else can you experience the sheer satisfaction of leading units of Infantry, Tanks, Artillery, Engineers, Ordnance, MP's and Medics and all the others, ranging in size from Teams through Task Forces and Combat Commands? Where else can you experience the mental thrill of organizing these elements into one unit designed to secure your objective with a minimum of delay? Where else can you experience the feeling of developing an attitude of mobile-mindedness? Where else can you experience the knowledge of the capabilities and limitations of all types of Army units? Where else can you experience the knowledge at first hand of flexible organization, complete tactical mobility and the soon-to-be unlimited strategical mobility? Where else can you experience the exhilaration of knowing that you are being trained to handle any and all types of situations to be expected in battle? Where? Duty in an Armored unit.

As present or potential leaders of ground force units, it is important now that we take another look at the requirements to be made of Army leadership under the impositions of the tactical employment of nuclear and guided-missile weapons. The authorities and responsibilities of Army leadership can become decentralized to the extent that tactical leaders can operate effectively under the implied conditions of the future. Greater executive activities can be assumed by operative leaders. And embryonic leaders can be trained in this attitude of organizational flexibility, tactical and strategical mobility, and the adroit manipulation of completely integrated tactical units designed to fight spherul as well as lineal battles under all conditions. Solutions to these requirements are offered today by the training and experience provided by Armored units.

Yes, take another look. Take a long look. Take a look at Armor, the mechanized integration of all the arms and services, dedicated to decisive combat leadership.



U.S. Army

To assemble or disperse rapidly, do we need full-tracked, mobile, tactical units?

training and experience necessary to fulfill the requirements of mobility and its ally, organizational flexibility?

While training and experience found in an Airborne unit offers the realization of strategical mobility, its capacity for real tactical mobility is quite dubious. It still fights on foot and offers only limited organizational flexibility. Armored units, it is true, offer slightly limited strategical mo-

integration? Take a look at today's Armored units.

Today's Armored units, with the exception of those separate battalions organic to Infantry units, offer *now*, the training and experience necessary to train our leaders for tomorrow. Armored units offer today training and experience in the mobile manipulation of flexible units of all branches of the arms and services.

<sup>1</sup>Disney, Paul A., Brig. Gen., USA, "Armor in Atomic Warfare," *ARMOR*, LXIII (May-June, 1954), 31.

<sup>2</sup>Barnard, Chester I., *The Nature of Leadership* (New Jersey, 1940).

<sup>3</sup>Eisenhower, Dwight D., *Crusade in Europe* (New York, 1948), 74.

<sup>4</sup>Robinett, Paul M., Brig. Gen., USA, Retd., "Ground Force Mobility," *ARMOR*, LXII (March-April 1953), 6.

<sup>5</sup>Beishline, *Military Management for National Defense* (New York, 1950), 219.

<sup>6</sup>Beishline, *op. cit.*, 216.



# THE COMMUNIST

## CAPTURE OF

## HAINAN ISLAND

CARDED

by LIEUTENANT BENSON LEE GRAYSON

**T**HE Chinese Communist artillery bombardment of Quemoy island has caused speculation that the Communists are preparing for an assault against the Nationalist stronghold of Formosa. In the West, military leaders are studying the actions of the Chinese Government to determine whether the Communists are bluffing, or whether they seriously intend to attack Formosa and perhaps precipitate World War III. When faced with a similar situation in 1950, Communist China embarked on a highly successful campaign which resulted in the Communist seizure of Hainan island. Thus, a study of the tactics employed in the invasion of Hainan may suggest the probable course of Communist operations against Formosa.

Hainan island is in the South China Sea, about fifteen miles off the Chinese mainland. The area of Hainan is slightly less than that of Formosa, and the population of three million is concentrated along the coast. Very rich iron deposits are found in the interior of the island; during the Second World War, the Japanese secured more iron ore from Hainan than they did from Manchuria. The climate is semi-tropical, and the typhoon season, which extends from July to November, limits any amphibious operations to the Spring of the year.

In December, 1949, Chiang Kai-shek's defeated armies were forced to evacuate the Chinese mainland and

retreat to Formosa. At the same time, several of the Nationalist armies were cut off in South China and, unable to reach Formosa, 160,000 troops sought refuge on the island of Hainan. Unlike Formosa, Hainan did not prove to be a secure haven for the Nationalists. Communist agitators had already reached Hainan, and upon their arrival, the Nationalists found 30,000 Communist-led guerrillas operating in the wild interior. Throughout the Spring of 1950, the Nationalists made sporadic attempts to eliminate the guerrillas, but their troops were disorganized after continued defeats in the Civil War, and the Communists took advantage of the wild terrain in the interior to escape from their pursuers.

The Nationalist defense of Hainan was further imperiled by dissension among the high command. General Hsueh Yueh, Commander of all forces on Hainan, was unable to obtain the cooperation of his subordinates. Several of them intrigued to accomplish his removal, while others negotiated with authorities at Saigon, Indochina, to secure the promise of refuge in the event of a Communist victory. Nationalist units in South Hainan frequently refused to obey orders of General Hsueh Yueh, who had his headquarters in the north of the island. This collapse of discipline, combined with an attitude of general despair, explains the failure of the Nationalists to successfully defend Hainan.

In April of 1950, the Chinese Communists began a campaign of propaganda warfare against Hainan's garrison, to undermine their will to resist. Promises of land reform for

the island's population were coupled with assurances of amnesty to all Nationalist soldiers. Radio Peiping made no effort to conceal the preparations that were being made for the invasion of Hainan, but instead, emphasized them and suggested that the defenders of Hainan would be left to their fate without any assistance from the Nationalist forces on Formosa.

On April 11th, Peiping announced that a conference of high ranking Communist military leaders had decided to conquer Hainan before the Fall of 1950. General Lin Piao, who was later to command the Chinese Communist forces in the Korean War, concentrated his Fourth Field Army on the Luichow Peninsula opposite Hainan. Over a quarter of a million men from the 40th, 43rd, 44th, 47th and 48th Armies were deployed by the Communists for use in the assault against Hainan. Hundreds of junks were gathered, to carry the invasion force to the island.

On the fourteenth of April, Communist Reconnaissance troops landed on Hainan. Although suffering heavy losses, they were able to capture prisoners and observe the island's defenses, before returning to the mainland. Realizing that an invasion was imminent, the garrison of Hainan readied their defenses. Units engaged in operations against the guerrillas were ordered by General Hsueh Yueh to return to the coast and oppose the invasion attempt. Nationalist headquarters were transferred from Hoihow, opposite the mainland, to the far side of the island.

The long-expected Communist invasion of Hainan began on April

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18th. Under cover of a heavy fog, the first waves of Communist troops landed on the island. The Nationalist Navy attempted to intercept the junks transporting the Communist troops to Hainan, but long range Communist artillery from the Luchow Peninsula forced the Nationalists to withdraw. The Nationalists discovered that it was impossible to stop the Communist junks; because of their wooden composition they could be sunk only by direct hits. Nevertheless, shorefire from Hainan's defenders killed over 10,000 Communists before they could land on the island.

General Yeh Chien Ying, in immediate command of the Communist invasion force, ordered his troops to continue despite their heavy losses. Almost 15,000 troops survived the Nationalist fire and landed on Hainan on the first day, establishing two Communist beachheads after bloody fighting. The limited number of junks available to the Communists, however, made it difficult for them to transport reinforcements to Hainan. Considering that the Nationalists had 160,000 troops on the island, it seemed probable that they would overwhelm the beachheads before the Communists could bring over additional troops from the mainland.

There were, however, several important factors which prevented a Nationalist victory. Their troops had little heavy equipment, and suffered from a shortage of ammunition. The Nationalist leaders were divided, and many of the units in South Hainan made no effort to move to the aid of their compatriots fighting in the north, despite the frantic appeals of General Hsueh Yueh. The Communists, moreover, had available reinforcements on Hainan. The guerrilla bands succeeded in reaching the coast and making contact with the beachheads. Two days after the initial landings, the Communist forces were strong enough to break out of the beachheads and advance upon the Hainan capital of Hoihow.

The Nationalists were still confident that they could repulse any attack upon Hoihow, and would ultimately drive the invaders from the island. On April 22nd, Nationalist headquarters jubilantly announced that 4,000 Communist soldiers had deserted to the Nationalist forces de-

fending the capital. The population of Hoihow prepared a victory celebration for the night of the 22nd, and it appeared that the Communist invasion had failed.

The defenders of Hainan could not have been more wrong. While the citizens of Hoihow celebrated, shooting was heard in the outskirts of the capital. Surprised Nationalist commanders were informed that Communist forces had penetrated to within a few miles of the city. Soon it became clear that the supposed desertion had in fact been a ruse to permit a picked Communist force to pierce the defenses guarding Hoihow.

Chinese Communist troops entered the capital of Hainan early in the morning of the 23rd of April. The Nationalist leaders fled by airplane to Formosa, while their defeated forces attempted to withdraw to South Hainan, only to be ambushed by Communist guerrillas. As all Nationalist resistance on the island collapsed, Chiang Kai-shek ordered the evacuation of Hainan. There was not sufficient transportation available, however, to evacuate the entire Nationalist force to Formosa. As a result, although some 60,000 soldiers were transported to Formosa, the bulk of the Nationalist garrison of Hainan surrendered to the Communist invaders. By May 2d, all Nationalist resistance on Hainan was over.

The Communist capture of Hainan was important in many respects. The conquest of Hainan left Formosa as the only refuge of the Chinese Nationalists. Chiang Kai-shek's forces were greatly weakened; 100,000 Nationalist troops had been lost to an invading army which never amounted to more than 50,000 men. It is quite probable that if Hainan had not fallen, the Chinese Communists would not have felt free to intervene in the Korean War. Strategically Communist possession of Hainan led to domination of the Gulf of Tonkin, and facilitated Chinese Communist intervention in the Indochina war.

The failure of the Nationalists to successfully defend Hainan can be attributed to several factors. Nationalist leadership was divided, and many of the commanders refused to follow the orders of General Hsueh Yueh. Their troops were dispirited by continued defeats in the Civil War, and suffered from a shortage of arms and

matériel. The Nationalists, moreover, were disliked by a major portion of the island's population, and actively opposed by Communist guerrillas operating in the interior.

Even had these conditions been different, a sustained Nationalist defense of Hainan would have been seriously handicapped by the island's geographic determinants. Hainan is only fifteen miles from the Chinese mainland, much more vulnerable to an amphibious assault than is Formosa, which is eighty miles from the China coast. Furthermore, Hainan is not self-sufficient in food production and would have required extensive logistic support from Formosa. These factors were influential in Chiang Kai-shek's decision to concentrate his forces for the defense of Formosa, and resulted in the rapid evacuation of Hainan following the initial Nationalist defeats.

Today, the Chinese Communist Government is employing in the preparations for an invasion of Formosa, the same tactics which proved successful in the capture of Hainan. Radio Peiping warns of the imminent invasion of Formosa, and promises to liberate the island's population. Troop concentrations are reported opposite Formosa, and Communist junks gather along the South China coast. Communist raiders have landed on Quemoy island, guarding the approaches to Formosa, as they landed on Hainan four days before the main assault. From the actions of the Chinese Communists, it seems certain that an invasion of Formosa is to be attempted.

The Nationalist defenses of Formosa, however, are infinitely better than were those of Hainan. The garrison has been trained and re-equipped by an American military mission. Discipline has been restored, and a unified command of the island's defenses established. Moreover, a liberal administration and recent land reforms have won the cooperation of the population of Formosa. Should Communist troops succeed in establishing a beachhead, no guerrillas would appear to reinforce the invading force.

One conclusion is evident from a study of the Communist capture of Hainan; the Chinese Nationalists have shown a quality necessary for any victorious army, the ability to profit by their mistakes.



**T**HE fact that nations other than the United States have the capability to employ atomic and thermonuclear weapons tactically presages the development of a style of tactics quite different from those employed in the past. Just how and in what form these tactics will develop has been treated at length by many men of authority; however, two basic premises always emerge, namely, *mobility* and *dispersion* are the keystones of success in atomic warfare. General Gavin envisions a new style of cavalry, airborne rather than horseborne, which will conduct deep forays, reconnaissance screens, and will enable friendly forces to concentrate quickly at critical points to "finish" the enemy and just as quickly disperse again into non-lucrative atomic targets.

Although atomic weapons are not being employed in warfare at the present time, the enemy has the capability to employ atomic weapons *now*; and a surprise mass atomic attack followed by armored exploitation could prove disastrous to friendly forces concentrated for "conventional" warfare on a long front a few miles deep. To remove such a temptation from the enemy the "new" tactics can be adapted for use with our present conventional weapons. In fact, such tactics actually offer to a small defensive force which is highly mobile, the possibility of defeating a larger aggressor force in detail. This offers unique possibilities to United States Forces who in the initial stages of the conflict are invariably forced to defend against numerically superior aggressor forces. Of course, the defenders, when inferior numerically, must be superior in other departments with special emphasis on:

1. Mobility.
2. Communications.
3. Production of accurate and timely combat intelligence.

Mobility is necessary to enable rapid concentration of the forces which have been widely dispersed as a defense against atomic attack. However, if communications and the production of accurate combat intelli-

# A New Deal For Division Reconnaissance

CARDED

by CAPTAIN HOWARD J. DAGER, JR.



U.S. Air Force

Information received from the Joint Operations Center is no longer news.

gence break down the mobility is of little use.

For the remainder of this article, let's make a brief analysis of one phase in the production of combat intelligence—namely, the gathering of information.

As dispersion is increased, front lines will disappear and independent battalion and regimental actions will assume greater importance. Divisions may be scattered over hundreds of square miles; and with the increase in mobility, the tempo of action will mount until the "fog of battle" will become overwhelming unless there is a constant flow of timely and accurate information on the enemy. For a division, the agencies which will be responsible for gathering the biggest share of combat information about the enemy will be the intelligence and reconnaissance (I&R) platoons and the reconnaissance company. Of course, the Air Force will be furnishing information through G2 Air in the Joint Operations Center, and oth-

er high level agencies will also be busy gathering information; however, by the time this information is evaluated at higher headquarters and the intelligence filters down to the division or regimental commander it is no longer "news" and is of little immediate use to him if the enemy is also highly mobile and already moving to attack. To provide him with the up-to-the-minute information that he needs to give him the advantage over the enemy, the division commander must rely on the reconnaissance agencies available to him, i.e., the reconnaissance company and the I&R platoons. But can these outfits do the job? As they are presently organized, the answer is "No!"

Our reconnaissance companies and I&R platoons are, at present, not only tied to the ground but also tied to a road net for all practical purposes. In addition, the reconnaissance elements with their present vehicles cannot move much faster than the infantry regiments which will be

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traveling at least part way if not all the way by trucks, armored personnel carriers, or other vehicles. These limitations prevent the reconnaissance elements from conducting far-ranging reconnaissance and reporting back information on enemy forces in time to allow the commander to adjust the movements of his forces so as to give maximum advantage over the enemy when the battle is joined. It also makes the location of profitable

of the enemy in time to permit the commander to secure maximum advantage.

2. The reconnaissance elements must not be road bound but must be able to negotiate rugged terrain at a fairly rapid pace in order to satisfy the above criteria.

One possible solution that comes to mind immediately is, "Army aircraft." Why not assign Army fixed-wing aircraft and helicopters to I&R

mation can then be relayed to the main forces by the helicopter.

A secondary use of these aircraft is radiological monitoring. Rapid aerial surveys to determine the extent of radioactive contamination should be performed immediately after atomic bursts. Of course, an extensive survey after a high air burst is not necessary as the radioactive fall out will probably be nil; however, in many cases, it will not be known whether the burst was air or surface. Lingering radioactive contamination from a surface or subsurface burst is considerable. In such surveys, speed is essential due to the large areas affected, the rapid decay of the radioactive contamination, and the fact that early enemy or friendly exploitation can be expected. The Commanding General will need evaluated information quickly in order to make timely and intelligent decisions as to the necessity to evacuate units or to revise operational plans. Army aircraft assigned to reconnaissance units and operating under centralized control offer a possible solution to this problem.

It is visualized that radiological monitors flying in army aircraft will send information on the radioactive hazards to a central point by radio where it can be correlated and evaluated for early presentation to the CG. The monitor will be equipped with a radiac survey meter and will report meter reading, time, altitude (above ground level if possible), and position (grid coordinates) by radio. Many times the CG will have to base decisions on initial fragmentary information; hence, immediately after atomic bursts, aircraft manned by the pilot and a monitor will be dispatched to get initial readings at critical terrain points. Aircraft will then be directed so readings provide a grid of the contaminated area. Readings are corrected to one time (usually H + 1 hours), corrected for altitude, and then plotted on the G2/G3 map at headquarters. Isointensity lines can then be drawn by extrapolating between points.

All of the foregoing suggestions are only intended as an immediate stop-gap measure. As the airborne cavalry develops as envisioned by General Gavin, the mobility of large combat units will increase; therefore, the



U. S. Army

Reconnaissance elements of the Division should have their own organic aircraft.

atomic targets far more difficult.

A far-ranging reconnaissance also acts as a screen to partially shield our movements from the enemy. It will be difficult for the enemy to use atomic weapons against our forces while we are widely dispersed and concealed, while we are moving, or after the opposing forces are joined closely in battle. However, if our reconnaissance system breaks down and our forces after being set into motion come to a halt, before "finding, fixing and finishing" the enemy, we are likely to present a tempting atomic target to an enemy who knows more about us than we know about him.

Two criteria for improved reconnaissance can then be stated as follows:

1. There should be a greater speed differential between the reconnaissance elements and the main body. The reconnaissance units should be able to range far from the main forces and be able to report back information

platoons and reconnaissance companies? The Germans in World War II assigned aircraft to reconnaissance battalions in their Panzer divisions and put them to good use. The aircraft meet both criteria. They have the necessary speed differential and they are not road bound.

For instance, H19 helicopters could be employed to take small patrols far forward and deposit them in a spot somewhere in the vicinity of the enemy. This may occur under cover of darkness. The patrol moves forward to contact the enemy, to take a prisoner, or to gain other information as required. The patrol then retires to a predetermined position where it is picked up by the helicopter and returned to the parent reconnaissance unit. Contact between the patrol and the helicopter can be maintained by radio, as the helicopter has the advantage of altitude which will facilitate reception from the high frequency FM transmitters which are quite directional. Infor-



reconnaissance units will need faster aircraft in order to provide the necessary speed differential between the main forces and the reconnaissance elements. Also, it would be rather wasteful of matériel and personnel to fly over heavily defended enemy territory in slow planes and helicopters. Hence, a long range program will require that reconnaissance units be issued faster aircraft and such vehicles as pilotless aircraft.

One possibility is the assignment of the best and fastest jet aircraft to reconnaissance elements. The new turboprop aircraft which can take off and land vertically and therefore can operate from small concealed areas, roads, etc., would be ideal. These aircraft can perform visual and photo reconnaissance and can also assist in maintaining an aerial reconnaissance screen to prevent enemy observation of our forces. Another possibility is the use of pulse jet or ramjet pilotless aircraft just big enough to carry control equipment and cameras for photo reconnaissance or radiac equipment for radiological surveys as the case may be. These jets will be approximately as big as the present Radio Controlled Aerial Targets (RCAT) and may be somewhat alike in appearance except that the reciprocating engine of the RCAT will be replaced by one or two small jet engines and a solid fuel rocket for an assist in take-off. They will be launched by the reconnaissance units to fly a predetermined pattern which will be controlled by preset times adjusted to return the craft to the launching site or some other predetermined site if the enemy is actively trying to seek out and destroy the launching site. The radius of action will be approximately 100 miles. At a preset time (over the final destination), a parachute will be ejected which will allow the craft to descend gently so that it may be re-used. The flight pattern controlled by timing mechanisms will permit a decrease in costly electronic gear and will prevent enemy jamming which might occur with a radio guidance system. The jets can depend on speed, small size, and altitude to escape destruction while flying over enemy formations. Upon return to the unit films can be quickly processed in AN/TFQ-7 mobile lab-

oratory darkrooms or some similar setup and then carried immediately to G2. Television might also be installed in these pilotless aircraft for even more rapid transmittal of information direct from the reconnaissance vehicle to the G2 or S2 section. The television screen in the G2 tent can be photographed for a permanent record to permit closer scrutiny at a later time.

