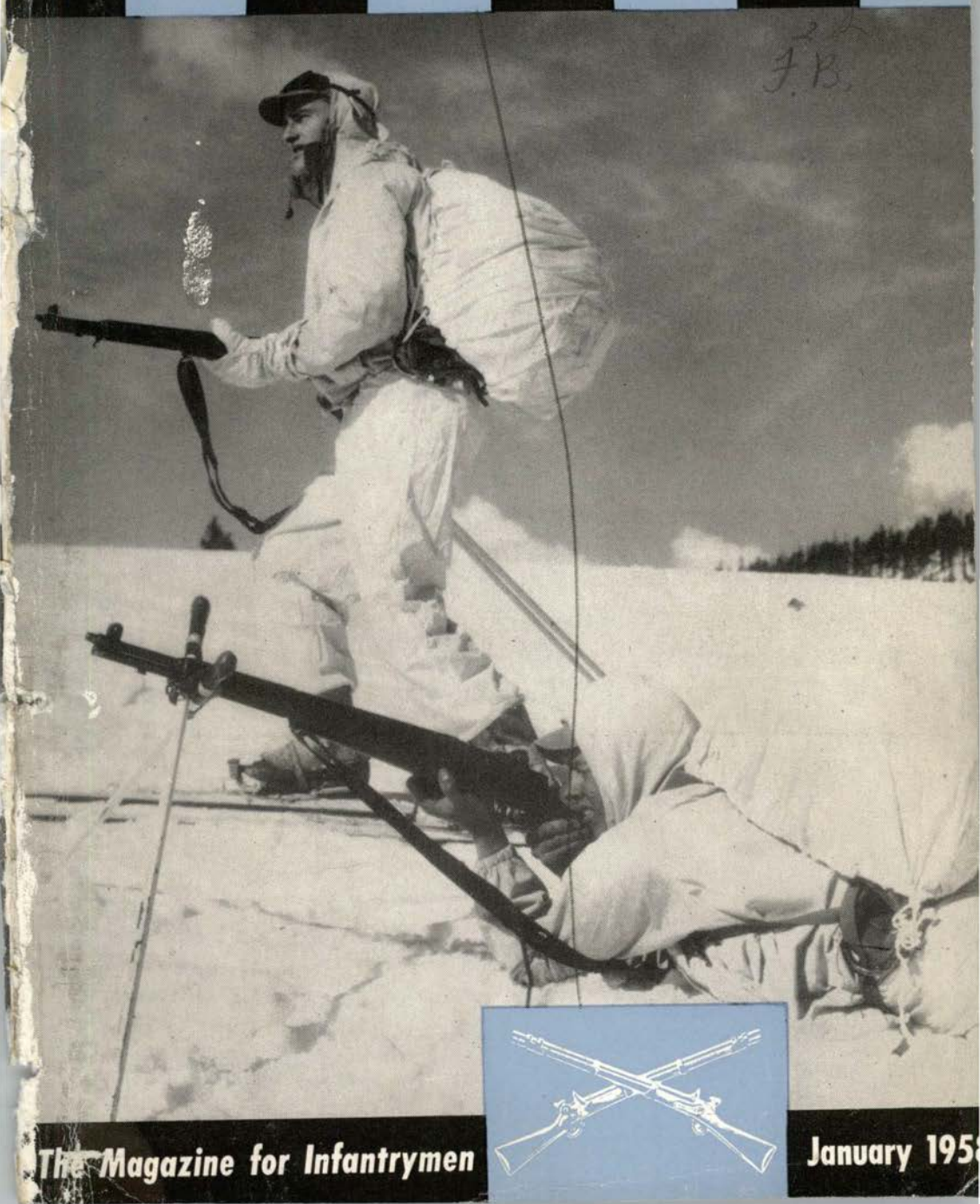