The initial stages in modernization of the reconnaissance units will merely require replacement of *some* of the vehicles presently authorized with Army fixed-wing aircraft and helicopters. No increase in personnel will be necessary. Radiac equipment will also be added to the TO&E to enable accomplishment of the radiological monitoring mission. Maintenance beyond the capabilities of the pilot and other necessary logistical support for the aircraft would be rendered by the division air section, but the planes would be assigned to the reconnaissance units and they would be manned by pilots and observers from the I&R platoons and reconnaissance company. And, insofar as possible, the planes would use fields near the parent unit. If the units do not have operational control of the aircraft and instead have to go through piles of red tape, twenty or so switchboards, and argue with a platoon of obstructionists in order to get a division plane to fly one reconnaissance mission, they might as well perform their reconnaissance on bicycles—it will be faster. Reconnaissance is a 24 hour-per-day job and the responsible units should be able to keep several aircraft busy *around the clock*. When the outfits' aircraft are not available due to maintenance deadlines, etc., and presuming that the Division Air Section has no spare planes to lend, the pilot and observer who are assigned to the reconnaissance outfit can perform other duties such as ground reconnaissance. If they were assigned to an aviation company these man-hours would likely be lost until a plane again became available. Based on experience gained in Korea, it has been argued by many individuals that pooling all division aircraft into an aviation company would lead to a more efficient organization. This may have been true during the last year and a half of the

Korean War; but during that period we were about as non-mobile as we could get and then there was no enemy air operating behind the MLR. Consequently, in such a situation, an aviation company with all the division planes lined up neatly alongside the division air strip would be more efficient. When the division is dispersed over several hundred square miles, the shortcomings of pooling all division aircraft become obvious and an aviation company would be operationally unworkable.

As the modernized reconnaissance units prove their merit in special tests and field exercises, it is envisioned that they will be bolstered with additional personnel—perhaps to battalion strength for the reconnaissance company and to company strength for the I&R platoon. There should be few objections to using manpower for such increases, as it is certain that such combat units will “finish” more than their fair share of the enemy. And as large units become more dispersed the Corps and Army commanders will want large reconnaissance units at their immediate disposal. So the airborne cavalry (or reconnaissance) brigades and divisions will come into being. These units will be able to range deep into enemy territory to destroy supplies and isolated enemy groups (the enemy will be dispersed as a defense against our atomic weapons), to perform reconnaissance and the other normal cavalry tasks.

Perhaps future reconnaissance will not develop in the fashion as envisioned above, but we can be certain that reconnaissance methods will change. Modern, practical ideas, boldly and efficiently executed, can provide tremendous tactical advantages. For example, the introduction of Blitzkrieg tactics employing armor in mass gave the Germans many victories over numerically superior foes in the initial stages of World War II. It is hoped that we are intelligent enough to adopt and vigorously develop new ideas before the next general war.

It is in this light that the foregoing thoughts have been presented, together with the hope that they will stimulate further thinking by the readers on this problem which, it is felt, deserves immediate attention.



# Sum & Substance

A regular feature in **ARMOR**, where you may express your views in approximately 500 choice words—the effective medium between the letter and the article. This section is open to all on any subject within the bounds of propriety. Name and address must accompany all submissions. Name will be withheld upon request. No pseudonyms.

During the past several months we have seen the number of Armored Divisions allotted to the National Guard double in number. The 40th Armored Division, California National Guard, was converted to the mobile arm in June of this year. During this past October, the 30th Armored Division, Tennessee National Guard, joined the team. In view of this increased emphasis on mobility **ARMOR** turned to the 50th Armored Division, New Jersey National Guard, to supply answers to some questions concerning Field Training of a National Guard Armored Division.—ED.

The writer of the following article enlisted in the New Jersey National Guard in 1916. During his career he has been in Federal service three times, serving with the 5th New Jersey Infantry on the Mexican Border in 1916, with the 114th Infantry, 29th Division in Europe in World War I and in the ETO in World War II. He commanded the 102nd Mechanized Cavalry Regiment during the Normandy Invasion. At the end of World War I, he was appointed to the U.S. Military Academy. He was commissioned a second lieutenant in the New Jersey National Guard in 1922. With the reorganization of the New Jersey National Guard following World War II, he was assigned as commander of CCB, 50th Armored Division and assumed command of the Division in November, 1948. He is a graduate of the Infantry and Field Artillery Schools and the Command and General Staff College.

The key training missions for 1954 were then made known to the commanders of the combat commands specifically charged with special training projects. The plan adopted for the 1954 field training assigned tank gunnery and tank tactics to one Com-



U. S. Army  
Maj. Gen. Donald W. McGowan

## Field Training of a National Guard Armored Division

The most potent enemy in training a National Guard division is the apparent and very real shortage of time to accomplish the training mission.

The only effective weapon to overcome the lack of training time is advance planning at every level, from division to company. Training is partially centralized in the 50th Armored Division to improve the quality.

The general training plan for the 1954 field training of the 50th Armored Division was fixed upon before the 1953 field training period ended.

bat Command. Each combat command was charged with its own reinforced platoon training.

Early in the Fall, the first training conference was held at Division Headquarters attended by major commanders and their S3's.

The 1954 training plan of the Division Artillery Commander evolved from progressively advanced tactical training, based on battery and battalions RSOP's of previous field training periods. This included a night movement into firing positions from a concealed assembly area under assumed tactical conditions, a high-burst registration, and adjustment on a base point with the assistance of illuminat-

ing shell. A later forward displacement at daylight was ordered, as the assumed attack progressed.

The 50th Armored Division aims to be entirely self-sufficient, and depends on the post of Camp Drum only for supply of rations, fuel and ammunition, and for medical evacuation. We are especially proud of our own Ordnance, Quartermaster, and Medical support from the Division Trains.

Camp Drum lies 350 miles to the north of New Jersey. Division convoys must move through the most congested traffic areas in the country, and traverse the dense week end resort traffic of northern New Jersey and southeastern New York State. Without some special solution, convoys would arrive at Camp Drum Sunday evening, and it would be almost impossible to satisfactorily launch full-scale training on Monday morning.

Consequently, all units assemble at home armories Friday evening in a drill status. Train movements commence at midnight, and they arrive at Camp Drum by noon or early afternoon on Saturday. Five motor convoys move from two to four hours on Friday evening to bivouacs north of the congested metropolitan area of the state. They arrive at Camp Drum early on Sunday afternoon.

As a consequence, the tanks, half-tracks, armored personnel carriers, armored artillery pieces, antiaircraft material and heavy engineer equipment are drawn from concentration pools at Camp Drum and are completely readied for use on Sunday, by personnel arriving by train the day before. The battalion charged with con-



ducting division tank-gunnery training is enabled on Sunday to move its tanks into position on the range, and the whole gunnery set-up is ready by Sunday afternoon to go into action at drill call on Monday.

Camp Drum, New York, where all National Guard units of First Army train, other than AAA Gun battalions, affords splendid terrain with realistic distances separating Combat Commands from the Division Forward CP. The Division Supply Control Point functions on the Main Supply Route, with Division Trains in a nearby field set-up to provide realistic logistical support, as prescribed in Armored School doctrine.

Division Rear remains set up in permanent buildings, and operates the Division Administrative Center during the entire period.

MAJ. GEN. D. W. MCGOWAN

*The writer of the following article has been in the military service since 1929 when he enlisted as a private in the 113th Infantry Regiment, New Jersey National Guard. He was commissioned a second lieutenant in 1932. He served in various command and staff positions in the 44th Division when it was a New Jersey-New York National Guard Division. He entered Federal service with the Division in September, 1940, and continued to serve with the Division as assistant operations officer, operations officer and regimental commander until his assignment in February, 1944, as Chief of Staff of the 97th Division. With that Division he served in the ETO and on occupation duty in Japan. He was assigned as Chief of Staff, 50th Armored Division, upon its activation in 1946. He later was given command of CCB and on 1 January 1951 was appointed assistant Division Commander.*

### Field Training Objectives

Each year's training objectives should be attained upon completion of the annual field training period in the summer. It is therefore necessary that such objectives be established before the commencement of the armory training period in the fall.

Combat Commands are made responsible by division for the conduct of special training of the division such as "tank gunnery" or "reinforced platoon training" during the field training period. They are notified during, or immediately after field training, so that the training details of lesson plans, training aids and instructors may be prepared during the coming armory training period.

About the middle of the armory training year conferences are held with subordinate commanders to iron out any details pertaining to field training assignments.

30 to 60 days prior to camp, a one-week "Training School" is held "on the ground" at the division field training site at Camp Drum, during which time final details pertaining to training missions are completed. Exercises prepared during the armory training period are then "fitted to the ground." This period we regard as the most remunerative in training returns.

Two general training programs will be conducted during future field training periods, one for the individ-



Brig. Gen. Edward O. Wolf  
U. S. Army

uals and the other for the units.

Men enlisted since the last camp will receive intensive individual basic and branch instruction. This program includes one week of basic combat training and one week of advanced individual training of the appropriate branch, and is designed to develop basic tankers, infantrymen or artillerymen, etc.

Companies, less their individual trainees, will receive basic unit training, to include platoon exercises and service practice. Headquarters units

will participate in CPXs and "on the job" training.

Efforts are made to integrate the training of the arms and services with other training whenever possible. Examples are the crossing of our engineer-constructed fixed or floating bridges by marching units, and the firing of artillery during their service practice over the heads of infantry and tank units, while the latter are engaged in their own combat exercises.

Heavy engineer equipment, tanks, self propelled artillery, and other heavy equipment items are stored and maintained year-round by our own ordnance detachment from New Jersey at the Camp Drum training site.

Crews who will train with such equipment travel to and from camp by rail, and are among the first to arrive at camp, and the last to depart. This heavy equipment consequently may be drawn from vehicle concentration, prepared for training use, and later serviced for return to concentration for winter storage by personnel of the using units, with no loss of formal training time.

BRIG. GEN. E. O. WOLF

*The writer of the following article enlisted in the New Jersey National Guard in 1939. During World War II he served in the ETO with a Field Artillery Battalion. He held various assignments including Battery Commander, several battalion staff positions and finally assumed command of the battalion. He has been in command of the 50th Armored Division Artillery since 1946 when he organized that unit of the National Guard. He is a graduate of the Field Artillery and Armored Schools and the Command and General Staff College.*

### Armored Artillery Training

Technical training of Armored Artillery does not greatly differ from the training of towed artillery. The same howitzers are the organic weapons and mechanically function alike. The same requirements exist: to move, to communicate, to shoot. These requirements must still be ef-



fectively performed in order to accomplish the mission. The degree of importance to any one of these points does, however, change somewhat. Each of these will be discussed.

The inherent difference between the Armored Artillery and other type artillery is found in the mental attitude of the personnel and the approach to their everyday mission. The actual construction of the carriage which lends itself to rapid movement, and to being prepared for direct fire while on the move, increases the alertness and resultant speed of the gun sections. The protection afforded against small-arms fire permits closer support by the artillery. Close association developed by combined training with other armored elements tends to develop this mental attitude toward rapid movement and close support, and to look upon the rapid occupation of positions and frequently rapid forward displacements as the normal operation. The normal attachment to a combat command, which may operate for indefinite periods and some distance from Division Artillery control, has a tendency to develop a feeling of self sufficiency in the Armored Field Artillery Battalion. They learn by experience to anticipate future requirements and prepare to solve them without recourse to higher headquarters. The artillery unit commander learns to make his own decisions, and as a result develops confidence.

The construction of the carriage as a self-propelled prime mover combined with the weapon, makes essential that it be operative at all times. If the carriage can't move, the weapon is useless. This fact alone makes maintenance a vital part of the training of each section. It is as important as the ability to fire the howitzer accurately.

This same rapid movement also makes radio a primary means of communication, and wire a secondary means. Frequently time will not permit wire laying, and the Armored Artilleryman has learned by experience that any area in which armor is moving is a poor place to attempt to keep wire communications in operation. Wire on the ground in such an area has a short life. As the result, radio is of utmost importance. Training of *all* personnel in radio procedure is a must. Understanding

of alternate radio nets and alternate frequencies for use in emergency, as well as radio maintenance and care, is most important.

Survey personnel must adapt themselves to working fast. The rapid or "Quicke" survey is very important. The survey personnel of Battalion well forward, and trained to work fast, will increase the effectiveness of battalion fires. If the unit remains in position, improvement of data of course is continuous and essential.

Motor maintenance personnel must be aggressive and prepared to keep the unit rolling regardless of weather, mud or obstacles. Tracked vehicles in rapid movement require continuous maintenance and frequently outrun their higher echelon. In such cases cannibalization and improvisations are required to keep the maximum equipment moving.

Any artillery must continue to support, but the armored artillery must also be ready to continue movement at the same pace, and over the same obstacles, as the supported armored elements, tanks and armored infantry.



Brig. Gen. James F. Cantwell  
U. S. Army

Service elements of the Armored Field Artillery must continue to move, maintain liaison, and support the firing elements at the same pace. The supply should be from rear to forward elements without unnecessary requests. Frequently such service elements require armored protection in order to keep supply lines open.

Medical elements must have a high *esprit de corps* and be prepared to work well forward. Such elements with Armored Artillery units are frequently best able to assist in the

medical problems of supported units who are dispersed or unable to handle the volume.

Armored Artillery more than any other type will frequently find itself firing simultaneously in several directions. Having penetrated, the targets develop to rear and flanks as well as forward. As the result, such possibilities influence positions occupied. Obstacles which will create a mask or dead space and cannot be rapidly removed must be avoided. The tendency is to depend on defilade and use of artificial camouflage, that will move with the carriage if direction of fire is changed. The executive officer must be prepared to mass his fires in any direction with the least delay. He must often register his unit in several directions. The battalion FDC may often register batteries in different directions, and prepare to mass battalion fires in any needed direction.

Personal leadership is most important in developing the proper mental approach to this type unit. The characteristics peculiar to an Armored Artillery Battalion require aggressive, enthusiastic and understanding leadership to exploit these inherent advantages.

If the action is slow, if each move can be anticipated, if time exists for reconnaissance and to plan each move and to issue orders, then the operation of Armored Field Artillery does not differ from any other type artillery. The Armored Artillery training should be based on moving fast, moving often, giving continuous closest possible support, and each unit having confidence in its ability to function in independent fashion. Battalion must be prepared to support the Combat Command in independent action for an indefinite period and the Battery must be prepared to take an advance guard battery assignment with confidence and enthusiasm.

BRIG. GEN. J. F. CANTWELL



*The writer of the following article was commissioned in October, 1942, following graduation from the Infantry Officer Candidate School at Fort Benning. He served as a company commander in the 119th Infantry, 30th Infantry Division, in this country and later in the ETO. Prior to*



his separation from Federal service, he served in Headquarters of the 76th and the 94th Infantry Divisions. He was assigned as S3 of CCB, 50th Armored Division, in July, 1947, and assumed command of the 215th Tank Battalion on 25 May 1950.

### Tank Gunnery

Division Headquarters called a training conference early in the Fall of 1953 to assign division training missions for the 1954 field training period. The conduct of tank gunnery instruction for the entire division was assigned to Combat Command "C," and later became the responsibility of the 215th Tank Battalion. This was a departure from the training plan of previous years, wherein each tank battalion had conducted its own tank gunnery training.

In October a tank gunnery committee was formed in the 215th Tank Battalion to plan and execute its assigned training mission, composed of 12 officers and 80 EM, including the Battalion Commander and representatives of the Battalion S1, S2, S3, and S4 sections. The training mission was subdivided into eight parts. Each part was assigned to one of the officers of the committee with instructions to start the immediate training of his separate sub-committee.

In January 1954 the training plan of the battalion tank gunnery committee was presented to the Assistant Division Commander and the plan was approved. Now the real work of the committee began.

Special training of the sub-committees was carried out on non-drill nights, in accordance with a training schedule prepared by battalion covering each subject in which the sub-committees would specialize. The officers were required to submit a list of equipment they would need to carry out their training mission. The Assistant Supply Officer was given the job of developing and building training aids and came up with a splendid one for training in "burst on target" method, later effectively used for concurrent training.

The Battalion S3 had the job of preparing a time schedule for processing the estimated 640 tank crewmen of the division through sub-caliber and service firing, during the

available period Tuesday through Friday of the first week. The Battalion S3 was also made responsible for supervising the training of the separate sub-committees. The S4 and S3 sections jointly undertook the task of procuring materials and building targets for firing tables I through V inclusive. This work required almost three months to complete.

In June 1954 division held an "On-the-Ground" training conference at Camp Drum, New York when the battalion training plan was applied to the ground that would be available for its use. Fortunately the battalion commander was able to spend the following week at Camp Drum to complete the planning phase. Detailed arrangements were made with the officer in charge of the New Jersey Armored Vehicle Concentration at Camp Drum for the extra OVM and track equipment which would be required. Equipment was a major problem, for the Battalion would need 40 M47 tanks to carry out its training mission.

During this week at Camp Drum,



Lt. Col. Kenneth G. Carr

administrative instructions were prepared for later publication by division, including such things as time and place and number of students for reporting, rosters listing students with information as to completion of gunners examination, and equipment to be carried by each student. The physical layout was planned to be eye-catching, with numerous well-made signs, and all areas marked out with engineer tape. This was designed to impress the students with a business-like atmosphere, and to

facilitate their progress through the various phases of concurrent training and tank firing.

During the first week in July all signs, engineer tape, training aids, targets, tentage and communications equipment necessary for the project were carefully checked to insure completeness, and were loaded for shipment by motor convoy to Camp Drum with division on July 23, 1954. The major part of the battalion arrived at Camp Drum by train on Saturday, 24 July. On the following day all tanks and ammunition were drawn and placed in position on the tank firing range. Tents and signs were erected, positions marked out with engineer tape, and the show was ready to go on the road Monday morning.

On Monday the tank gunnery committee was processed through all the installations, so that the time schedule could be checked and the sub-committees could be given a chance to "wet-run" their phases of the training plan. On Tuesday the first students reported from the scheduled tank battalions, and all the tank gunnery training was completed according to schedule three days later. During this period all tank crewmen of the 50th Armored Division had been processed through all phases of tank gunnery.

These nine months of preparation paid off, and the 215th Tank Battalion and the 50th Armored Division were complimented on the performance of the tank gunnery committee. I quote in part from a comment of one Army inspector upon the performance of the 215th Tank Battalion, "This organization operates with a professional attitude, and is equal to any regular outfit I have ever served with."

LT. COL. K. G. CARR



The writer of the following article was commissioned after graduation from the Ordnance Corps Officer Candidate School in 1942. He was assigned as a platoon commander, 854th Ordnance Heavy Maintenance Company, Fort Bliss, Texas. In July, 1943, he shipped overseas and served as a maintenance company commander in the ETO for the duration of World War II. In July, 1948, he





N. J. N. G.  
Lt. Col. Francis T. Chickene

*was assigned as executive officer of the 50th Armored Ordnance Battalion, 50th Armored Division. He is now serving as Battalion Commander and Division Maintenance Officer.*

### Ordnance Training

The mission of the 50th Armored Division Ordnance Battalion during field training is to be self-sufficient, while providing maintenance and ordnance supply support for all elements of the division, since there is no "back-up" maintenance support nor parts-supply replenishment from the Active Army.

Key personnel of the 50th Armored Ordnance Battalion are permanently employed by the two State Maintenance Shops, which is most advantageous to the division, and to the Ordnance battalion. The parent unit of each shop is a lettered company of the battalion. The entire maintenance parts load is carried mobile by the Ordnance battalion, the parts being brought from the New Jersey National Guard Maintenance Shops by those Ordnance spare-parts personnel who are so employed throughout the year.

It must be emphasized that much preplanning is necessary to produce the successful operations that the 50th Armored Ordnance Battalion has had in past field training periods. Each one of our personnel is made to feel that his part is the important and vital cog in the great wheel of operations. Only thereby can we truly emulate our slogan of being "The Arm of Armor." Ordnance sup-

port to the division commences with the movement from home station, and does not end until return to New Jersey from Camp Drum. Each of the five convoys is supported by an Ordnance battalion team of mechanics, which has with it a wrecker, parts supply truck, and radio equipped jeep.

During field training, all units of the Ordnance battalion operate in the field under realistic conditions. A bivouac site having been selected near the MSR, the maintenance tents are erected, technical trucks and supply trucks are readied to operate, all units and elements thereof being well dispersed, and the Division Ordnance Office (Control Point) is established to direct the flow of work and balance the work load between the companies of the battalion.

Also in support of the combat elements of the division, the Ordnance battalion supplies artillery and small-arms contact teams to Division Artillery and the combat commands both for performing pre-firing inspections, and providing constant weapons maintenance on the ranges.