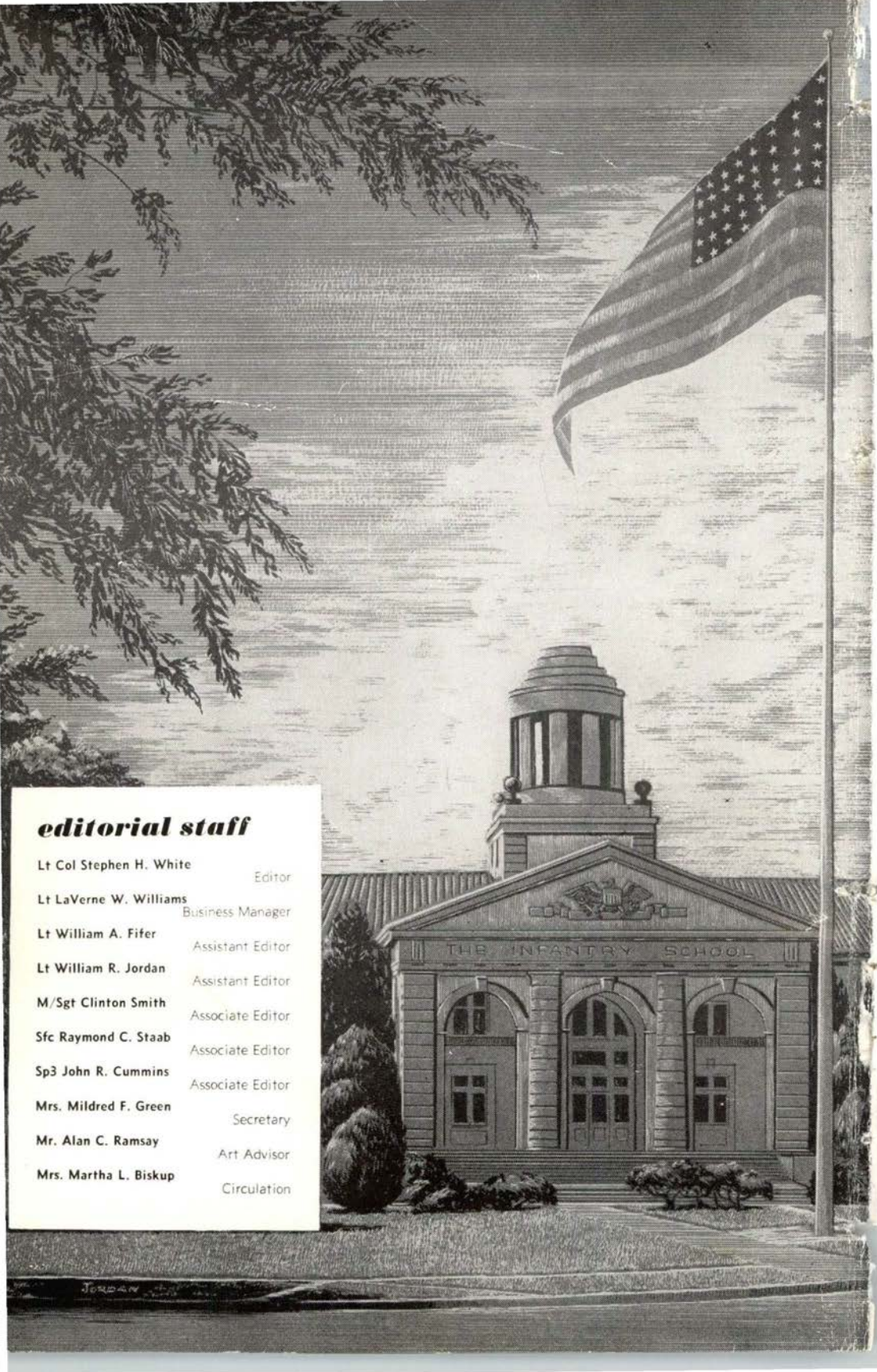
Infantry



The Magazine for Infantrymen

January 195



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Infantry

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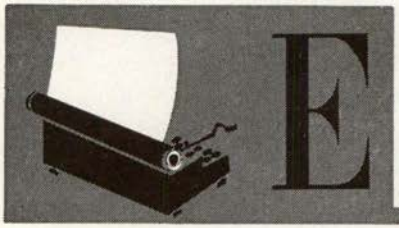

EDITOR'S PAGE

DEAR READER:

No one really knows what form future warfare may take. Some prognosticators predict a short-lived holocaust in which remotely-controlled intercontinental weapons will devastate both sides. This, of course, is but a guess. It seems more logical to predict that war, with or without atomic weapons, will continue to be a struggle for the seizure and control of land by men with their feet on the ground. Soviet Defense Minister Rodion Y. Malinovsky is reported to have said in a recent interview that push-button war is "an invention of writers, not of people who really know war. No war can be won without the foot soldier." The Soviets certainly back this up with their 175 divisions. Our own Secretary of the Army, Wilber M. Brucker recently told our missile-minded public that "the ultimate weapon, even in nuclear-age war, still is the Infantryman fighting on the ground." In peacetime there always has been a tendency to neglect or downgrade the importance of the Infantryman while attention is focused on more dramatic or more glamorous weapons. But the outbreak of hostilities has always restored the pre-eminence of the foot soldier as the decisive factor in combat. The reasons for this are obvious. No weapon has yet been produced or conceived which can do more than pave the way for the foot soldier without whose presence land cannot be held. The Infantryman alone has the versatility, flexibility and experience to utilize and exploit, in any combination, the support of all other arms and services to achieve ultimate victory on the battlefield in any kind of war.

THE EDITOR

The Infantryman has added tracks to his traditional combat boots. Infantry carriers, like this M-59, provide the protected ground mobility required by the modern Infantryman.

LETTERS TO THE EDITOR

We Still May Walk

Sir:

I have just finished reading, "We Still May Walk" by Capt Albert A. Rosner in the October issue of *Infantry*. I could barely wait to dash off a letter to you as regards this article.

Kudos to Capt Rosner. It is quite refreshing to find an Army writer who is not so blinded by an aura of helicopters, missiles and Sputniks that he is able to see that the basic means of soldier mobility will never disappear in the mists of modernity. That the Infantry will walk in coming wars, no matter how futuristic they may be, is in my humble opinion, an indisputable fact.

I feel certain that Capt Rosner's purpose in preparing this article was not to sell inveterate gravel agitators like myself on his proposition, but to convince the shapers of our current training policies and doctrine that they should take a new and quite basic look at our actual training needs.

Army-wide training of combat troops must include road marching and physical conditioning designed to assist the soldier in meeting the stringent demands of footborne mobility. This can never be successfully accomplished if done in a cyclic or erratic manner. It must be steady and continuous and above all of sufficient frequency to reap the benefits of physical readiness among our soldiery.

Capt Rosner should spread the hue and cry through *Army* and other service journals. If action is not taken on this valuable recommendation, I fear that, with the advent of WWIII or Police Action II, the Queen of Battles will suffer from the blistered and injured feet, knotted leg muscles and chafed thighs and buttocks that were so predominant in the early days of the Korean War, when soldier mobility just wasn't what it was supposed to be. These minor human sufferings are insignificant it is true, but when the human suffers, his effectiveness and capabilities, in most cases, suffer a proportionate reduction.

Karl R. Morton
Captain, Infantry
11th Airborne Division
APO 112, New York.

Extensive Library

Sir:

Please enter my subscription to *Infantry* on the permanent plan. My personal library contains all issues back to October 1946 and I often browse among the older issues. This is truly a fast moving generation, and I note that the Infantry is in there progressing along with all of the other phases of human endeavor. To miss a few issues of *Infantry* magazine would antiquate any officer.

Harvey J. Gray
Major, Inf, USAR
Whittier, Calif.

The Book Department has changed your subscription to the permanent plan. Infantry *strives always to "keep up" and to provide a helpful extension of Infantry School instruction in this period of unprecedented changes. Your thoughtful comments stimulate the staff to greater*

effort in providing the latest developments in Infantry doctrine and techniques.—Editor.