In addition, the Salvage & Recovery Section is called upon to recover tracked vehicles that have been "knocked out," for one reason or another. The S&R Section habitually places its tank transporters at strategic locations, to be available to the combat commands upon their moves to and from the field. With excellent radio communications available in this S&R Section, prompt service is thereby rendered in vehicle evacuations.

It will be appreciated that the Ordnance battalion affords 100% on-the-job training for its members in performing its assigned mission. During all operations in field training, as is also the case back home in New Jersey, special emphasis is placed on having the new men in each section perform actual repair work, issuing parts, operating wreckers and transporters, and performing other assigned duties, under the supervision of experienced mechanics and noncommissioned officers. This has proven to be not only a splendid training medium, but also a great morale builder and a definite aid in recruitment at home stations.

Lt. Col. F. T. Chickene

*The writer of the following article was commissioned a Second Lieutenant in March, 1943, following his graduation from the Infantry Officer Candidate School, Fort Benning. From August, 1944, until September, 1946, he served as a company commander and later as assistant regimental S2 in the 22nd Infantry Regiment in the ETO. Following V-E Day, he was transferred to the Far East and assigned as a Battalion S3. In 1948, he was assigned as executive officer, 113th Armored Infantry Battalion, 50th Armored Division. He assumed command of the battalion on 3 March 1951. He graduated from the Command and General Staff College in 1946.*

### Reinforced Tank-Infantry Training

Early in the winter the 113th Armored Infantry Battalion received the mission to conduct the reinforced tank-infantry platoon training for Combat Command B. We were to supply the Infantry platoon and the instructors for the Combat Command instruction team. The Combat Commander made it quite clear that our reinforced tank-infantry team would train together on demonstrations all during the first week, in preparation for training the rest of the Combat Command's tank and armored infantry platoons during the second week. During the second week, this demonstration team would stage a demonstration each morning, and in the afternoon they would rehearse for the next day's demonstration, and would be available as assistant instructors.

The balance of the battalion would



N. J. N. G.  
Lt. Col. William C. McCahill





N. J. N. G.

The culmination of a year's training—practical work in the tank-infantry team.

engage in basic infantry unit training during the first week, in preparation for reinforced platoon training the second week. All enlisted men classified as recruits were consolidated on a division basis, and given basic combat training.

I immediately assigned C Company, 113th AIB, to this task.

In May 1954, the Combat Commander, Battalion Commanders, and the officers who were to coordinate the training for the Combat Command, made a week end reconnaissance *on the ground* at Camp Drum. The terrain was carefully chosen to afford successive phases of a continuous problem, for demonstration purposes. The training was to consist of:

1. The organization of a reinforced tank-infantry platoon.
2. Movement into and occupation of an assembly area.
3. Movement to and occupation of an attack position.
4. The attack of an objective, to include seizing and organizing the objective.

The terrain selected had to be of such nature that each day's demonstration could be so conducted that the next day's demonstration problem would start from the point where the problem of the previous day left off.

Following this came the writing of the problems for the demonstrations. This was done by the officer who had made the "on-the-ground" week end reconnaissance, in company with the commanders involved.

He stayed at Camp Drum for a week following the week end reconnaissance, whereby he was able to fit the problem in detail to the terrain selected. Writing of lesson plans followed.

Upon return to home stations the company commanders supplying the tank-infantry team were brought together and given a general orientation. After this, they assigned their subordinates specific duties in connection with organizing the demonstration team.

Three weeks before field training all instructor personnel met at the armory for a dry run of their lesson plans, thus having the opportunity of making last minute changes in their presentations.

On arrival at Camp Drum, all commanders, officers, and noncommissioned officers concerned were oriented on the ground where each demonstration was to be staged. Each day of the first week of field training, the demonstration platoon trained in one of the tank-infantry platoon demonstrations to be presented the second week. During the second week this team presented demonstrations each morning, and in the afternoons staged dress rehearsals of the following day's demonstrations.

The other infantry platoons of the Combat Command had trained as armored infantry, with their carriers, in basic platoon combat training the first week, while the tank platoons had trained in gunnery and tank platoon tactics. These tank and ar-

mored infantry platoons observed the demonstrations each morning of the second week, and devoted the rest of the day to practical training of the reinforced tank-armored infantry platoon, based on the demonstrations they had just witnessed.

LT. COL. W. C. McCAHILL



The writer of the following article was commissioned a Second Lieutenant in the Corps of Engineers in 1940, following many years of enlisted service in the New Jersey National Guard. He served in various engineering capacities in the United States from the time he was commissioned until May, 1943 when he went to the ETO as a company commander in the 840th Engineer Aviation Battalion. Upon reorganization of the New Jersey National Guard in 1946, he was assigned as S2 of the 104th Engineer Group. His present assignment is commanding officer of the 104th Armored Engineer Battalion of the 50th Armored Division.

#### Engineer Training

The field training of the 104th Armored Engineer Battalion offers a unique training problem, due to the diversified types of engineer missions to be accomplished at Camp Drum, and the great number of specialists in such an organization. A carefully selected and worked out training program is therefore essential.

There are two general types of training available to the commander. One type is the training of individuals by means of conventional classes, where engineer subjects are taught by officers specialized in each particular subject. The other type can be identified where training is accomplished by the assignment of an engineer project or a training mission to each unit of the battalion for the field training period.

The first, or class-type of training, was found to be very valuable in the initial training of the battalion, the training of noncommissioned officers, cadre and recruits. With this type of instruction each unit receives identical training in the various engineer subjects, *i.e.*, demolition, rigging, bridging, etc. This system is similar





Charles Studio  
Major Gordon Thompson

to training received at the armory during the year, with, of course, much more practical work involved, but does not have the keen interest aspect of project training.

The second, or project type of training, is recommended for intermediate and advanced training of National Guard engineer units. By this method a project or mission is assigned each unit in the battalion, *i.e.*, a stretch of road to be constructed, an air strip to be built, a fixed bridge erected, a floating bridge built, etc. Each project must be of such nature as to utilize a unit for the entire field training period. This type of training is particularly desirable for development of units, efficiency in operation of equipment

and in the accomplishment of a mission, and proficiency in command and supervision in the performance of individual units. This type also involves more on-the-job staff training.

Probably the best possible type of field training for a National Guard Armored Engineer Battalion is a combination of class and project training, using the class type training for recruits, involving limited subjects, *i.e.*, demolition, knot tying, rigging minefields, etc., and the major portion of the program being devoted to project type training for the companies of the battalion.

In all types of training, a minimum amount of time should be spent on lecture and verbal explanation and the maximum possible time devoted to practical work. In project type training all projects should be of a practical and useful nature; and each project should be put to use immediately after completion, to insure satisfaction to the builders in the efforts they have put forth. Such projects easily can be found since the Post Engineer always has projects which will aid the post, such as building roads and bridges to make more distant ranges accessible; and the division always has need for engineer projects which are required to further the training of its other units, as for example, a bridge which may be needed in a particular tactical problem.

The success of any training pro-

gram is greatly dependent on the efficiency and intensity of preplanning, but this is doubly so with a National Guard unit. The project type of training will require more careful preplanning for successful execution. More staff coordination is also necessary in the estimation for and procurement of supplies, materials, and equipment. Equipment capabilities and time elements must be carefully reviewed and unit commanders must be thoroughly briefed on their particular mission.

Project type training promotes the use of expedient measures to accomplish a mission, *i.e.*, construction by use of two floating bridges was ordered for a crossing of the Black River in a Combat Command exercise. Insufficient M4 bridging was available, thus a combination of M4 and M2 bridging material was used on one bridge, by means of an expedient junction of the two types of bridge.

Maneuver training and unit exercises should be held periodically in order to develop and test coordination of engineer effort in support of division operations.

A carefully selected program of a few necessary basic classes, with the major portion of time and effort thrown into project training, is deemed the most beneficial in the overall training of a National Guard Armored Engineer Battalion.

MAJ. G. THOMPSON



The writer of the following article was commissioned following graduation from the Signal Corps Officer Candidate School in May, 1943. He served on the staff and faculty of the Signal Corps School until December, 1943, when he shipped overseas. He served in the ETO as commander of the 72nd Prisoner and Prisoner of War Battalion, later serving as Signal Officer, Information Control Division, Office of Military Government of the U.S. Forces, European Theater. He attended the instructors course at the Signal School, the Armored School, Radio Operations School, Camp Barkley, and the Telephone and Teletypewriter Operations and Cryptography School, Camp Forrest. He was assigned as a Liaison Officer, Headquarters, 50th



N. J. N. G.

Testing the Engineers' project training goes hand in hand with unit exercises.



Armored Division, on 16 August 1946. He has served as communications officer for the Division Artillery and is now assigned as Division Signal Officer.

### Communications Training

The 50th Armored Division Signal Company, organized on a battalion basis at two stations, is divided into two units of company size with equal administrative and supply responsibilities; operational responsibilities are based on the type of platoon at each armory location.

Planning and coordination of the signal support and operations necessary for the field training period require close staff action, with the Signal Officer being briefed on division plans as they begin to form, and with him sitting in on all conferences that pertain to field training, regardless of nature. The Signal Officer must know the type and amount of signal support required as plans progress.

It is perhaps needless to say that communications are as vital to an armored organization as firing of weapons, or as other tactical training. They must be stressed at all times and must be scheduled concurrently with all phases of instruction; consequently communications training can never be emphasized enough. Remove the mystery from the signal equipment and 75% of the job is accomplished.

Training of signal and communication personnel is stressed throughout the armory year, and is applied during the field training period, with great emphasis placed on voice-radio. However, wire facilities are not slighted. Standard lesson plans, complete with transparency slides, have been prepared by Division Headquarters and issued to each battalion to train all potential radio users. Standardization of training thereby has advanced our communication efficiency and operation 80% within the last two years.

Armory radio nets are maintained using voice over FM sets, powered by the newly issued power converters, a Navy special devices training aid supplied by the National Guard Bureau. This regular use induces familiarity and facility with the issue radio sets, and develops excellent radio procedure.



N. J. N. G.

All potential users of signal equipment must take communications training.

Radio is used to control convoy movements to and from the field training site. Organic army aircraft equipped with ground radio sets assist convoy commanders over difficult terrain and through man-made defiles. Approach to Camp Drum is reported by convoy, approximately 20-30 miles out, on FM sets by use of the RC-292 long range antenna installed on Division Hill, which greatly expedites control.

"Antenna equipment RC-292" is a long-range antenna system, and is issued to each headquarters down to and including battalions. Use of this equipment increases FM radio planning range to 25 miles. Radio nets are operated in the cantonment area and in the field on a 24 hour basis, thus affording commanders constant and immediate control down to lowest echelons. Shortage of frequency allocations, coupled with the number of nets to be operated, presents a problem of tank and armored infantry units being required to share channels with similar units in the division. This is overcome by requiring companies and platoons to operate on low-power only, thereby largely eliminating interference. Operation and maintenance of combat command and battalion nets are first priority.

Additional communication (AM) with each major command is maintained by use of the AN/GRC-26 radio. Teams from the Division Signal Company are sent to Division

Artillery, Combat Command and Trains, which operate voice, key and radio teletype in the division net.

Some 15-20 miles separate the division while in the field from the post. Contact with post telephone facilities and the rear echelon is maintained by Radio Relay AN/TRC-3. Normally four voice and two teletype circuits are provided by this means; however, by adding extra equipment, facilities were doubled in 1954. Wire circuits, though difficult to maintain, were run from Division Forward to each major command, enabling all units to use the radio relay facilities. The First Army Commanding General was able to talk by telephone from Governors Island, New York to the Division Command-



N. J. N. G.

Major Walter Hensel



er at Camp Drum, through post commercial circuits to Division Rear switchboard, via radio-relay to Division Forward 20 miles distant, then via wire circuits to him on a Division Artillery observation post.

The 50th Armored Division feels that radio communications training should not be devoted to signal and communication personnel only, but to all potential users of communication equipment, *ie.*, all officers, and all drivers of radio-equipped vehicles.

MAJ. W. HENSEL



*The writer of the following article was commissioned following graduation from the Quartermaster School, Fort Lee, in September 1942. He served in the South Pacific and the Philippine Islands as a truck company commander until his assignment in February, 1945, as motor operations officer for Manila. He later served as assistant to the chief of transportation in the Philippine Islands. In June, 1948, he rejoined the New Jersey National Guard and was assigned as Division Supply Officer in the 250th Armored Quartermaster Battalion, later moving up to executive officer and battalion commander. Since 1 September 1954 he has been on active duty as Chief of Information, National Guard Bureau. He is a graduate of the Quartermaster School.*

#### Quartermaster Training

The Quartermaster of a National Guard Division during field training is faced not solely with a supply problem. His problem is also to a greater extent one of training. And the biggest training problem facing the service unit commander is in achieving realism. No training is quite so effective as that conducted under conditions closest to those found in an actual operation.

Give a training officer of a line

outfit sufficient tanks, communications equipment, a good problem, and plenty of explosives and he has the ingredients for a training show that should keep even the battle tested veteran in his outfit on his toes and plenty interested.

Give a service unit commander a warehouse, some folding tables, a couple of tabulating machines and a stockpile of supplies to be issued and he has a job to do—but not necessari-



Lt. Col. James B. Deerin

N. J. N. G.

ly an interesting training problem that will hold the attention of his troops.

The commander of a Division Trains unit—Quartermaster, Ordnance, Medical—has first a supply or service mission, whether the division is mobilized or merely on its summer training camp. A second, but equally important mission, is training. This, naturally, must cover not only the supply mission of the unit but operations as well.

As it becomes more certain that service units—and this is particularly true of the Trains units of an Armored Division—will have to be better equipped and trained to defend themselves in future wars, tactical training for these units assumes greater importance.

For this reason, it has been the policy in the 50th Armored Division to conduct as much of the training of the Quartermaster battalion as possible under realistic tactical conditions. A good part of the field training period is spent in the field where the supply and service mission is carried on just as it would be in combat—even to the point of wearing steel helmets and carrying personal weapons while making Class I issue.

When the Quartermaster battalion is not in the field, it establishes truck heads in the vicinity of the combat commands and those other organizations of the division that are bivouacked in the field. Thus while the ODQM may not be in the field every day during the field training period, some part of the battalion—the truck platoons—is being trained daily under tactical conditions.

To get as much realism as possible, the field operations are planned beforehand on maps, even to the point of plotting in reported guerrilla elements which might be a threat to the supply installations in the field. On several occasions, aggressor units using explosives have been pressed into service to harass the Quartermaster operation. Each of the Quartermaster installations in the field is protected by perimeter defenses.

This attempt to give a semblance of realism to the Quartermaster training has paid off, particularly with the non-veterans in the outfit. It has given the men a taste of what war is, and for those who have not had the real dose, it's pretty exciting. An individual in a service unit may not envy an infantryman trudging through the dust, but he does envy a tanker blasting his way through a road block. To offset this in the armored division, we have got to impart a strong flavor of combat to the training of the soldier in the service units.

LT. COL. J. B. DEERIN

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# ARMOR ASSOCIATION NOTES

## Council Meeting

The Executive Council of the United States Armor Association convened at the Army-Navy Town Club, Washington, D. C., at 7:00 P.M. on the 28th of November to firm up plans for the forthcoming annual meeting. Lieutenant General Hobart R. Gay, the senior Vice-President, acted as chairman of the meeting in General Collier's absence. Also present were Generals Jacob L. Devers, Willis D. Crittenger, Williston B. Palmer, Guy V. Henry, Paul M. Robinett, and Harry H. Semmes; Colonels Herbert H. Frost, Henry C. Newton, Briard P. Johnson, and Robert G. Lowe and Lieutenant Colonels George M. Seignious II, William Tuck, Evan Jones and William H. Zierdt, Jr. Colonel Henry C. Newton represented Major General George W. Read, Jr., the Commanding General, The Armored Center. Colonel Redding F. Perry was present. He furnished information on the recently re-activated Second Armored Division Association.

The first order of business on the agenda, the reading of the minutes of the previous meeting, was duly dispensed with.

## Report of the Planning Committee

Colonel Newton gave the report of the planning committee for the annual meeting. The annual meeting will be held on Thursday and Friday, 27-28 January, 1955 at Fort Knox. The tentative program for the two-day affair is published in the box on the opposite page. Acceding to the wishes of many of our members, a longer and a more diverse program is being arranged. A look at the tentative schedule will reveal that the meeting will be twice as long as the preceding years' programs. Also, as many of you have expressed the desire, the second day will be devoted to the presentation of papers on outstanding Armor subjects by experts

in those particular fields. To be covered during the second day are the following subjects: The Proposed Armored Division, "Operation Blue Bolt," and Forum on the Future of Armor. An outstanding feature that many members have requested is an evening affair where *all* members can attend. This will be held on Friday evening and should be a fitting climax to a full two-day session packed with the latest on Armor.

## Report of the Constitution Committee

The next order of business was the report of the committee on the amending of the constitution. This committee was appointed by the President at the last Council meeting to study the constitution and make any recommendations as to proposed amendments to the constitution. General Robinett, the chairman of this committee, discussed two recommended changes. The first recommended change liberalizes the membership provisions for active voting members. As the constitution is presently worded officers assigned to armored units but not members of the armor branch lose their active membership when they are transferred out of their respective armored units. The same situation applies to armored officers who are retired. The intent of this change is to allow persons who have served in Armor to retain their right to an active voting membership regardless of branch. The second recommended change permits the annual meeting to be held any time during the first half of each calendar year. The reason for this change was to permit the holding of the annual meeting later in the year when weather conditions would undoubtedly be better than in January, which is the month specified for the meeting as provided for in the present constitution.

There being more than ten active

members of the Association present at this called meeting, the Secretary-Treasurer was directed to poll the membership in view of amending the constitution. The proposed changes were covered in notices forwarded to all members wherein they were asked to vote upon the changes if they were not attending the forthcoming annual meeting. To accomplish this first recommended change the following paragraphs of the constitution will have to be changed accordingly. Amend paragraphs 2a and 2b of Article IV from:

2. The qualifications for membership are as follows:

a. Active members: All general officers of the Regular Army or Army of the United States; and all officers and warrant officers assigned to, detailed in or serving with Armor shall be eligible. Excepting general officers, any change in official status from any one of the above described conditions will serve to terminate Active membership on the last day of the calendar month within which the change has occurred, and the individual concerned shall assume the status of Associate member.

b. Associate members: Those transferred from Active membership and all other present and former commissioned officers, warrant officers and non-commissioned officers of honorable record in the military, naval or air service, shall be eligible.

to:

2. The qualifications for membership are as follows:

a. Active members: All general officers of the Regular Army or Army of the United States; and all present and former officers and warrant officers assigned to, detailed in, or who have served in Armor shall be eligible.



b. Associate members: All other present and former commissioned officers, warrant officers and noncommissioned officers of honorable record in the military, naval or air service, shall be eligible.

To accomplish the second change to the constitution the following paragraph will have to be changed accordingly. Amend paragraph 1 of Article VI from:

1. The annual or regular meeting of the Association shall be held in January of each year. to:

1. The annual or regular meeting of the Association shall be held during the first half of each calendar year.

Both of these proposed changes will be acted upon at the annual meeting in January.

#### **Nominating Committee**

The Acting President appointed four members of the Council on the nominating committee. This committee is comprised of a member from each of the following groups: the Retired list, the Regular Army, the National Guard, and the Reserve. They were directed to prepare a slate of proposed candidates for the governing body for 1954 to be presented to the membership at the annual meeting.

#### **Auditing Committee**

The Acting President appointed three members of the Council on the auditing committee. This committee is composed of three council members from the Washington area who were directed to audit the books of the Association at the end of the calendar year and render their report at the annual meeting.

Notice was taken of the death of Major General Charles L. Scott, a former pioneer of Armor during its formative stage (see News Notes, page 49 of this issue).

### **PROGRAM OF EVENTS FOR THE ANNUAL MEETING**

The program of events for the annual meeting to be held at Fort Knox on the 27th & 28th of January is arranged tentatively as follows:

#### **THURSDAY 27 JANUARY 1955**

<i>Time</i>	<i>Place</i>	<i>Event</i>
0800	Headquarters Building, The Armored Center	Honors for all visiting general officers
0830	Theater No. 1	Business meeting of the Association
1015	Brick Club	Coffee break
1100	Sadowski Field House	Address by principal speaker
1215	Country Club	Luncheon
1400	Dorret's Run	Demonstration: "Armor in the Attack"
1545	Theater No. 1	Meeting of newly elected officers and council
1900	Brick Club	Reception and dinner for senior officers and distinguished guests

#### **FRIDAY 28 JANUARY 1955**

0800	Theater No. 1	Presentation of paper on proposed armored division by The Armored School. Discussion of paper follows
0950	Brick Club	Coffee break
1020	Theater No. 1	Presentation of paper on "Operation Blue Bolt" including scheme of maneuver by The Armored School. Discussion
1200	Country Club	Luncheon
1315	Theater No. 1	Presentation of paper by selected senior officer, and discussion
1500	Brick Club	Coffee break
1530	Theater No. 1	Forum on the future of Armor by AFF Board No. 2 and The Armored School
1630	Theater No. 1	Presentation of new officers of the Association and discussion by new president of plans for coming year
1700	Theater No. 1	Official closing by the new Association president
1900	To be announced	Dinner for all conferees





Escort officers and institutional heads of ROTC schools are being oriented.

## ROTC SUMMER ENCAMPMENT

Between the junior and senior years at college an ROTC cadet is required to attend a six-week training period at some Army installation. Those cadets who are in the Armor program are sent to Fort Knox to receive their training. What the cadet performs in summer camp is based on the theoretical instruction he has learned in the classroom at his respective institution. The supervisors of the six-week course are Armored officers assigned to the various colleges as instructors. They attend the camp with the cadets and act as tactical officers, instructors and occupy other administrative positions as required. During the junior year at college the cadets receive instruction in organization, supply, tactics, tank driving, motors and gunnery. During the summer camp the cadets apply this theoretical knowledge in all phases of becoming a tankerman. The hours are long and the work is hard but it pays off in making our ROTC program the success that it is. CAPTAIN ROBERT H. HARRINGTON

All photos—U.S. Army



Cadets making final checkout of clothing issue before beginning their training.



There is no better way to build company esprit than by dismounted drill.



Marksmanship is another phase of the training that consumes many hours.



Shown here is an ROTC cadet checking into radio net as tank commander of an M41 tank.



A great deal of time is consumed on learning to properly read the tank range finder.



Here cadets are unpacking ammunition in preparation for gunnery practice.



These cadets are shown loading ammunition on a Patton M48 tank.



These cadets from the New Mexico Military Institute are performing crew maintenance on their M48 medium gun tank. Maintenance is a continuous operation.



These cadets are on the tank range, firing the light tank. The importance of getting in a hit with the first round is stressed continually to provide the crew with the best chance of survival in combat.



The ROTC summer encampment is not all hard work. It does have some moments of relaxation as these cadets are enjoying TV at the recreation hall.



# ARMORED DIVISION REORGANIZATION

CARDED

by COLONEL DAVID WAGSTAFF, JR.

**T**HE future battlefield commander will have, either under command or furnished on call, a greater destructive power than ever before due to the scientific developments of the past several years. However, on the debit side of the ledger, he will have to control more complex equipment, requiring more highly trained specialists for its operation. Further, the size and weight of the weapons make their concealment difficult and their logistical requirements enormous. As each new weapon is unveiled, greater concern is felt in the thinking military mind about current doctrine of organization, logistical support and tactical employment. Further, in carrying out any such study, it should be recognized that any potential enemy has the capability of duplicating our progress, if not surpassing it in some instances. Therefore, the basis for any thought should be, as a minimum standard, our future expectancy and not present known capability. It is the objective of this article to briefly apply the more outstanding effects of weapons development to the Armored Division structure, to its organization and tactics, and to arrive

at certain broad principles to guide the changes that are necessary.

Without being specific as to the capabilities of each new weapon, their collective effect on the battlefield will result in greater dispersion—a widening and deepening of the battle position and its logistic installations area. This expansion of the unit combat zone presents the requirement for greater range of track and wheeled transport, of higher speeds and overall increased mobility. In turn, this requires a reduction in fuel and other supply requirements and a reduction in the size of units to ease the burden of maintenance and resupply. It requires that combat elements of units be self-sufficient and capable of isolated action over comparatively long periods of time with the minimum of logistical and tactical support. As much of the heavy tactical fire support will be furnished by higher command echelons, the already heavy burden on communications will be increased. Commanders will have to have available easily controlled, operated and maintained communications of longer range and of greater built in security.

The greater distances between units, both in the line and in reserve, will require rapid concentration and dispersion so as not to present a lucrative target to the enemy prior to, during or after an attack. Logistical installations will be moved further back with greater dispersion. They will be required to furnish their own

defense and to continually change the locations of units, shops and dumps. This will further complicate supply planning and logistical support. Reserve forces will be similarly affected, and will have to rely on more rapid movement to concentrate at any vulnerable point on the extended front.

The conduct of the battle will be by self-sufficient combat groups holding terrain islands, much like a game of checkers with each checker representing the island combat group. In both the attack and active defense, the prime objective will be the destruction of the enemy forces rather than to gain or hold ground. The passive defense will give way to a holding defense. The final outcome of the battle will be a result of enemy decimation rather than through the conquest of land area. All maneuver, to the front, flank and rear, will be aimed toward the creation of lucrative enemy targets by canalization, by breaking up his formations into groups that can be destroyed by the forces available or by rapid thrusts deep into his logistical installations to weaken his combat effectiveness. The conquest of terrain by well planned maneuvers solely for the purpose of its liberation will be secondary, and will result from enemy attrition.

With the growth in the size of the combat area, the difficulty of obtaining adequate and timely intelligence is amplified. However, this problem

COLONEL DAVID WAGSTAFF, JR., a 1933 graduate of the United States Military Academy, served in Europe during World War II. Subsequent to the war he served in Fifth Army Headquarters and later G2 Headquarters, EUCOM. He is presently assigned as Senior Advisor, 49th Armored Division, Texas National Guard.



## ***The Armored Division can increase its combat strength***

***without increasing its over-all size. This must be done***

***to meet the challenge of new tactics based on the devel-***

***opment of new weapons. The "how" is supplied in this***

***article which is worthy of study by all armored officers.***

will have to be solved by furnishing the commander greater means of collection if the fullest benefits are to be obtained from future weapons. Lightly covering the front with observers and local patrols will no longer suffice. The future commander will have to know the full extent of the enemy positions, his reserve movements and the location of rear area logistical installations if he is to rapidly concentrate his forces, make telling thrusts and then rapidly withdraw to the safety of his island system.

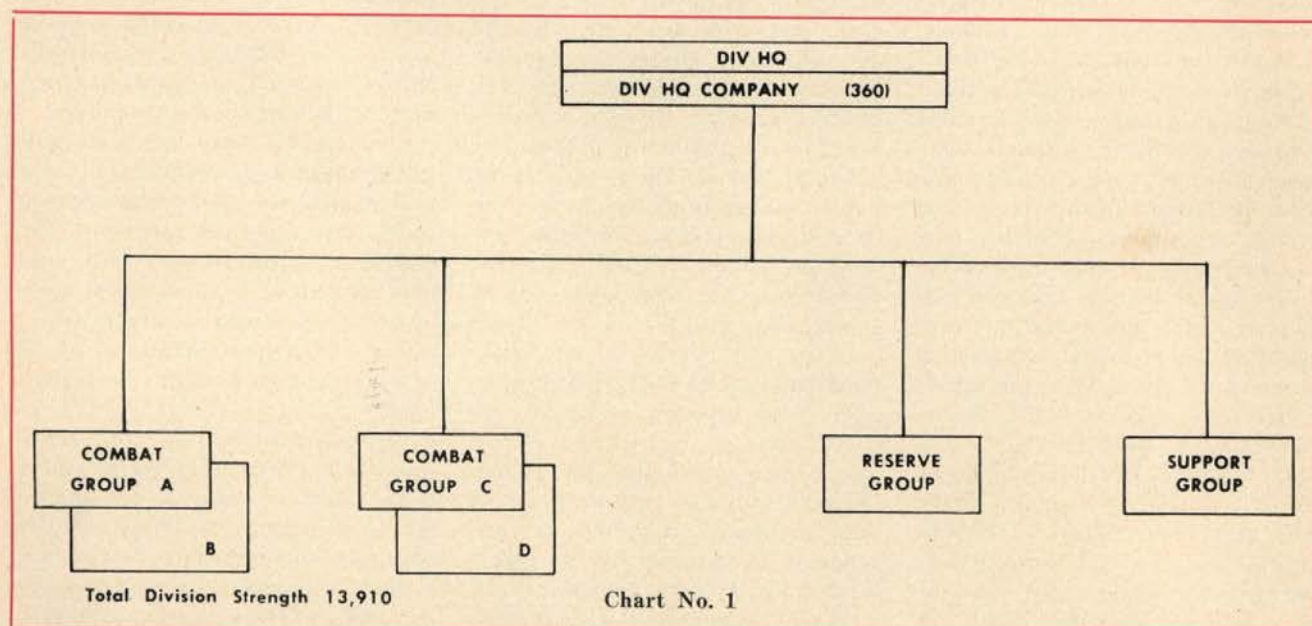
It is well realized that none of the above resultants are completely new in the art of war. However, changing armament places greater emphasis on different precepts than heretofore.

Undoubtedly, many more can be added to the above summation but those presented are considered adequate to furnish the basis for a look at the present Armored Division organization to see if it is capable of meeting the challenge.

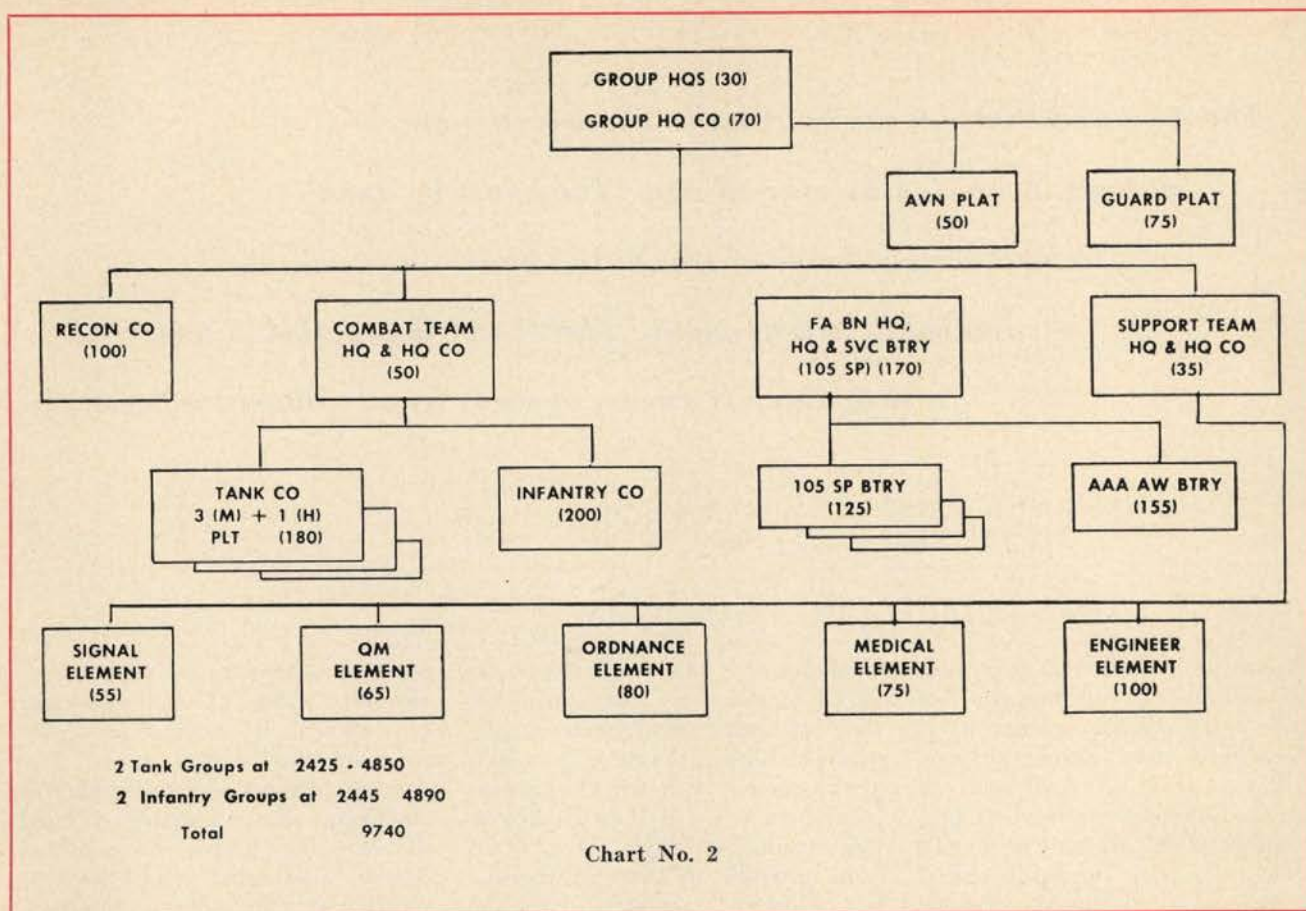
In general, an armored division is considered a suitable tool for use in the conduct of present or future warfare. It furnishes cross-country mobility to combat units and armored protection to many elements of heavy firepower. However, its combat vehicles are of short range, it is not organized into self-sufficient combat teams, its logistical problems are enormous, its overall cross-country capability needs improvement and its

per cent of combat to support elements it too low. These faults must be corrected if the division is to dominate the checker game. The primary requirement for self-sufficient combat groupings, capable of rapid operation, with surety, in a wider and deeper battle area, points the way toward any required reorganization.

To prepare for the more rapid and longer moves, and for an overall reduction in logistical requirements, speeds must increase and supply requirements decrease. These factors can only be solved on the drawing board by the production of more efficient engines and fuels, and better, simpler equipment. Any savings capable of being made by the







creation of a new organization would be insignificant compared with those made possible by technological advances.

The enlarged battle area presents the need for an increase in combat elements. However, this should not be gained by increasing the size of units. It should be gained by a reduction in per cent of administrative personnel and equipment. The overall size of the division should be reduced as much as possible without reducing its effectiveness. Combat groupings should be of fixed organization to foster team spirit and mutual respect. They should be supplied with organic support elements. The requirement for a larger area of operation for the division indicates that a fourth combat group and a reserve should be added to the organization—a return, in principle, to the square division concept in major subordinate commands. The present support element at division level should be retained at a reduced strength. Those staffs that are retained should be strengthened to properly perform their revised tasks, while those that are not considered essential should be

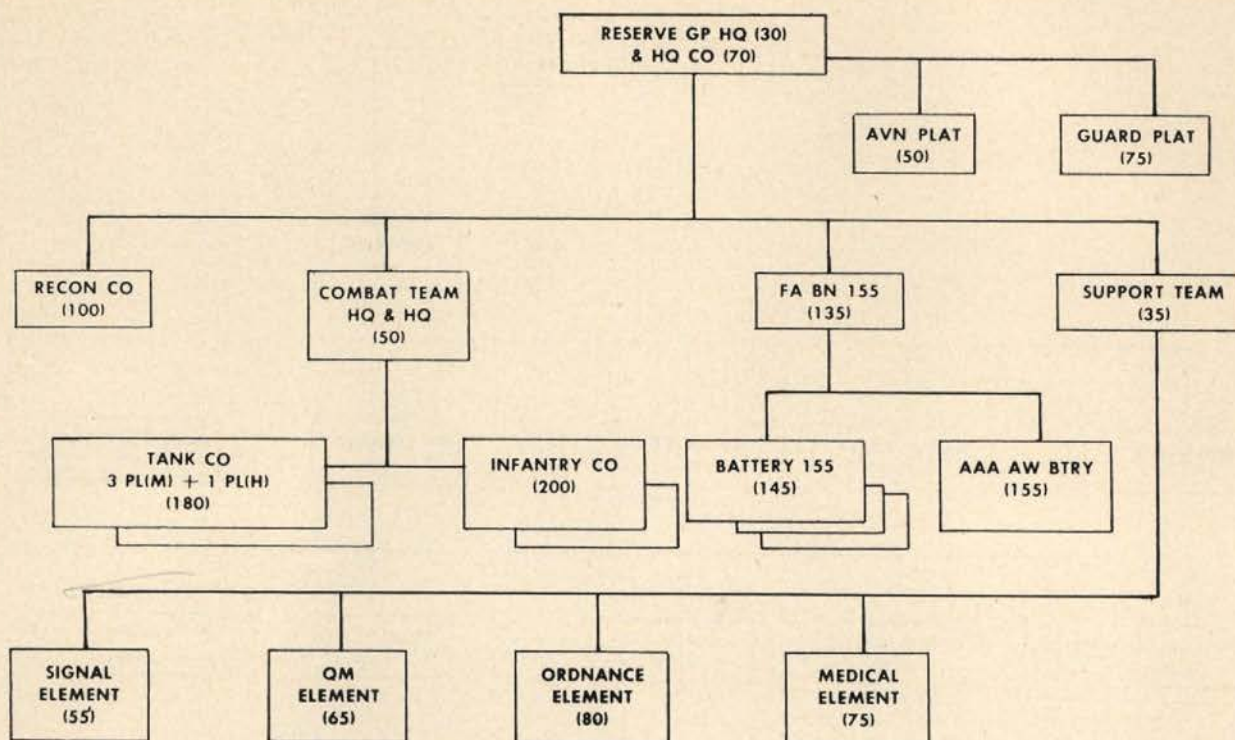
done away with, which is possible in some instances under the fixed organization concept. However, the internal organization of combat groups should vary so as to give the division commander as wide a selection of tools as possible. This variance should be basically in the ratio of tanks to infantry, as is done in current employment doctrine. In two combat groups, tanks should predominate while in the other two groups the infantry element should be stronger. The addition of a reserve group further increases the number of tactical combinations that can be gained. If the combat strengths of the groups can be maintained close to those now used, an overall increase in tactical effectiveness has been made. As all groups, including the reserve, should be balanced combat teams, they should all contain tanks, infantry, artillery and support elements. (See Chart No. 1.)

It will be noted that the present Division Artillery organization has been eliminated. This will be compensated for by placing an FSCC organic to the Artillery Officer staff section at division level and an FDC

in each of the Field Artillery Battalions in the combat groups. This will permit batteries to give direct support, for which fires some AP ammunition should be included in all gun allowances, to concentrate group fires or to fire under division control on direction of the Division Commander. The same capabilities as currently exist will remain with a reduction in overhead. It will be noted that the size of the Division Headquarters and Headquarters Company has been slightly increased for this purpose.

Due to the requirement of self-sufficiency, the group staff will have to be capable of performing administrative and logistical functions. By combining small support units into one command, a supervisory headquarters is obtained. Further, it simplifies the chain of command by establishing similar headquarters at each level. Again, a slight increase in strength is permitted in group headquarters to compensate for the added work load. To increase the intelligence gathering capability of the group, an augmented aviation section is shown in each combat command. A guard section is added so as to give





1 Reserve Group at 2170

Chart No. 3

local security without drawing on the unit combat strength. Retained Battalion Headquarters are redesignated Combat Team Headquarters and control both tank and infantry units. The tank companies are strengthened by adding a heavy tank platoon to each company. The heavy tank battalion is eliminated. In the support element, and in the companies of the Combat Group, all vehicles should be armored to the extent that they are not affected by small arms fire and unless the cross country capability of wheeled vehicles is materially improved, all trucks should be tracked vehicles such as a stripped down M39 personnel carrier.

A signal element is placed in each combat group. This will necessitate a Signal Staff Officer at this level of command. A reduced signal company is placed at Division headquarters requirements. This is one more instance of giving the Combat Commander the tools and then requiring that he use them to the best advantage. Signal coordination will be gained, as at present, at the Division

Signal Officer level. There will be four groups, two heavy in tanks and two heavy in infantry. The medical section in each combat group support element eliminates the need for separate battalion detachments. Further, as supply and ordnance support is organic, the Service Battery of the Artillery Battalion is eliminated and the Headquarters Battery slightly increased in strength. To compensate an AAA Battery is placed in each group, doing away with the necessity of an AAA Battalion. (See Chart No. 2.)