Infantry Used For Instruction

Sir:

I appreciated your article on "Firepower" in the July 57 issue. This is a very welcome article on a subject which is of great interest to Infantry officers. It is the most informative material on the new weapons system that I have come across to date. The article is to be used as a guide for instruction to the officers of this regiment.

I would appreciate any additional information or data you may have on the new weapons system of the battle group, i.e.: 105mm Mortar; M-14, M-15 Rifle and the M-60 Machinegun.

Louis L. Buckner
Lt Col, Infantry
6th Infantry
APO 742, New York

We have forwarded to you an interim publication on the new lightweight rifle system. This is the only thing currently available on the M-14 and M-15 rifles. You will find additional information on pages 26 to 35 of this issue which may be helpful until such time as a new field manual is published.

Since the M-60 machinegun has not been troop tested, no text has yet been prepared for distribution. However, the October 1957 issue of Infantry *contains a rather detailed article on this new weapon.*

There is no additional information at this time on the 105mm mortar which is unclassified.—Editor.

Commander—Staff Relationships

Sir:

There is no doubt that the new battle group organization is going to be under close scrutiny during the next few years while the "bugs" are being ironed out. Articles in recent issues of *Infantry* have described the organization and some of the theoretical operating principles. I look forward to reading many articles from the field concerning the practical application of these principles as well as recommended revisions in the TOE regarding communications, transportation and personnel.

One of the major deficiencies in the Infantry battle group organization, in my personal opinion, is the present staff-commander relationship. This is the only Infantry organization in which every commander in the unit is subordinate to all the staff officers of the next higher headquarters. With four majors on the battle group staff and six captains commanding the major subordinate units, the operating efficiency is consequently hampered. This works a great handicap on the company commanders in fending off the continual encroachments by the staff (all of whom are senior to the line commanders) on personnel, duties, and equipment. The battalion commanders of the old regiment were all senior to the regimental staff officers; the G's of the division are junior to the battle group commanders; the G's of the corps and army are also subordinate to the division and corps commanders, respectively. Why should the already overworked company commanders in the battle group have this additional burden placed upon their shoulders?

That this condition works to the disadvantage of the line companies and their efficiency there is no doubt. Many examples of field as well as garrison operations can be cited. This staff section needs the umpteenth clerk — usually far in excess of authorization — and he'll undoubtedly come from a rifle company. The field grade officer naturally has a distinct advantage over the company