As the reserve group is to furnish the division command with an additional means of influencing the outcome of battle, it should also be a balanced force, however its strength should be adapted to its anticipated missions. Besides support of the four main elements, it should be prepared to provide additional area security, to secure lines of communications, to fill gaps that appear in the battle structure and to prepare "stop-line" positions behind the main area of resistance. It will be noted that the term "main line of resistance" is omitted purposely. The force also

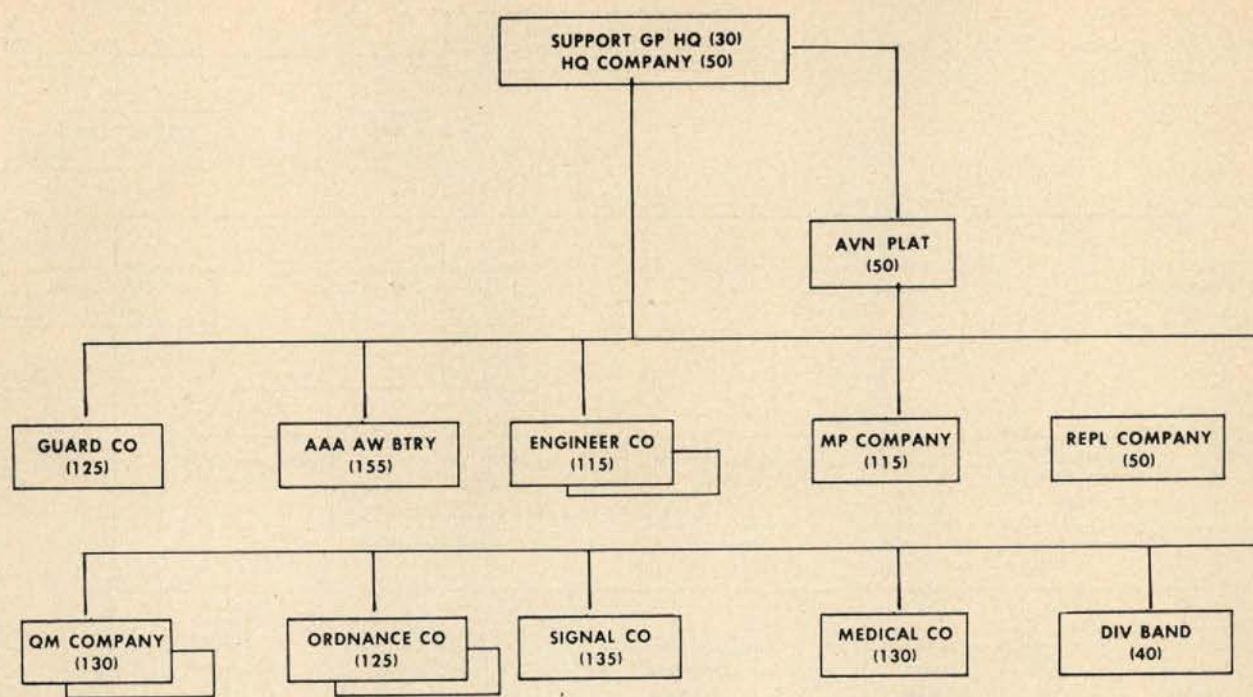
should be capable of performing special missions, for division by creation of combat teams. A typical mission could be reconnaissance in force. In addition, its artillery should be capable of giving overall division support when required. Therefore, a field artillery battalion of 155 SP replaces the 105 battalion. (See Chart No. 3.)

It will be noted that no engineers are placed in the reserve. It is anticipated that ample engineer support will be available for any mission; if two companies are placed in Division support one of these two companies could be a bridge company.

Even though each of the major combat elements will be self-sufficient, it will be necessary for division to act in its normal capacity in administrative and logistic support. Further, there will be times when special operations will require further support from division level. In addition, the support group will have to provide rear area security. (See Chart No. 4.)

Using current unit strength and composition and comparing it with the proposed organization it can be seen that Division strength is reduced





1 Support Group at 1640

Chart No. 4

from 14,756 to 13,910. In the current organization of the division there are fifty-three company sized combat units, exclusive of battalion headquarters and service elements. In the proposed organization, there are the equal of sixty-two such units. Expressed in per cent, there is a 17% gain in combat strength with a 6% reduction in overall strength. It would be possible, if the exact unit compositions were worked out, for a further reduction in overall strength to be accomplished. However, the gain made in personnel strength vs combat strength is significant. It is believed the overall gain in efficiency would be outstanding. If the need for a fourth Combat Command can not be accepted, then an extra tank company should be added to two of the Combat Commands and an extra infantry company to the third. This will maintain the unit combat strength at the present level, with a personnel strength of 12,025 or an 18% reduction over present strength. However, such a change would greatly limit the flexibility presently built into the Division, and reduce the Division capabilities of tactical employ-

ment available to the commander.

In considering the study, conventional unit designations have been used in many instances. This does not mean that the old type companies are accepted. Each company will have to be restudied separately so as to tailor it to the tactical concept. For example the "guard company" could be composed of two infantry platoons, a tank section and a labor section. This would permit it to protect the headquarters and dig it in. The "QM Platoon" could have a truck section and a supply section. The reconnaissance company could be composed of two reconnaissance platoons and a ranger platoon. The aviation platoon should be a combination of fixed wing and helicopter planes organized to observe, reconnoiter and resupply.

It is anticipated that the major objection to the above considerations will come from the Artillery and from the support branches who, for some time, have basked under the light of autonomy. However, this dual responsibility would be curtailed and the commander given under direct command the tools with which he is to fight. The tactical concepts out-

lined at the start of this article dictate direct assignment, not attachment or support, so that firm control of all elements can be maintained without split responsibility. There would be no change in current staff functioning except that Special Staff Officers would no longer be considered as commanders in addition to their staff functions. However, they will fulfill the requirements of technical advisors and supervisors.

As in any reorganization recommendation, the rank and branch of commanders becomes a debatable topic. However, it is not the purpose of this article to solve intra-service arguments. Therefore, any reference to branch or rank of unit commanders has been omitted. It is felt that, if serious considerations were given to an organization similar to this one as recommended, any such differences could be settled either by the conferees or by command action.

If this article leads the rank and file of Armor to think, and to consider what they would like to have in the way of weapons and organization in future warfare, it will have served a useful purpose.



**R**ECENTLY Army Ordnance unveiled its latest antitank weapon. The BAT, the common nickname for this latest weapon, has been officially designated the Battalion Antitank 106mm Recoilless Rifle System.

Together with its mount and accessories, the 106mm recoilless rifle weighs less than 500 pounds. Mounted on a quarter-ton truck, it requires less than a minute to remove it for ground firing or to return it to the vehicle. It is man-portable for short distances and can be fired either on or off the vehicle. The tripod mount has a wheel on its front leg. The two rear legs are movable so that it can be moved like a wheelbarrow.

The basic parts of the system are the rifle and its special ammunition, a spotting rifle, mount and fire control system.

A caliber .50 spotting rifle is mounted on the weapon, which eliminates the need for a heavy and fragile optical range finder. This greatly improves the first round hit probability. The caliber .50 bullet contains a tracer element and a spotting element which emits a puff of smoke on impact. The spotting rifle is fired with the same trigger used for the 106mm rifle. It is a knob which is pulled to fire the spotting rifle and pushed to fire the major caliber rifle.

Telescopes for direct and indirect fire are included in the system. The rifle can be traversed through 360 degrees on its mount, and can be elevated through the range minus 20 degrees to plus 60 degrees.

In 1950, when Army Field Forces and the Ordnance Corps formulated military characteristics for this system there were four design objectives set: (1) Maximum destructive capacity, (2) Maximum range and accuracy, (3) Minimum weight, and (4) Maximum rate of fire.

Claimed to be capable of defeating any tank in the world today, it has the accuracy to lay accurately on a target more than a thousand yards away. It can use one of several type modern projectiles which can penetrate the thickest armor any tank might use. Its primary purpose is to provide a weapon at the Infantry Battalion level to defeat armor, with a secondary role against personnel, gun emplacements, pillboxes, and caves.



Overall view of the BAT.

## THE BAT



The BAT, being fired.



CARDED

# TANK *Versus* TANK BATTLE

by MAJOR V. P. NAIB

**T**HE war and its aftermath have given rise to quite a few tactical concepts on the employment of armour. Many of these ideas were originated to meet particular battle conditions and were not evolved by a process of logical reasoning for determining the place of armour in battle. As some of them, though false prophets and not honest coin, pass for currency, they need "debunking." Some time ago an article entitled "Close Support" published in one of our Service Journals debunked, though indirectly, the fetish of Infantry/Tank co-operation. Another such idea is the concept of "Tank versus Tank Battle" and its implications.

## Dangers of False Currency

The danger of such concepts gaining currency in a country like ours is all the more serious because of our limited war potential, and technological and industrial backwardness. Sometimes one hears people blithely repeating these concepts during discussions and exercises without the foggiest idea as to their applicability under Indian conditions. The reason is not far to seek. During the courses both at home and abroad our studies are largely based upon British establishments and equipment, which though bearing a strong resemblance

to our own due to past associations, are becoming increasingly different because of Britain's very much advanced technological and industrial resources. Study of American establishments and equipment further tends to complicate matters. Unless one has a very analytical mind and a sense of realism, one is apt to be led away into a land of make-believe where theoretical battles are fought on sand models with imaginary equipment. In the event of a war, unless we are partnered by an industrially advanced power, which can only happen in a global conflict, our limited resources would be subjected to an abnormal strain with very little or no replacements coming in from outside. Therefore, the organization and training of our armed forces should be such that they not only bear this strain but also make their maximum effective contribution towards victory. As armour happens to be a very important component, whose influence can be decisive in battle, and as our resources in armour are limited, it is necessary that we should examine very carefully the implications of armoured tactical concepts so that we are ready for war with our sights clear and guns steady.

## Origin of the Concept

After the phenomenal success of German armour in France the Allied High Command became pre-occupied with the task of stopping the German armoured onslaught because that was the urgent problem. Both

in Russia and in the North African theatre all energies were directed to achieve this end. Consistent with this policy armour was thrown into battle primarily to defeat German armour. It was laid down in the North African Command that the primary task of armour was to defeat and destroy enemy armour. The result was a total failure in both the theatres. What eventually stopped German tanks was not allied armour or anti-tank guns. In Russia it was faulty German Planning, lack of reinforcements, and the bogging down in the "Russian Mud" of the supporting arms and the supply echelons. In North Africa it was again lack of reinforcements and supplies due to faulty planning by the German High Command. This was again due to the failure to realise the strategic importance of the North African Theatre by the German High Command, who regarded it as a "side show" to help and buttress Italian morale. As Field-Marshal Rommel has pointed out, "There was no understanding in the Fuehrer's HQ of the art of creating strategic centres of gravity at the decisive point."

In North Africa, the British failure was due to lack of appreciation at higher levels of command of the mobile nature of operations, lack of training at lower levels in the tactical handling of armour and anti-tank artillery as a tank-destroying team, and in the initial stages only, the lower punching power of the low calibre tank guns. Rommel never launched his armour to seek out

This article appeared in the July 1954 issue of *The Journal of the United Service Institution of India* and is reprinted here as a matter of interest to all Armor personnel with the kind permission of the editor of that magazine.



British armour and destroy it. His aim was always deep penetration for disrupting the enemy communications, headquarters and supply echelons. He always conserved his armour to deal the final blow. If he could avoid meeting allied armour and still achieve his aim he did so. But whenever he was forced into a tank versus tank battle he used tanks primarily for manoeuvre and led the British tanks into tank killing areas, which were sometimes previously planned but quite often improvised during battle. Here the powerful 88 mm guns knocked out the British tanks. The knocking out of enemy tanks by his own tanks was purely incidental to the overall plan. Rommel always maintained that "as armour is the core of the motorised army and everything turns on it, the war of attrition against enemy armour must be waged as far as possible by the tank destruction unit". In addition to this basic concept Rommel was compelled to conserve his armour because he also knew that, with his vulnerable communications across the Mediterranean and the long trek along the North African coast, he could not obtain quick replacements, not to speak of reinforcements, to his Afrika Korps.

### **Fallacy of the Concept**

Somehow the dead hand of the past appears to be preventing us from developing a modern, realistic concept of war based upon the real capabilities of armour, our existing and possible resources, and, consistent with our national policy, the type of enemy and terrain in which we will have to fight. We still hear people talking about armour defeating armour in a tank versus tank battle and "providing mobility and freedom of action to the main force", which in effect means "using a mobile force to give mobility and freedom of action to an immobile force, a proposition *prima facie* illogical". If we follow this policy we will be committing the same mistakes as the

British and the Russians committed, with perhaps more disastrous consequences, because we will not have at our disposal the inexhaustible allied arsenal to steam-roller into success. If we lose, as we certainly will, the bulk of our armour in a tank versus tank battle, then we will also lose our power of manoeuvre on the battlefield. This is irrespective of the results of such an action, in which we hope to defeat and cripple enemy armour, which is itself problematical. Criticising this concept someone has pointed out that "to throw away such a potent piece as a tank force in fighting the enemy tank force is as foolish as for a chess player to begin by swapping queens."

Another contributing factor to this fallacy is the post-war development of anti-tank tactics and equipment, particularly in America. The anti-tank weapons have gone through a full development cycle and now it has been accepted universally that the anti-tank gun must possess good cross country mobility and armour protection. Some have pointed out that it must be a tank and have advocated that it must have more armour and a bigger gun. The development of the heavy gun-tank in the United Kingdom is based on this line of thought. They have equipped their infantry divisions with heavy gun tank regiments, as tank killers, in the place of the old Divisional Regiment Royal Armoured Corps equipped with light tanks. This has also led to the elimination of the anti-tank artillery regiment from the organisation of the division. They have also included a troop of these heavy gun tanks in each of the sabre squadrons of their armoured regiments. According to the information available the reason for this inclusion is to ensure that the Armoured division during its mobile operations is not out-gunned when suddenly confronted with the Josef Stalin tank in the depth of Russian defences. One cannot help feeling

that this is a legacy of the past, the Allied respect for the German 88 mm gun and the Panzer Jaegers projected into the Russian theatre in a future war.

The advisability of including heavy gun tanks in the armoured regiments is questionable because, due to their smaller radius of action, greater weight and slower speed, they will definitely cramp the style of medium armour in its mobile role. The idea appears to be as impracticable as if someone, during the pre-gunpowder era, had suggested the inclusion of elephants as an integral part of cavalry merely because of the apprehension of meeting elephants in the enemy defences! The point at issue, however, is that the role of armour and the role of tank destroyers should not be confused. Whether the tank destroyer is another tank, assault gun, SP anti-tank gun or any other weapon, it should be integrated into a tank destroyer team with infantry and normal armour, and the latter should not be treated as the primary anti-tank weapon. In India we have not got heavy gun tanks, and even if we had them their use may be restricted, because of the state of our roads and bridges. Therefore, the organisation of tank destroyer teams from our existing resources and their training for war assumes added importance.

### **The Battle**

From the foregoing it is clear that tank destruction in a deliberately sought out tank versus tank battle is an expensive business particularly for a country which does not manufacture tanks in large numbers. But there are occasions, when it is forced upon us and our tanks should be ready to meet the challenge, while bearing in mind that, essentially, the crippling or destruction of the enemy tank force is achieved by leading the enemy tanks into the jaws of our tank-destroying teams. I have used the expression "tank-destroying teams" advisedly, because,



considering our present resources, destruction of enemy tanks could only be achieved economically by the integrated effort of all arms. Before proceeding to discuss the operational aspect of the problem it is necessary to take stock of our resources for the task. Anti-tank effort at the present moment consists of anti-tank guns of the Artillery, tanks from the armoured corps whenever they can be made available, field and anti-aircraft guns when used in the anti-tank role, the close range anti-tank weapons of the infantry, and lastly the Air Force when in direct support of the Army. Another very important complement is the Engineer effort in the laying of minefields and the construction of other anti-tank obstacles. Out of these resources, the 6 pdr anti-tank gun is obviously very much out of date on account of its limited range and punching power. For the purposes of this discussion it is assumed that the infantry divisions will be equipped with a more powerful gun adequate for meeting the modern tank on level terms in a slugging match.

I shall now proceed to discuss the Battle under the various operations of war with particular reference to the role of the tank in tank destruction.

### **Defence**

The conduct of defence as a preliminary to the launching of offensive operations must itself be offensive and its aim should be primarily the destruction of enemy armour. In order to do this successfully the defence must be organised into a system of strong points in depth. These strong points should consist of nothing less than brigade sectors organised in such a way that they are capable of fighting independently even when surrounded. It would be preferable to organise battalion localities as strong points but this is at present not practicable unless the infantry battalion is organically

equipped with anti-tank guns or assault guns in addition to its close range anti-tank weapons.

These strong points will have three tasks in the defensive battle. First, they stop the initial attack by the enemy who will naturally support his infantry with tanks and artillery and, quite possibly, air. Secondly, they separate the initial attacking troops from the forces following the initial attack and these are necessarily enemy armoured forces. The disposition of our strong points should be such that they effect this separation and dictate the direction of attack for enemy armour and at the same time form the bases or pivots for manoeuvring our own counter-attacking force. While doing so they achieve the third important task which is incidental to the other two. This is their individual contribution to tank destruction and the placing of our counter-attack force at a moral and material superiority over the enemy in the final act of the drama which is the destruction of enemy armour. They do the latter by blunting and disorganising enemy armoured thrust and making the enemy tanks fight and expend their ammunition so that they are at a definite disadvantage when meeting our armour. This reduction in tank fire power largely neutralises the inevitable numerical tank superiority of the attacking forces. This is offensive defence.

It will be seen from the above that our tanks meet enemy tanks only at the very end, after enemy armour or what is left of it has overcome or by-passed our strong points and passed through our tank killing areas on to our vital ground. The organisation and planning of our counter-attack should aim at getting this enemy force at a disadvantage from the flanks and delivering the final blow.

### **Attack**

In the attack battle the problem of facing enemy tanks arises on two

occasions. Initially we meet enemy tanks when he counters our penetration into his defences or when he counter-attacks to eject us from ground vital to him. The destruction of his tanks and his defeat depends on the quickness and efficiency of our re-organisation. The battle in this instance should be based primarily on our anti-tank weapons. When tanks are available they should be used primarily to cover the dangerous gap between the arrival of the infantry on the objective and the siting of the anti-tank guns, according to the accepted drill. The points to remember here are reconnaissance without delay of suitable fire positions including alternative fire positions, the drill for replenishment of ammunition, and good fire-discipline.

The second occasion when we can expect to meet enemy tanks is during the break-out and pursuit phases of the attack, when the enemy would be compelled to cover his withdrawal with armour. As he would naturally be anxious to save as much of his armour as he could, he cannot afford to be bold and undertake risky operations involving heavy casualties to his armour. A withdrawing enemy would naturally fight with his armour from prepared fire positions to delay our advance. Under these circumstances we should take advantage of the enemy's sensitiveness to our outflanking moves and the cutting of his routes of withdrawal. We should not normally rush his positions by frontal assault as that would result in casualties to our own armour and we should avoid this as much as possible. But the important point to remember here is that there is never any point in attempting an outflanking move round the enemy force unless it is engaged and tied down frontally. This is because the enemy force being mobile can always hold up the outflanking columns and slip out of the trap.

The frontal engagement can be carried out by our infantry and ar-



tillery assisted, if necessary, by our armour. The outflanking armoured force must be accompanied by SP anti-tank guns, so that on reaching a suitable position astride the route of withdrawal, the latter can be deployed under the cover of our armour. This is invaluable because the SP anti-tank guns will then act as a secure fire-base and a pivot of manoeuvre for the tanks in addition to their task of tank-killing. It may be mentioned here as a point of interest, how much more effectively this task can be accomplished if we can have assault guns instead of SP anti-tank guns. The motorised infantry should fetch up as early as possible and deploy in this fire-base. This is the best method of cutting off enemy armour and destroying it, consistent with the security of our own armour. It is needless to stress that boldness, speed, and initiative on the part of the armoured commanders is the basis of success.

#### **Withdrawal**

The problems of withdrawal have already been partly considered above under "Attack", from the enemy's point of view. As the aim of the covering forces in a withdrawal is to delay the enemy while our own defences are being organised, the task of inflicting casualties on enemy armour becomes incidental and of secondary importance. This cannot ever be attempted from covering positions or minor delaying positions. But, consistent with the main task, every opportunity should be taken to organise tank traps with our armour and anti-tank guns. This can be done best at the intermediate positions by covering the likely tank approaches, particularly on the flanks. No other position, except the main defences, can provide the necessary security for the operation of tank destroyer teams. The organisation of these tank traps requires adequate reconnaissance and careful planning and a very fine judgment on the part of the commander as to when he

should break off action and withdraw the troops forming the tank traps. Otherwise, the whole withdrawal operation may be jeopardised by the loss of valuable equipment. Careful reconnaissance of fire positions and covered routes of withdrawal, arrangements for early warning of tank approaches, adequate fire support and efficient intercommunications are essential for the successful organisation of these tank traps.

#### **Advance**

When armour is leading the advance in force and not merely as the spear-head of an infantry formation, the operation is definitely different and something bigger and wider than the orthodox advance taught in our instructional establishments as one of the operations of war. What I have in mind is the entire battle based on a moving pattern in which the armoured force advances through a succession of objectives and drives deep into the enemy territory on to a strategical objective. Perhaps with our present armoured resources such an operation may not be undertaken, though I do not rule out its possibility. We may, therefore, be confined to limited advances as part of the over-all plan. Even so, there will be numerous occasions when we meet enemy armour ranging from light reconnaissance troops to heavier armour as we encounter stronger opposition. The tactics will be similar to that discussed under the breakout and pursuit phases of the attack but with one important difference. As we will not be advancing against a withdrawing enemy force defeated in battle, we cannot take similar risks. There is need for greater security, which means that our armour should advance from firm base to firm base. These firm bases are actually fire bases organised by the accompanying artillery and infantry support elements, which are necessarily motorised. In addition to providing security for the operation of our armour these are necessary for

bringing up the supply echelons. Adequate air supply, air transportation, and tactical air support would tremendously increase the range and scope of these operations but the provision of so much air support depends on various factors, whose discussion is outside the scope of this paper. As far as the destruction of enemy tanks is concerned, the point to remember is that our armour should work in close cooperation with SP anti-tank or assault guns and tactical air. The tank-destroying team will continue to operate as described previously.

#### **Conclusion**

From the foregoing discussion it is clear that destruction of enemy tanks is a continuous process achieved by the combined effort of all arms. The contribution of tactical air, though not considered in detail, is nevertheless very important. The organisation of killing areas and "tank destroying teams", the planning and launching of counter-attacks, the forming of firm bases, and the details of the tactical employment of armour and artillery at troop and squadron levels, though absorbingly interesting, could not be discussed in detail for want of space. It is once again emphasised that in order to conserve our armour the tank versus tank battle should never be deliberately sought. Whenever forced to join in one, our armour should be trained to fight it out, but only until such time as would be necessary for the deployment of our tank-destroying teams in favourable positions. Once the tank destroyers are ready our armour should break off the engagement in such a manner that by clever manoeuvring the enemy tanks are led on to our tank destroyers for the final slugging match. These tactics require, on the part of the junior leader and the crew commanders, considerable skill, dash and initiative which can only be obtained by vigorous and well directed training.



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## Reserve Component Duty

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**T**HE contribution made by reserve component forces and individuals to the total war effort in the past is a matter of record and need not be elaborated. Full and active support by the active army establishment must be given to the peacetime training of reserve component elements in order to prepare individuals and units for immediate utilization if mobilization becomes necessary.

Reserve Officers' Training Corps, National Guard and Army Reserve Programs were reinstituted following World War II and large numbers of well qualified instructors and advisors of the various arms and services were assigned to duty with the reserve components. Later, in October 1948, the President of the United States signed Executive Order 10007 directing the utilization of every practicable resource of the regular components of the Armed Forces in the organizing, training and instructing of all reserve components.

At the present time, the number of officers assigned to reserve component duties is determined on a broad basis by the Department of the Army. Within the limits of these broad outlines, the number of officers required for reserve component duties is determined by the Army commanders who bear the responsibility for the training and instruction of the ROTC, National Guard and Army Reserve units located in their respective areas. Spaces for reserve instructors and advisors are allocated to reserve units by Army commanders from the total personnel authorized their Armies by Department of the Army. Selection and assignment of

officers to reserve components are made by career branches of the various arms and services, in response to requisitions received from the field. Officers on active duty desiring assignment to reserve component duty may, if they meet the requirements outlined in SR 600-145-20, apply through channels for such duty.

The tour of field grade officers assigned to reserve component duty is normally 36 months; company grade 12 months, with the exception of ROTC company grade instructors which is 24 months. However, if not needed to fill urgent overseas requirements, or military schooling, officers may be permitted to continue to serve on reserve component duty for periods up to one year beyond the normal tour.

In so far as practicable, it is desirable that Regular Army officers serve at least one tour of duty with one of the reserve components. However, such duty is not limited to regular army officers. National Guard and Army Reserve officers in the active military service are utilized in all reserve component instructor-advisor positions except as National Guard advisors in the state of legal residence prior to entrance on active duty.

Repetitive assignments to the same component or level of duty are normally avoided. Officers who are relieved from reserve component duty owing to exigencies of the service prior to completion of normal tours will be credited with completion of full tours. Reassignment of such officers to reserve component duty is not required; however, they may be reassigned to such duty if the needs of the service demand it.

The Army General Staff and high command gives full weight to the importance of the reserve as a major element of our armed forces. It would be well for any officer receiving a reserve component assignment to take careful stock of his qualifications. He can improve his record as well as raise the reputation of the officer corps among the civilian population. It is particularly important that officers selected for reserve component duties possess, to a high degree, certain qualities.

Some of these are:

1. *Respect the civilian status of*

*reservists.* Consideration must be given to the interests of the reservists when making demands which cannot be met without serious injury to their business, profession or personal relations. Most reservists do not resent this if it is obviously necessary.

2. *Professional knowledge.* Members of The Defense Team not on active duty expect the Army Advisor to be fully qualified in this respect. As one National Guard General Officer put it: "If you don't know more about military matters than I do, a lot of tax-payers' money has been wasted on your training."

3. *Personality and leadership.* On this type duty command relationship often is nebulous to non-existent. Application of the finest principles of leadership is necessary. Every act or utterance may influence people but will not necessarily make friends. Lack of tact and impatience in unimportant matters are certain to negate the efforts of otherwise qualified advisors.

4. *Outward manifestations of personal conduct,* such as temperance, careful selection of associates, impeccable grooming, attention to duty and other actions, enhance the prestige of the Army in local communities. This is particularly significant on the college campus where character is being molded.

5. This is a very delicate matter but the officer's *wife and family* must be considered. The wife's attitude toward and conduct in the community has a profound bearing on the husband's effectiveness. This is applicable to his children. Objectionable incidents involving other members of the family will materially nullify an otherwise outstanding performance record.

6. Finally, *standard of living and maintenance of credit rating.* An officer must maintain prestige of his position by an appropriate standard of living but he must live within his financial means.

So long as a major part of our military strength is in the reserve, civilian component duty will continue to be most important. Officers and enlisted men selected for reserve component duty must be capable of superior performance. The prestige of the Army demands it; the safety of our country requires it.



CARDED

## Mission and MAAG

### Duty

ONE of the most satisfying yet challenging duties is an assignment with one of the many United States Military Missions and Military Assistance Advisory Groups (MAAG's) scattered throughout the four corners of the world. Each day of such duty presents countless opportunity to demonstrate Americanism first hand by example and teaching and making more friends for the United States. Mission and MAAG personnel are in almost daily contact with the leaders of the government, diplomatic corps, and armed forces at the highest level of the country in which serving. Understandably officers selected for such assignment, and for that matter their families as well, must meet the most exacting and highest standards of professional attainments and social acceptance. In return for hard work and in some cases personal inconvenience there are many personal advantages that should be weighed carefully by officers when considering this type of duty.

Generally, the purpose of these organizations is to cooperate with the host governments with a view toward enhancing the efficiency of their armed forces. Specifically, the purpose of the Military Mission is to aid in the training of the armed forces of the host government. The purpose of the MAAG on the other hand is to administer the military assistance to the host country under the Mutual Security Program. This military assistance is in the form of military equipment, materials and services, which include technical and training assistance.

Each of the Missions and MAAG's is a team and positions are established

which will best provide the desired assistance for the host government. Many of the teams are composed of personnel from all branches of the service who provide inspiration, guidance and knowledge in their particular qualifications.

In meeting the officer personnel requirements of the Missions and MAAG's the branches of Career Management Division must consider them along with their other overseas requirements and, consistent with them, assign qualified officers who are both vulnerable and available for an overseas assignment and for whom this type of job is appropriate in their career development. Selected officers must be professionally qualified and possess the necessary personality, tact and judgment to represent the Armed Forces and the United States in a foreign country. Also, they must have sufficient remaining service to complete the prescribed overseas tour. In most cases the career branch makes the final decision on the selection of personnel, but in some instances they must be further nominated to the Mission or MAAG or presented to the host government for acceptance. Normally requirements are received and selections made three (3) to five (5) months in advance of the reporting date. In those cases where the replacement officer must be presented to and accepted by the host government or must be able to speak the language of the host country, requirements are received eleven (11) months in advance of shipping date to provide sufficient time for nomination and training of the replacement.

Many officers would like to know what they can do personally to achieve an assignment to one of the Military Missions or MAAG's. There is a special regulation, SR 600-175-5, dated 12 February 1951, which outlines the basic qualifications required for selection. Qualified officers interested in assignment should indicate their desires on the Officers Preference Card so that consideration can be given to their assignment at the time they become vulnerable for an overseas assignment. Also, those officers desiring one of these assignments may volunteer for such foreign service at any time prior to receipt of overseas orders by

making application under the provisions of AR 600-175. Upon being placed on the volunteer list, consideration will be given to their assignment according to stated preferences, although when they become vulnerable for foreign service in their normal turn, they automatically lose their volunteer status and are placed on the regular roster for an overseas assignment.

Only personnel selected for assignment to a Mission or MAAG in Central or South America must possess proficiency in the language of the host country. Those selected who are not language qualified are sent to the Army Language School, Presidio of Monterey, California, for a twenty-three (23) weeks course in Spanish or Portuguese prior to assignment to the overseas agency. In some cases officers receive this training at commercial language schools. Only in a very few instances is language proficiency required for assignment to other Missions and MAAG's; however, it is always desirable and whenever possible officers with demonstrated linguistic ability are assigned provided they are otherwise qualified.

On these assignments, authority for travel of dependents varies with local conditions in the host countries. The tours vary from one (1) to three (3) years based primarily on the local conditions. It must be remembered that in foreign countries there are certain inconveniences and discomforts which one must adapt himself to or overlook.

From a career standpoint, assignment to a Military Mission or MAAG may well be advantageous. All positions require ingenuity and ability. Some are for instructors and as such are similar to assignments on the staff and faculty of a service school. Other positions such as advisors to commanders and staff officers of units ranging from battalion to army size broaden one's vision and capacity. The opportunities are great for the individual officer and present a unique opportunity to be of service to the Army and the United States.

**With the publishing of these two articles, this series written by CMD personnel is complete. A new series will start in the Jan-Feb issue.**



## 65 Years Ago

These large bodies of cavalry charged across broken country for over a mile at a time, at a furious pace, keeping well together, and showing at the end a uniformity of power on the part of the horses delightful to cavaliers. I had scarcely an opportunity to judge of their effectiveness when dismounting and fighting as infantry, nor do they seem to attach much importance apparently to this art, in spite of the lessons taught by STEWART and SHERIDAN in the American civil war. However, in spite of the fact that great cavalry charges have been the features of the maneuvers this year as last, there is no doubt that the growing importance of moving troops rapidly to position, which receives a new impulse from the use of smokeless powder, will cause the Germans in the next war to illustrate the uses of mounted infantry for the first time in Europe.

*The German Grand Maneuvers Near Hannover*

POULTENEY BIGELOW

## 50 Years Ago

Frederick the Great, Gustavus Adolphus, and Charles XII of Sweden, relied more upon the sword than any other weapon for cavalry. Before their time it had been customary for cavalry attacking the enemy to ride up within short range, halt, discharge their pieces, sling them, and then draw their sabers and charge. These great leaders, with their radical changes, achieved great successes. With the crude fire arms of those times cavalry could be sure of having to face only one volley while charging the enemy (if cavalry), as the short range of their fire arms and the delay incident to reloading enabled the charging party to strike before the second volley; but with the increased range of fire arms and increased rapidity of breech-loaders, the conditions are again changed, and to such an extent that today it is hardly a question as to what would be the fate of a cavalry column exposed for any length of time to the long range and low trajectory of our modern arms. What may have been advisable in the past would probably be rank folly now.

*Cavalry Arms*

HENRY T. NOYES  
Colonel, U. S. Army

## 25 Years Ago

Constant study by the General Staff and practical experimentation at maneuvers carefully planned to give effect to these studies have fully demonstrated the desirability of a new major unit endowed with capacity for maneuver and speed of movement far superior to that of the usual divisions and corps. This unit in most cases will be pushed forward on the front of the field army. It should be able to secure to that army full freedom of movement until such time as contact is gained with the enemy main forces. And this unit must have the strength and firepower to remove any obstacles to its advance, such as enemy reconnaissance troops or hostile centers of resistance.

This corps cannot, therefore, be composed entirely of cavalry like the cavalry corps and divisions of pre-war days. It must have within its own organization all the other weapons which complement the action of the cavalry and allow it to be employed on its characteristic missions. Nor, on the other hand, can it be composed entirely of mechanized forces as many misguided enthusiasts have until recently advocated. Instead, it must be a balanced combination of the two—the natural result of the war-time union of the bersaglieri cyclists and the old cavalry corps, with the additional aid of the mechanical arms.

To this unit the Italian regulations give the name *Corpo Celere*. It is defined specifically as follows:

"The *Corpo celere* is a major unit composed principally of cavalry and cyclists, horse and mechanized artillery, tanks, armored cars, detachments of motor-carried infantry and motor-carried engineers."

Such a mobile force is unquestionably better able to oppose itself to the deadly modern weapons and is more suited to the conduct of present-day warfare.

*Il Corpo Celere*

AFREDO BACCARI  
Lt. Colonel  
General Staff

## 10 Years Ago

In many, many instances the physical condition of a soldier will spell the difference between life and death. Upon that premise thousands of soldiers will stake their lives, just as thousands will learn in the hard school of warfare—and many will die because of being a "bit soft."

In one phase of the Kwajalein Campaign I witnessed a scene which will long live in my memory. One early morning during February, 1944, I was leading my platoon of tanks to the front when we were stopped by an infantryman who needed some help on a pill-box. Just as I stuck my head out of the turret to hear what he had to say, a Jap, who had been very well concealed, arose on all fours and flew through the air in a manner that reminded me of a Marathon runner. As he dashed toward the infantryman, whose back was to the Jap and, incidentally, only 10 to 15 yards distant, my mind froze for a second. Simultaneously, the Jap raised a two-armed saber.

Desperately I pointed and yelled, "Behind you, behind you!"

Finally catching the meaning, the sod pusher turned swiftly and, firing his M1 rifle from the hip, in the same instant jumped to one side. When he fired, the saber was just beginning its downward arc toward his head or shoulder. As the Jap fell, his saber slashed through space and the infantryman fired another shot, then finished the Jap with a few bayonet thrusts.

If the infantryman had not been in good physical condition, he would not have turned fast enough, nor pulled the trigger in the right split second, and in a case such as that there is only a split second between life and death.

Good physical condition quickens thought and reaction; poor physical condition slows them.

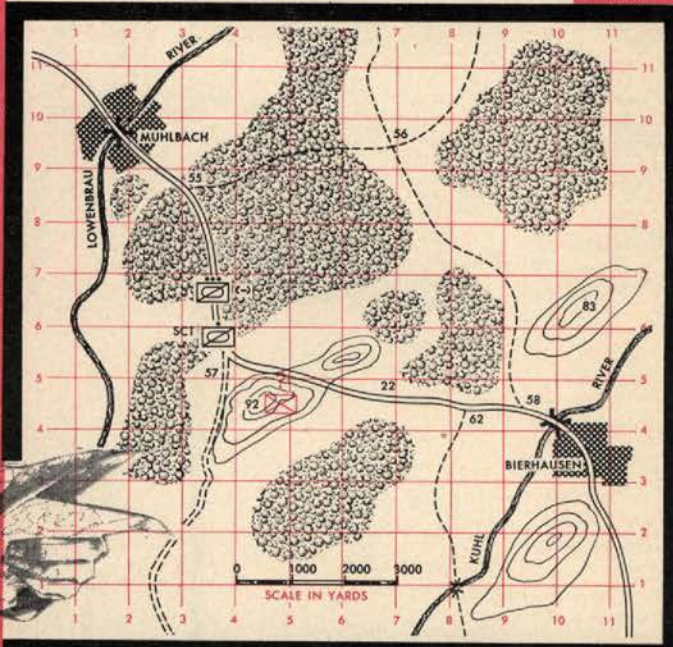
*Comments From Combat*

1ST LT. WILLIAM W. CHIPRIN



# "How would you do it.?"

AN ARMORED SCHOOL PRESENTATION



## SITUATION

You are the platoon leader of the Reconnaissance Platoon, 1st Tank Battalion. Your battalion has been exploiting a breakthrough and has encountered only light enemy resistance. The battalion is now halted in the vicinity of MUHLBACH and is being resupplied with gasoline and ammunition; it will continue the advance along HIGHWAY 22 in about one hour. The battalion commander has ordered your platoon to proceed immediately to BIERHAUSEN to reconnoiter and secure the bridge over the KUHL RIVER. Army aircraft have reported the bridge still intact. You are to determine the capacity of the bridge; or, if the bridge is destroyed or damaged when you reach it, you are to find a suitable fording site so as to ensure the uninterrupted progress of the battalion. You have issued necessary orders to your platoon and are now proceeding on your mission along HIGHWAY 22.

## PROBLEM

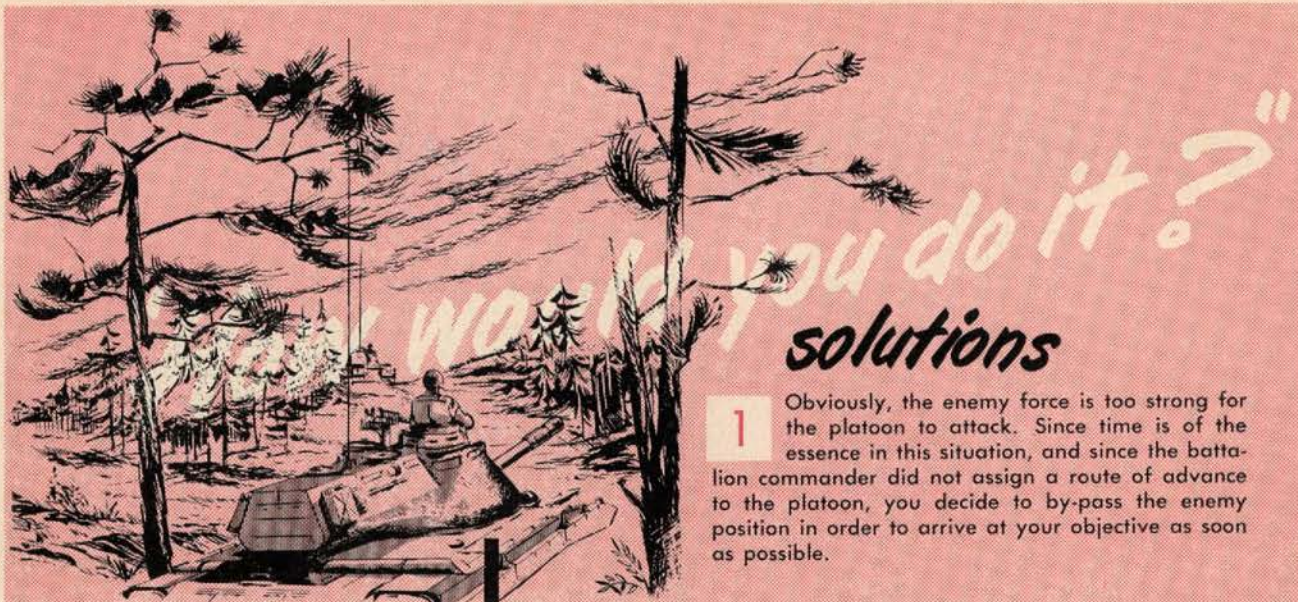
As your lead scout squad approaches RJ 57, it receives small-arms fire from HILL 92. The scout squad has withdrawn to a covered position, and you have joined the squad leader. A visual reconnaissance reveals one antitank gun and what appears to be a company of infantry dug in along the crest of the hill. What are your actions and orders at this time in order to accomplish your mission?