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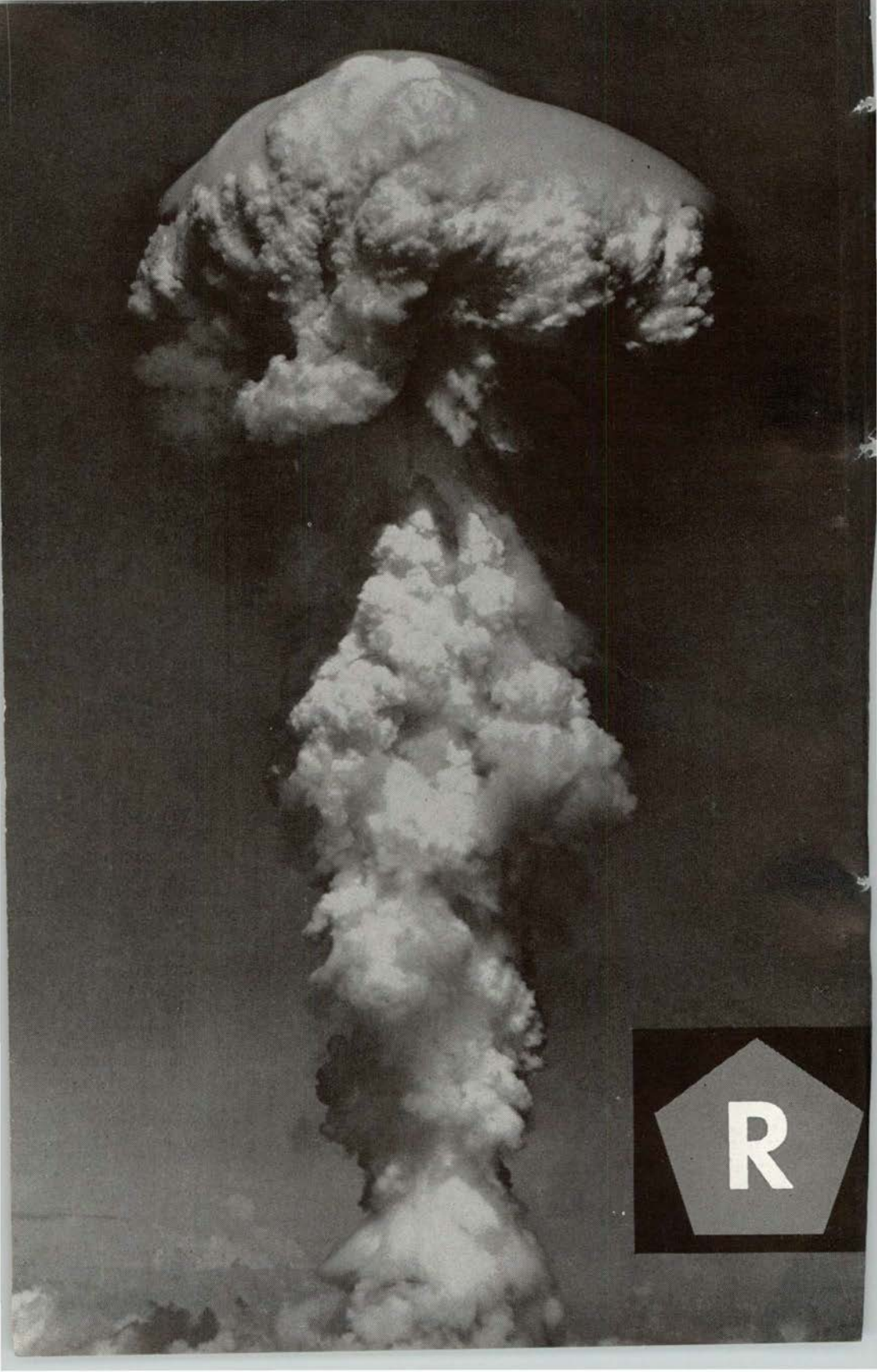
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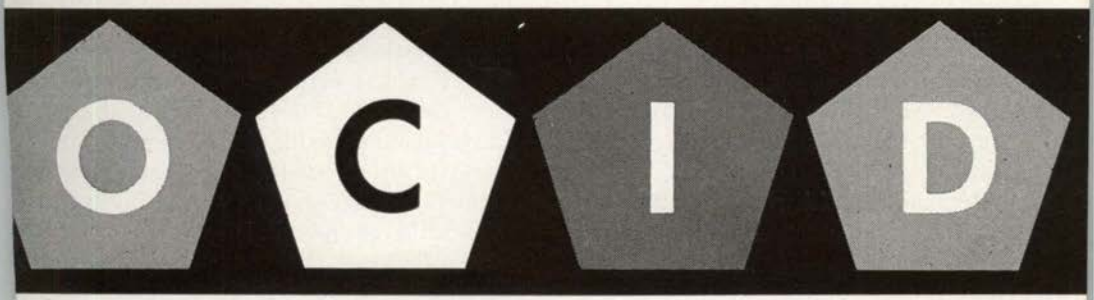
WHY FIVE? PART IV

This material concludes the "package" of related articles on the new pentomic

INFANTRY DIVISION

Starting with the April 1957 issue, just after the ROCID program was announced, *Infantry* began this series of related articles on the new pentomic Infantry division. The complete "package," which totals more than 100 pages of information and illustrations, is designed to give Infantrymen a basic text on the new division pending the development and publication of training literature, instructional material and new field manuals. The articles have been written by officers and civilians on the United States Army Infantry School staff who are preparing the School's programs of instruction, training material and texts. The material is compact and authentic. It has been reviewed by Headquarters USCONARC and Department of the Army before publication.