AUTHOR: CAPT ROY L. LILES

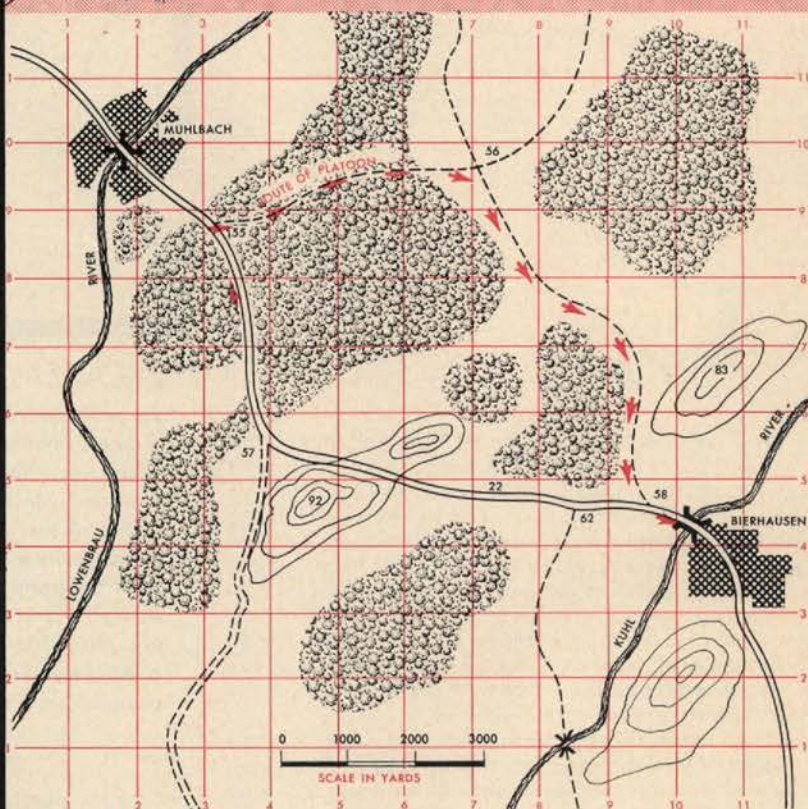
ILLUSTRATED BY: CPL HERBERT A. READE





**1** Obviously, the enemy force is too strong for the platoon to attack. Since time is of the essence in this situation, and since the battalion commander did not assign a route of advance to the platoon, you decide to by-pass the enemy position in order to arrive at your objective as soon as possible.

**2** Consulting your map, you decide to move your platoon to RJ 55, then east on the trail to CR 56, then southeast to RJ 58 and your objective. This route offers concealment from the enemy force and will allow the platoon to reach its objective in a minimum amount of time.



**3** You report the enemy situation and your proposed plan of action to the battalion commander by radio prior to executing your plan.



## General Hull Relinquishes AFCE Command

Secretary of the Army Robert T. Stevens announced recently that General John E. Hull, Commander in Chief, Far East Command and the United Nations Command, and the present Commanding General of Army Forces, Far East, relinquished command of Army Forces, Far East to General Maxwell D. Taylor, on November 20, 1954, at which time General Taylor moved his headquarters to Camp Zama, Japan. General Hull retained the overall command as Commander in Chief, Far East Command and the United Nations Command.

General Taylor, as the Commanding General, Army Forces, Far East and the Eighth Army, will combine the staffs of Headquarters, Army Forces, Far East and the Eighth Army into a single headquarters in a move to streamline the command structure, effect manpower savings and economy of operations.

The change, a part of the overall regrouping of United States forces to improve the US strategic position in the Pacific, places General Taylor in command of all ground forces in Japan, Okinawa and Korea.

## Unit Rotation Next July

The Army's new rotation system will start next July with the 10th Infantry Division from Fort Riley, Kansas, and the 1st Infantry Division, now stationed in Wurzburg, Germany, the first two of the Army's combat divisions selected for rotation, the Department of the Army announced recently.

Also selected for rotation during the same period are two airborne regimental combat teams, the 508th at Fort Campbell, Kentucky, and the 187th in Japan; and two armored cavalry regiments, the 3rd at Fort Meade, Maryland, and the 2nd in Nurnberg, Germany.

Under the new plan for overseas rotation the 10th Division will replace the 1st Division in Europe in three regimental combat team increments, the first combat team replacement to take place in July. A total of eight divisions are expected to be rotated each year—four sent overseas to replace four returned home. Nearly three years will be required to complete a rotation cycle of all divisions. The same pattern of rotation will be followed for selected separate regiments and battalions of the combat arms.

Termed Operation Gyroscope—rotation with stability—the new rotation system is essentially replacement of entire units overseas by like units from the United States, a radical departure from the present system of individual replacement. The new system is designed to

give greater stability to the career soldiers of the Army in the form of fewer moves, more settled conditions, and fewer family separations. The unit rotation plan will eliminate some of the present undesirable conditions of service and should improve unit pride and esprit. As part of the plan, each division will have a permanent State-side station to which it will return after its overseas tour.

The 3rd Cavalry Regiment, which traces its history back to 1846, went into World War II combat with the Third Army in Northern France as the 3rd Cavalry Group (Mechanized). Except for a short time when it was at Camp Pickett, Virginia, the regiment has been at Fort Meade since March, 1946. The 2nd Armored Cavalry Regiment dates its history back to 1836. During World War I it was the only United States Cavalry regiment to serve overseas as cavalry in combat. It saw active combat service in World War II, remaining in Europe after the war ended to serve on occupation duty.

## "Honest John" Rocket Units to be Deployed to Europe

The Department of the Army announced recently that several batteries of the Army's new long range artillery rocket, the "Honest John," will be deployed to Europe within the next few months for support of the military forces under General Alfred N. Gruenther. The units alerted for movement in accordance with a deployment schedule approved more than a year ago, are currently in training at Fort Sill, Oklahoma and Fort Bragg, North Carolina.

Preceded by the 280mm gun and the Corporal Guided Missile, the "Honest John" rocket is the third in the Army's arsenal of most modern weapons to be deployed to Europe. The batteries will be assigned to United States units to train and maneuver with NATO forces. This is another step in a long range plan to provide the most effective weapons for the defense of the free world.

## Chrysler to Make Redstone Guided Missile

With the award of an \$855,000 contract to the Chrysler Corporation recently, the Army Ordnance Corps has added the final touch needed to start limited production of the Army's experimental guided missile, Redstone, the Department of the Army announced recently.

The contract is a supplement to the previously awarded facilities contract under which Chrysler will tool up and otherwise adapt for guided missile production a portion of the Navy-owned jet engine plant in Warren, Michigan, located in the Detroit metropolitan area.

The new total for this preparatory work is approximately \$2,275,000.

Production of missiles by Chrysler, first venture of the corporation into this field, will begin as soon as practicable. The quantity to be produced has not been announced, but contracts covering development and production, already in the hands of the contractor, total more than \$22,000,000.

The Redstone guided missile was named for Redstone Arsenal, the Alabama installation where Army Ordnance designed and is perfecting the weapon.

Redstone is the Army's newest missile to come to public notice, though it is still under a security classification and none of its characteristics have been made known.

## Operation Frost Jet

Cold weather tests of NIKE, the supersonic anti-aircraft guided missile developed by the United States Army, will be conducted in Canada during January and February, 1955, it was announced recently by the Department of Defense at Washington and Canadian Army Headquarters at Ottawa.

Termed "OPERATION FROST JET," the tests are designed to determine the effects of extreme low temperatures on the complex component parts of the NIKE weapons system.

## U. S. Armor Pioneer Dies

Major General Charles L. Scott died at Walter Reed Hospital, Washington, on the 27th of November.

General Scott, a pioneer in the development of armor, organized the Second Armored Division in 1940, and was its first Commanding General. He next commanded the First Armored Corps. From 1943 until he retired in 1946, he commanded the Armored Replacement Training Center at Fort Knox.

## Army Awards Medium Tank Contract

A contract for \$160,601,200 worth of Patton M48 medium tanks has been awarded by the Army Ordnance Corps to the Chrysler Corporation, the Department of the Army announced recently.

The vehicles will be produced in the Chrysler Tank Plant at Newark, Delaware, a facility which produced the M48 tank until last July, and since then has been working on heavy tank and modification contracts.

The award was made after competitive proposals had been received from the American Locomotive Company; Fisher Body Division of General Motors, current builder of the M48, and Chrysler. The Chrysler proposal was approximately \$7,600,000 lower than that of the next bidder.



Scheduled to begin production in June, 1955, Chrysler will have eight months to prepare for output. Concurrently, the Fisher plant will continue at present production schedule until at least June 1, 1955. This will permit an orderly transition of the work, with minimum interference with the flow of materials from subcontractors and suppliers.

Important among subcontractors and suppliers is the Continental Engine Company of Muskegon, Michigan, who will furnish the specially designed Ordnance-Continental Engine used in the M48 medium tank, as well as a number of other combat vehicles.

### Self-Propelled Gun Vehicle Contract

A contract for the manufacture of approximately \$35,000,000 worth of M42 twin-40mm self-propelled guns was signed recently by the Army Ordnance Corps and the Cadillac Division of General Motors Corporation.

The vehicles will be produced at the Cleveland Tank Plant. The work, a continuation of a contract now in effect, will be accomplished between June, 1955, and May, 1956.

The M42 is a sister vehicle to the M41 light tank which was also produced in the Cleveland Tank Plant. The two vehicles use many of the same components and can be produced on the same assembly line.

### Armored Personnel Carrier Contract

More than \$26,500,000 worth of M59 Armored Infantry Vehicles will be manufactured for the Army Ordnance Corps by the Food Machinery Corporation, it was announced recently by the Department of the Army.

The contract calls for production of vehicles between June, 1955, and May, 1956. They will be produced at the San Jose, California, plant of the Food Machinery Corporation under a fixed price contract.

The M59 is the successor to the M75 "Lifesaver" which earned fame in Korea for safely evacuating troops under enemy fire.

### 2d Armored Division Association Reactivated

After a dormant period of several years the 2d Armored Division Association was again activated. Former members of the famous "Hell on Wheels" Division gathered in New York City on the 12th of November to once again start up this proud organization. More than 200 members were in attendance.

Present were Generals Crittenger, Brooks, Harmon, Hobbs, and Semmes. Also in attendance were Ambassador to the United Nations Henry Cabot Lodge, and 2d Armored Division Congressional Medal of Honor winner Captain Hulon Whittington. Captain George S. Patton III represented his family at this meeting. The Patton family have long been

held in high esteem by members of the 2d Armored Division. Many of these distinguished gentlemen spoke at this initial meeting. Mr. Lawrence A. Cabot of New York City was elected President and J. Gibson Semmes of Washington, D. C., Vice-President.

For members of the 2d Armored Division, either past or present, the yearly dues are \$3.00. The temporary address of the Association is—The Secretary, 2d Armored Division Association, 1727 K Street, N.W., Washington 6, D. C.

### 30th Armored Division Organized

The 30th Armored Division, Tennessee National Guard, was organized in that State on the 11th of October. This is the Division allotted to Tennessee, and reported in ARMOR NEWS NOTES last issue, subsequent to the relief of the 44th Infantry Division from active military service.

The Commanding General of this newest National Guard contribution to the mobile arm is Major General Paul H. Jordan, who formerly commanded the 30th Infantry Division. General Jordan has requested that two-week refresher courses be set up at The Armored School, during the last two weeks in November and the last two weeks in January for senior officers of the division. It has been recommended also that a mechanics course for caretakers be arranged.

### NATO Chief Reports On Soviet Military Might

Gen. Alfred M. Gruenther said recently in London the "military potential of the Soviet bloc is increasing constantly."

The supreme commander of the North Atlantic Treaty Organization (NATO) told a London audience the effectiveness of Soviet forces was "going up considerably," although their size still was approximately the same

as when Gen. Eisenhower took over NATO command four years ago.

"What is going to be done with these forces we don't know," he said. "We are certain the only thing for the West is to build forces which will make aggression impossible or at least unprofitable."

NATO forces, he continued, now are three to four times as large as when NATO was first established and from the standpoint of effectiveness are "more powerful still." But, he added, the West still lacks enough strength to meet an all-out aggression.

When West German troops join NATO, Gen. Gruenther said, "we shall feel we shall have a reasonably good probability of being able to defend Western Europe against an all-out act of aggression."

Gen. Gruenther gave this picture of Soviet bloc forces:

The Soviet Air Force numbers about 20,000 planes, half of them fighters. But, while in Gen. Eisenhower's time 1,000 of the fighters were jets and the rest propeller driven, the ratio today is about reversed and all but approximately 500 are now jets.

In addition, the Soviets are making constant advances with modern weapons, atomic weapons and guided missiles.

The divisional strength of the Russian satellite countries has increased from approximately 50 to between 70 and 80. The figures include seven East German divisions. Satellite air forces also have increased considerably, but Gen. Gruenther gave no figures.

### The 27th Armored Division

It has been reported that the 27th Infantry Division, New York National Guard, will soon be converted to Armor. This will bring the total National Guard Armored Divisions to 5 out of 27, the total number of divisions allotted to the National Guard.

## TOP COMMAND CHANGES



U. S. Army  
Lt. Gen. Bruce C. Clarke  
Commanding General, USARPAC



U. S. Army  
Maj. Gen. Thomas W. Herren  
Commanding General, First Army



### Former Panzer Leader Dies

Field Marshal Ewald Von Kleist, World War II panzer leader, died recently in captivity in the Soviet Union, the East German government news agency ADN announced.

The German militarist was considered a master of the blitzkrieg technique of warfare. He engineered the 1940 break-through in France with an army consisting entirely of tanks and motorized infantry. He broke through the allied defenses at a 50-mile gap that extended through the Ardennes. The difficult terrain there was considered so insurmountable that the French had not provided an adequate defense for that region.

Marshal Von Kleist overcame difficult ground again in Yugoslavia when he led a mechanized army into Belgrade. Afterward he was on the Russian front commanding German Ukrainian divisions during the summer of 1941. He led the forces across the Dnieper on a 75-mile front and fought north, bringing about a pincer movement that caused the Soviet army to give up Kiev.

After laying siege to Sevastopol he crossed the steppes toward the Caucasus and took Rostov. He lost Rostov to the Russians, then recaptured it and in 1944 he was reported replaced after the Russians took the offensive once again.

Without command until the end of the war, Marshal Von Kleist was taken prisoner by the American Army, and later extradited to Yugoslavia.

### Ordnance Weapons Command

The Department of the Army announced recently that an Army Ordnance Weapons Command will be established with headquarters at Rock Island, Illinois, effective January 1, 1955.

Major General E. L. Cummings, Army Chief of Ordnance, said that this action provides a single field command assigned the responsibility for direction of the development, procurement, production, maintenance, and major aspects of supply management of many of the complex weapons systems which have become an essential part of the Army.

Under this plan the Weapons Command will be responsible for the wide range of small arms and artillery weapons, from the pistol and rifle through machine guns and mortars to heavy artillery such as the Army's latest 280mm cannon.

"These Arsenal," General Cummings said, "have been developing the engineering skills in the weapons field which have helped our soldiers maintain fire superiority over the enemy in every war since the War of 1812.

"Progress in weapons development will always be dependent primarily on the continued devotion to this cause by these Arsenal and their employees."



U. S. Army  
The new Sniperscope is an improved version of the World War II model. It has a longer range, more rugged construction and a more accurate aiming device.



U. S. Army  
The M76 amphibious cargo carrier, the "Otter," is capable of traversing almost any type terrain at speeds up to 30 mph. It has a 135 horsepower engine.



British Information Services  
The World's first gas turbine tracked vehicle, this British development is capable of 1,000 horsepower with a speed of 17,500 revolutions per minute.



Reviews  
Best Sellers  
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# THE BOOK SECTION

## FROM 500 B.C., STRATEGY BY THE DIRECT OR INDIRECT APPROACH

**STRATEGY.** By B. H. Liddell Hart. Illustrated. 420 pp. Frederick A. Praeger, N.Y.C., N.Y. \$5.95.

Reviewed by  
LT. GEN. I. D. WHITE

**C**AMPAIGNS and battles from 500 B.C. to include World War II analyzed to prove a theory—the theory of the indirect approach in strategy—this is

—The Author—



U. S. Army  
B. H. Liddell Hart has authored or edited approximately thirty books. He is well known throughout the world as a famous military analyst. He has been the military correspondent for several leading English periodicals and the military editor of the Encyclopedia Britannica. Prior to STRATEGY he edited the famous book entitled THE ROMMEL PAPERS.

the latest and monumental work of B. H. Liddell Hart. No stranger to military students nor to many casual readers, B. H. Liddell Hart has produced in *Strategy*, a thought-provoking but less controversial volume than some of his previous efforts.

Military strategy is not a new field for Liddell Hart, a former Captain in the British Army,<sup>1</sup> as ARMOR readers know. The British Army has, in the past, practiced his strategic, tactical and training doctrines and adopted many of his suggested reforms. He has championed "mechanization of armies, the development of armored forces and of airpower." He has advised newspapers, *The Encyclopedia Britannica*, and the Cabinet on military affairs.

The 30-odd books of this acknowledged military historian, analyst, theorist, and biographer are marked by unswerving convictions and a zealot's fervor.<sup>2</sup> Liddell Hart has been criticized for lack of reserve, for rationalizing theories, for sweeping judgments. Others praise him for shrewd perception, great enthusiasm, the facility for dispassionate inquiry. I cannot help but note that one of Guderian's gods was Liddell Hart, whom he considered the best analytical brain in the business. Perhaps it is Churchill who best rates the man: "Captain Liddell Hart has immensely stimulated technical and professional thought."

*Strategy* will certainly stimulate

thought. Here Liddell Hart (1) theorizes that the approach of strategy is either *direct* or *indirect* and (2) concludes from historical analysis that the *indirect approach* is by far the most hopeful and economic form of strategy. This is the heart of *Strategy*.

To understand the inclusiveness of the word "indirect" as used by the author, you must first have his concept of strategy. The object of strat-

(Continued on page 54)

—The Reviewer—



U. S. Army  
Lieutenant General I. D. White, a distinguished Armor leader, has been identified with the mechanized mobile arm since its conception in the 1930's. At the end of World War II he commanded the Second Armored Division in Europe. Since the war he has commanded the X Corp in Korea. He is presently commanding the Fourth Army.



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payment accompanies order.

## "OLD IRONSIDES"—A CHRONOLOGICAL HISTORY OF ARMOR

**THE BATTLE HISTORY OF THE 1st ARMORED DIVISION.** By George F. Howe. Illustrated. 471 pp. Combat Forces Press, Washington, D. C. \$6.50.

Reviewed by  
**MAJ. GEN. ROBERT W. GROW**

**I**T is refreshing indeed to find a division history that is devoted to a complete factual account of military action with-

out the "flag-waving" and superlatives too often encountered. Although well-chosen individual acts of gallantry and noteworthy achievements in leadership enliven the book and emphasize the human factor in machine warfare, the volume as a whole is a recitation of military operations by specific military units told in military, but not technical, language. There is no hesitancy to record failure. The enemy side, based on careful research, is fully presented. These combine to leave the reader satisfied that he has gained a true and complete picture.

Although each major action is illustrated by a sketch map, these are quite inadequate in detail to do justice to the related text. This is particularly unfortunate for the military student who finds in the text a detailed order of battle, vivid terrain and situation descriptions and must then interpolate or guess at map locations necessary to a complete picture or clear conclusion. The African operations are mapped better than the Italian ones but still fail to include many place names, key terrain features or even areas critical to the story.

The illustrations are well selected and annotated. They cover personnel, equipment, representative terrain and important operational incidents.

The reader is inspired with confidence that here he finds an accurate record of the first American ex-

perience in armored warfare, of the birth in battle of a new arm and of failures and successes that enabled Armor to establish a firm basis for its role as the "arm of decision" in ground warfare. Whether a veteran of "Old Ironsides," a military student or simply an interested citizen, the reader will be well rewarded by this history. Mr. Howe is a qualified historian as well as a clear and interesting writer.

(Continued on page 57)

—The Author—



U. S. Army  
Doctor George F. Howe, former head of the Mediterranean Section of the Office of the Chief of Military History, Department of the Army, received his Doctorate from Harvard University. During World War II he was with the Historical Branch, G2 Section, Department of the Army. He is presently engaged in historical work for the Department of Defense.

—The Reviewer—



U. S. Army  
Major General Robert W. Grow, Retired, has been associated with mobility throughout his entire Army career including many years of service with Cavalry. He assisted in the shaping of Armor policy throughout its formative years. During World II he was the Commanding General of the Sixth Armored Division, Third Army, serving in Europe.



## STRATEGY (continued)

egy is to achieve national aims at the lowest possible cost. A victory without bloodshed would indicate the ultimate in successful strategy. It is important that the winner survive the test of battle with sufficient remaining strength to insure that he can profit from the peace. When both sides (or perhaps one should say: when all participants) in a war exhaust themselves, they are likely to find that the situation becomes dominated by the bystander or even by the losers, if they are able to recover first. So the author argues that employment of good strategy will insure

livery of a decisive blow practicable." Liddell Hart seeks to demonstrate that the enemy's psychological and physical balance must be dislocated to insure his defeat. He believes that "moral dislocation" refers to the "moral dislocation" of the enemy's rulers and leaders which, when it occurs, will be automatically transmitted to the enemy fighting forces. His analysis of the major wars of history indicates that this dislocation, either through accident or design, has been caused by a strategic indirect approach.

History is used to develop these views; thus the book is more than a

prehensive, yet brief, outline.<sup>3</sup> As far as the mechanics are concerned, suffice it to say that Liddell Hart has divided this 400-page book into four parts, each of which has several chapters. And I suggest that by commencing with Part IV, the reader may be much better prepared to follow the author's points and theories in the first three parts of the book.

### Fifth Century B.C. To Twentieth Century A.D.

Part I spans the Fifth Century B.C. to the Twentieth Century A.D. It covers thirty conflicts or more than two hundred and eighty campaigns. In only six of these campaigns—those which culminated at Issus, Gaugamela, Friedland, Wagram, Sadowa, and Sedan—did a decisive result follow a plan of direct strategic approach to the enemy's main army. The author concludes accordingly that the indirect is by far the most hopeful and economic form of strategy.

He further concludes that history shows that a great captain, rather than resign himself to a direct approach, will take even the most hazardous indirect approach—if necessary, over mountains, deserts, or swamps with only a fraction of his force even cutting loose from his communications. Natural hazards are inherently less dangerous than fighting hazards. All conditions can be more easily calculated and all obstacles are more surmountable than those of human resistance.<sup>4</sup>

Part I fails to mention either the American Revolution or the Spanish-American War. Only nine pages are devoted to the American Civil War, compared to about thirty on the French Revolution and Napoleon Bonaparte. Liddell Hart credits Sherman's Western operations as leading to the Confederacy's collapse. He also believes that Sherman's method of advance against Atlanta and his subsequent movement northward (i.e., cutting loose from communications and operating with several very mobile columns on a wide front) was a forerunner of Panzer Force tactics.

It is also apparent from Part I that the author does not regard Napoleon Bonaparte highly. He believes Napoleon, as his resources grew, relied more on mass than mobility, on direct crushing tactics rather than deception and surprise. When his ene-



Library of Congress

The battle of Issus brought a decisive result by the direct approach.

the victor strength to dominate the peace and consolidate his gains. Good strategy thus means economy of force assured by what Captain Liddell Hart calls the strategic "indirect" approach.

As regards *strategic indirect approach*, it is of more than passing interest that the author included an observation by Lenin that "the soundest strategy in war is to postpone operations until the disintegration of the enemy renders the delivery of the mortal blow possible and easy." This the author feels was a vision of fundamental truth, but is not always practicable. A better adaptation he believes to be: "The soundest strategy in any campaign is to postpone battle and the soundest tactics to postpone attack, until the moral dislocation of the enemy renders the de-

work on military strategy. It is a textbook for one seeking to study history's great campaigns and battles. The author may have assumed a detailed and comprehensive knowledge of history—especially ancient and medieval—which many readers do not possess. Even if unfamiliar with the basic points at issue, such readers can glean some interesting facts concerning the development and application of military tactics. I cannot recommend this book for the casual reader who may be looking for interesting sidelights or anecdotes about famous leaders. Nor is it a book likely to be used by the average junior officer to prepare his organization for army training tests.

Since *Strategy* is in essence a textbook, it is difficult to present a com-



mies refused battle on his terms, Napoleon displayed fatal impatience, proceeding to direct strategical and tactical operations with frequently disastrous results.

### World War I

Part II deals with the strategy of the First World War. I have never read a more brief, yet comprehensive and illuminating summary of this struggle.

Liddell Hart finds few examples of the strategic indirect approach in World War I. There were numerous instances of effective tactical surprise; but mostly the approach was so direct that psychological dislocation, so necessary to complete defeat, could not be established. Stalemate in the land battle resulted from triumph of the defense over the direct offense. Once the great trench barrier was established, the indirect strategical approach could never again be employed on the Western Front. It appeared again in Allenby's Campaign in Palestine, in the Balkan Theater, and in the curious Arab Revolt<sup>6</sup> conducted by Lawrence.

The author considers the Allied Blockade of Germany as a true strategical indirect approach: But for the revolution by the semistarved German people, the German Army could have stood firm on its own frontiers. The revolution resulted from the people's loss of faith in their rulers, who had finally lost faith in themselves.

Though rating the blockade as the most effective cause of Germany's surrender, he indicates that military ground strategy was the decisive factor. The original Schlieffen Plan, even if carried out, would have failed. The greater strength required on the right flank could not have been supplied, primarily because of lack of railroads and disruption of permanent supply lines caused by the effective demolitions of the retreating Belgians and British.<sup>6</sup>

Captain Hart also allows himself a few "ifs." For example, he believes that if, after the Marne or even later, Germany had adopted defensive war in the West and concentrated on offensive war in the East, *Mittel Europa* might have been consummated. With all of Central Europe under her control and Russia knocked out, a profitable peace might have been



Sherman's march to the sea was a forerunner of Panzer tactics.

Library of Congress

obtained from a tired France and Britain, especially before the United States entered the picture.

### World War II

Part III covers the Second World War. It emphasizes Hitler's strategy and briefly pays tribute to MacArthur's strategy of bypassing, leaving Japanese garrisons in a state of strategic internment.

Liddell Hart believes that Hitler's initial strategy gave new extension to the indirect approach. It differed from orthodox German military thought, which for the past century concentrated on Clausewitz's view: "Only great and bloody battles can produce great results." Hitler declared: "How to achieve the moral breakdown of the enemy before war has started—that is what interests me."

Hitler used his strategy logistically and psychologically, both in the field and in his writings and speeches. By a series of practically bloodless maneuvers carried out under a propaganda smokescreen, he not only destroyed French domination of Central Europe and strategic encirclement of Germany, but reversed it in his own favor. He forced his commanders to adopt new tactical concepts, producing psychological and moral dislocation of the enemy. His forces—tanks, dive bombers, and paratroops—spread confusion and disrupted communications, bypassing resistance and avoiding masses of enemy troops. Frustration at their inability to employ their own more numerous forces in massed battles was a psychological factor contributing to the early defeats of the Allies.



First American troops to reach the Rhine during World War I.

Library of Congress



Discussing Hitler's decline and defeat, the author argues that Hitler, like Napoleon, was unable to conduct war while keeping in mind the kind of peace which must follow. He could not assimilate his conquests. This deficiency early began to undermine his conquests and armies. As greater opposition developed, he could not cope with the requirement for defensive actions. His offensive flair and earlier success led him, as Napoleon, to believe that the offensive offered a solution to all problems.

While Hitler's initial conquests were won almost entirely on his own planning and concepts applied over his Generals' strenuous objections, his failure to heed them when they urged retrenchment and a mobile defense as the situation worsened and his insistence on a static defense and even resumption of the offense contributed to his final defeat.

### Fundamentals

In Part IV, Captain Liddell Hart departs from the historical and under the title "Fundamentals of Strategy and Grand Strategy" develops a number of axioms, defines some of the terminology used earlier in the book, and devotes considerable space to a discussion of Clausewitz and his theories.

He feels that the latter has exerted an undue and unfortunate influence on military policy and theory, especially since much of his writing has been misinterpreted. He says the Clausewitz gospel incited Generals to seek battle at the *first* opportunity, instead of creating an *advantageous* opportunity. And further, that failure to understand and properly evaluate the Clausewitz teachings largely influenced the character as well as the fundamental causes of World War I. Thereby, in his words, it led on, all too logically, to World War II.

The author has changed his pre-World War II opinion of the value of air power to accomplish what he then referred to as striking at "a nation's nerve center—its static civil centers of industry." As a result of re-examination of what was accomplished by "strategic bombing," or what he now prefers to call "industrial bombing," he feels the results fell far short of what was being claimed by those responsible for conducting it. There was exerted an ex-

remely detrimental effect, he believes, on the postwar situation. Lasting social and moral effects resulted which inevitably endanger the relatively shallow foundations of civilized life. "That common danger," he continues, "is now immensely increased by the advent of the atomic bomb."

This slight reference to atomic warfare—the only one in the book except for a brief discussion of the H-bomb in the preface—seems especially curious since he devotes considerable space in his final chapters to the strategy involved in the "National Object and Military Aim," "Grand Strategy," and "The Concentrated Essence of Strategy." Certainly, no complete coverage of these subjects can avoid consideration of the effect of atomic warfare on strategy of the future, however horrible, repugnant, or distasteful it may be.

### Conclusion

Liddell Hart has stressed the importance of high speed mechanized warfare. He believes that the mobility and flexibility of mechanized forces have revolutionized warfare and changed the course of world history and have endowed the indirect approach with greater potentialities than ever. One cannot argue with the importance attributed to the development and accomplishments of the art of mechanized mobile warfare.

However, there is a question in these days of potential thermonuclear warfare whether the strategical or tactical indirect approach will ever again be possible. This country's present policy of "massive retaliation" against aggression affords scant opportunity for any degree of subtlety in its execution. Even the employment of tactical atomic weapons is based on a theory of applying the overwhelming force of these weapons directly against the enemy's main forces and supporting installations.

It is clear that new factors in warfare—new weapons—can create situations causing the psychological and moral dislocation of the enemy more easily and effectively than the strategic disposition of one's troops. The art of maneuver may well become lost and unnecessary. Nevertheless, requirement for strategic and tactical mobility continues to be greater than ever, for exploiting as well as defending against atomic weapons. The

ability to achieve rapid concentration at the desired point both offensively and defensively remains one of the great assets of modern mechanized forces.

It seems little short of incredible to me that this book could evade discussion or consideration of atomic warfare. The potentialities of new weapons, as always, have forced the development of new strategic and tactical concepts. Perhaps there are few lessons from history applicable to these new concepts.

Whether or not this is true, *Strategy* remains a textbook that the student of military history should study before proceeding to more detailed works on the campaigns and battles of the ages. Liddell Hart has shown that failure to understand and apply certain strategic and tactical principles has caused disaster to great Generals from before 500 B.C. down through World War II. A knowledge of these principles may well be helpful in the future, since the horrible potentialities of atomic weapons may well preclude their use by either side. In that event, Generals will need to know something more than the KT yield of their super weapons.

<sup>1</sup>World War I cut into his days at Corpus Christi College, Cambridge. He was commissioned in 1914, shipped to France, wounded and gassed. He was placed on half-pay status in 1924 and retired in 1927.

<sup>2</sup>Liddell Hart himself is not sure of the origins of his interest in the military; he has commented: "... from boyhood I developed a keen interest in military affairs and used not only to play but to invent various types of war games. It was their tactical and strategical side that particularly appealed to me."

<sup>3</sup>In his letter forwarding this review, General White wrote: "In reading and studying the book, I marked interesting or unusual passages as well as novel and thought-provoking conclusions and observations by the author. When I had finished, I found I had marked up nearly every page!"—Ed.

<sup>4</sup>Although not mentioned by Liddell Hart, every campaign of Nathan Bedford Forrest was based on this strategic as well as tactical concept. But Hart has never evidenced much interest in the campaigns on the North American continent. He has, however, written a most interesting work on Sherman, whom he considers the outstanding strategist of the American Civil War.

<sup>5</sup>This was an extreme but effective and economical form of indirect approach.

<sup>6</sup>This conclusion may or may not settle the long debate over Moltke's much condemned subtractions.



## 1st ARMORED (continued)

"Old Ironsides" is the history of a division which the author aptly calls a family of units. It does not dig deeply into the reasoning and planning behind the larger picture except for references that are necessary background to division operations. It leaves the reader in serious doubt as to the reasons behind many orders and schemes of maneuver. It is the intention of the book, however, to tell what the division did and, to a certain extent, why. This it accomplishes. The military student is certain to ask why the division was ordered to carry out some missions, why it was ordered to carry out other missions in a certain way, and why it was often treated more as a replacement depot than as a tactical entity. The inescapable conclusion is that no senior American commander sufficiently recognized the capabilities and limitations of Armor to properly exploit the advantages inherent in the arm. These had to be learned the hard way. They finally became more apparent in the final days of the Tunisian campaign, were lost again in the Italian mountains to emerge only in the valley of the Po. It is not so much that Armor cannot fight in mountainous terrain, because it can fight well, as repeatedly shown in this narrative. It is rather that Armor is most effective when employed as a coordinated mobile mass. It loses the greater portion of its effectiveness when dissipated among less mobile elements.

Early history of Armor and the birth of "Old Ironsides" is outlined in the introductory chapter. This is necessarily brief, being beyond the scope of a combat history. In the case of the 1st and 2nd Armored Divisions, however, the developmental stages are particularly important. These two units were organized on the same days, the culmination of ten years of heartbreaking development against tradition-bound reaction. It is hoped that a future history will do justice to the struggles of the pioneers, particularly during the period 1930-40. For it was during this time that organization, equipment, and tactical doctrine broke away from the World War I concept of tanks, and blossomed into a full-fledged basic combat arm, to be battle tested initially by the 1st Armored Division. The



Fort Knox, 1940.

U. S. Army



Tunisia, 1943.

U. S. Army



Anzio, 1944.

U. S. Army



author mistakenly names Colonel Bruce Palmer as the regimental commander of the 1st Cavalry when it was mechanized, overlooking General Van Vorhis who not only took command of the 1st Cavalry at Marfa, bringing it to Fort Knox, but earlier developed the basic ideas of a mechanized force of all arms at Fort Eustis in 1930-31 and later was the first commander of the fully organized 7th Cavalry Brigade in 1936. Colonel Palmer commanded the 1st Cavalry (Mechanized) from 1934, relieving the then Colonel Van Voorhis

the Afrika Korps as a united battle tested division, organized and equipped as it was in the later stages in Italy, and under a bold high command, it is not difficult to imagine that its success would have been far greater and, in a theatre more suited to its employment, would have contributed to an earlier decision. "Old Ironsides" was a guinea pig. The individual units and improvised commands performed valiantly and, for the most part, successfully, and their experience was of inestimable value to later divisions.

theless most instructive. Combat Command B participated in the assault landing and capture of Oran, an experience shared by only one other armored division—the 2d—at Casablanca. The landings were carried out at a time when our equipment and technique for such operations were in their infancy. The capture of Oran was a fitting prelude to the many diverse and unusual situations that arose in Africa for which previous training had not fully prepared the division. The speed of encirclement of Oran and the combat power shown by CCB were major factors in the quick collapse of French resistance and gave early promise of the decisive influence of Armor. The discouraging sequel that followed in the abortive attempt to seize Tunis quickly was not any fault of Armor or of the division. CCB's actions in the Tebourba area and in Ousseltia Valley, the division's operations in the Gafsa-Sened-Makaassy-Faid Pass area and Kasserine Pass, where commands and task forces of varied strength and composition operated alone and in conjunction with American, British and French forces, all combine in a fascinating study of warfare in which maneuver, although not unlimited, was a major factor and Armor could play a decisive role. The wide variety of situations and alternating offensive and defensive missions make the Tunisian campaign worth the detailed description given.

The second half of the volume is devoted to Italy. Here the division was thrown into a mountain dog-fight where Armor but not mobility was a priceless asset. The detailed account of the bitter fighting south of Rome and at Anzio during late 1943 and early 1944, the quick short thrust through Rome followed by the long struggle for the Gothic Line illustrate the need for tanks, self-propelled artillery and other mechanized means to support infantry in a restricted operation in difficult terrain. Glaringly clear, however, is the lesson that a large, self-contained armored command is wasted where there is no opportunity to exploit mobility. Had the situation permitted the prompt landing of an armored corps on the Anzio beachhead there is little doubt of its decisive effect. But we had no armored corps in World War II



Pisa, 1944.

U. S. Army

whose efforts and far-sighted vision were reflected in the operations of the division even though the men and officers who served in Africa and Italy may never have known him personally.

The 1st Armored Division served in two theaters, North Africa and Italy, each of which presented different problems. From the point of view of reaping the maximum benefit from Armor, it is too bad that the campaigns were not reversed. The untried division with markedly inferior equipment, hopelessly split up and serving under a series of untried, if not uncertain, commands was initially thrown piecemeal into the African theatre where it floundered for months. Had it been fated to meet

The African campaign is not only a well-told story but a fruitful source of study. The author includes sufficient higher command plans and decisions to clearly indicate a lack of understanding of the most effective method of employing Armor as well as an undeserved lack of confidence. The reader is often amazed at the results attained in spite of faulty equipment, organization, and direction. It is a splendid commentary on the excellent basic training and indomitable spirit of the armored personnel. The last phase of the Tunisian campaign afforded the division its best opportunity. Here its operations as a unit afford a refreshing contrast to the frustrations of the early months. The latter are never-



and single divisions, especially organized as they then were, lacked the power to sustain themselves long beyond the support of Infantry. It seems to this reviewer that the great lesson of Anzio is that any envelopment, whether by land, sea, or air, must include sufficient mobile forces to reap the advantage of the surprise gained by the maneuver. In ground combat this can only be accomplished by an armored force. By the time General Harmon's depleted division landed at Anzio the beachhead exits were firmly blocked, mobility was chained. It is useless to theorize on whether a single, complete armored division could have led a drive from the beach to the vulnerable rear of the German Tenth Army but history teaches us that the odds favor an aggressive commander who possesses a force with combat mobility and achieves surprise.

In Italy the division had more opportunity to operate as a unit and acquitted itself well, both offensively and defensively. Detachments made all too frequently to reinforce other commands attested to the confidence of corps and higher commanders in the fighting quality of the units, but seriously depleted the division at crucial periods, and prevented reaping the advantages of homogeneous training. The division was also frequently reinforced by detachments from other divisions, chiefly Infantry and Artillery, well illustrating the lack of organic balance in the old armored organization. This tended to result in the 1st Armored Division fighting basically as an infantry division heavily reinforced by tanks. The nature of the Italian campaign and its restricted terrain, together with limited troop availability, afforded no other solution. The great potential of mass mobility, inherent in Armor, could not be exploited short of the valley of the Po.

From time to time the factual account, interestingly written as it is, is enlivened with first person anecdotes from the fox-hole level which give the thrills of realism. An artillery forward observer writes of action on Mt. La Difensa in early December 1943.

"Most of this acre had a few bare

inches of soil. Under it was rock. A slit trench was impossible to dig. . . . One of our artillery observer party found a garbage sump used by the Germans five feet deep and six by six square. It was a natural for the four of us. . . . The men jumped in, scratched and kicked a little dirt over the garbage and over a dead goat, and set up the radio. . . . (Climbing and crawling over the mountain side in the darkness the observer pulled in adjusting rounds of white phosphorus to set up concentrations to meet expected counterattack.)

asked what the score was. . . . Men began to report in that it was all over now. I asked if anyone had been hurt by the artillery. Everyone was excited about it and when they recognized me they said that was the real McCoy."

"Old Ironsides" holds a unique place in our military history. Aside from its "firsts" of which it has a large share, it was our only armored division to fight outside of the central European theater. Therefore we learn much of the problems that may await Armor in less familiar terrain.



To the Po, 1945.

U. S. Army

"I admit I was worried. There seemed to be no stopping the Germans. . . I decided to make one big jump with our guns and bring the fire right in front of us on two sides. . . . I recalled artillery instructors in the past having said: 'Be bold. Make a good jump. Get a bracket.' The only trouble was that we were on the other side of the bracket. . . . The shells sounded as if they would fall right on us. . . . I expected men to come running and yelling: 'For God's sake, cease firing. You are blowing up all our men.' Nothing like that happened. . . . I called for all H.E. and no more W.P. The noise became terrific. . . .

"When the firing ceased I ran over to the Colonel's place and excitedly

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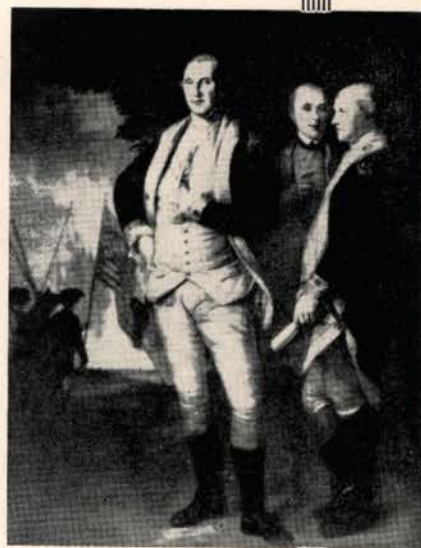


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