The first article in the series, "Why Five?", announced the reorganization of the Infantry division, discussed the reasons for the pentagonal structure and provided a brief look at the new organization and its major features. Succeeding articles have discussed many other important aspects of the division including tactical doctrine for the battle group and the rifle company in both the offense and defense, atomic and nonatomic firepower, communications, ground mobility, air mobility and medical support. The series is concluded in this issue with articles on logistical support, staff procedures and the new brigade headquarters. Of course, completion of this special "package" will not bring an end to material on the new division. Now that the basic organization, tactics, techniques and equipment for the division have been discussed, *Infantry* will continue to publish additional articles, for many issues to come, on the application of doctrine and techniques, on tactical employment of the various elements of the division and on changes and new developments as they occur.



ROCID

Logistical Support

PENTOMIC INFANTRY DIVISION

By Lt Col T. F. Horan

The importance of adequate, continuous logistical support for our tactical plans has not been changed by the reorganization of the Infantry division. Like the fire support units, the logistical support units have been reorganized and in some cases pooled at higher levels in keeping with the pentomic concept. Our logistical support has been tailored to support the tactics of the modern battlefield.

A major addition to the pentomic Infantry division is the division trains which groups all administrative and logistical support units, except the signal and engineer battalions, under one headquarters. This unit has the mission of providing tactical command, control, organization and security of all attached units of the division trains, both on the march and in bivouac. It is commanded by a colonel (MOS 1542) who has overall responsibility for the movement and security of all units within the trains. However, each of the separate chiefs of the technical and administrative units is

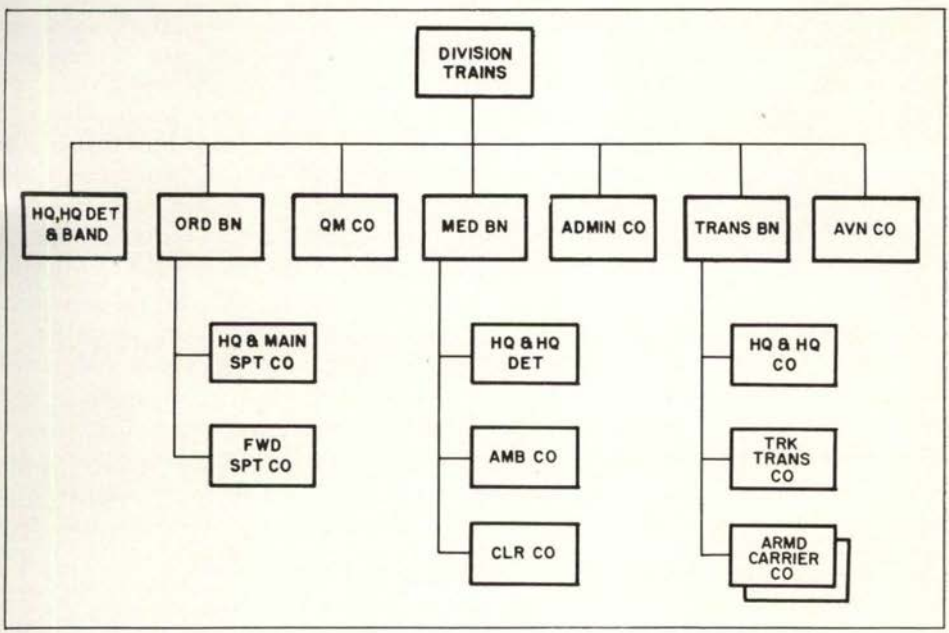
responsible for the internal functioning of his own organization.

To accomplish the mission of the division trains, the commander is assisted by the four sections of the headquarters, headquarters detachment and band. The first of these sections is the trains headquarters which includes the trains commander, executive officer, S1, S2, S3, two chaplains, liaison officer and sergeant major. The detachment headquarters consists of a mess steward, a supply sergeant, three cooks, a clerk and a wheeled vehicle mechanic. The headquarters section has eleven enlisted men including an intelligence sergeant, an operations sergeant, an assistant operations sergeant, a radio-telephone operator, two chaplain's assistants, two clerk-typists and three light truck drivers. The fourth section in the division trains headquarters is the band and security section which is composed of one warrant officer and 42 enlisted men.

Within the division trains (Figure 1) is the transportation battalion consisting of a headquarters and headquarters company, a truck transport company and two armored carrier companies. This organization provides a central pool of vehicles for both logistical and tactical uses and lends itself to greater flexibility than did the three truck platoons of the triangular division's quartermaster company. The new truck transport company has 80 2½-ton trucks as compared to 48 in the old QM company. These trucks will enable the division to make unit distribution of all classes of supplies except Class V to the battle groups.

Twenty-three trucks and 51 trailers of the truck company are precommitted daily for the hauling and mobile storage of supplies. Specifically, 16 trailers are used for the transportation and storage of the Class III reserve of canned gasoline, 27 trailers for mobile storage of one day's Class I reserve, two trucks and

Figure 1. The division trains.



two trailers for oils and lubricants, 15 trucks for daily distribution of Class I and six trucks with trailers for daily distribution of canned gasoline to the armor battalion and the cavalry squadron.

In the quartermaster company of the division trains the addition of 28 1200-gallon tank trucks and five 5000-gallon tank trailers for gasoline gives the division an improved capability for resupply of Class III. It is anticipated that one or more of the 1200-gallon tank trucks will be allocated to each of the battle groups while the remainder will be used to establish the division Class III distributing point.

The new medical battalion is similar in organization to the medical battalion of the triangular division.[1] The old battalion had a total of 30 ambulances—24 of which were ¾-ton and six of which were frontline ambulances. The present battalion has a total of 36 ¾-ton ambulances.

Moving now to the battle group level, let's briefly analyze the logistical picture.[2] First we have the supply and maintenance platoon (Figure 2) in the battle group headquarters and headquarters company. This platoon has replaced the service company of the old Infantry regiment. It is the element in the battle group which furnishes the necessary logistical support to the rifle companies and the mortar battery. The platoon leader is assisted in the performance of his duties as agent for the S4 by a supply warrant officer and a maintenance warrant officer. The supply and maintenance platoon is responsible for the preparation of all paper work incident to the requisitioning and receipt of supplies and has the capability of performing second echelon maintenance on vehicles. The truck squad has five 2½-ton trucks with trailers and

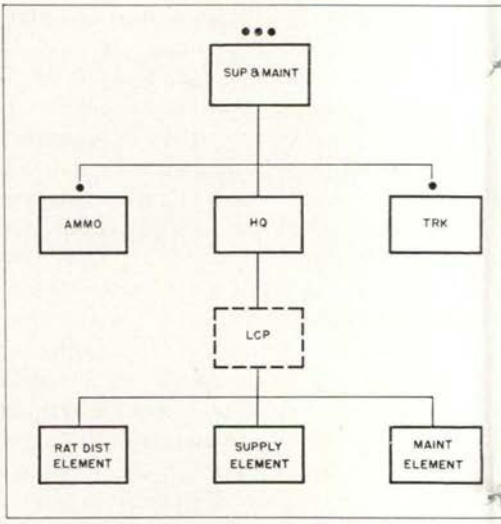


Figure 2. Battle group supply and maintenance platoon.

necessary personnel. These trucks are used to transport kitchen equipment and individual bedrolls. The ammunition squad has six 2½-ton trucks, four 5-ton trucks, six water trailers, two 2-ton ammunition trailers and two 1½-ton cargo trailers.

At this point, it should be pointed out that minor revisions may be necessary when the TOEs of the new division are reviewed after further testing and field experience. For example, the hauling of individual bedrolls in kitchen trucks and trailers does not appear to be feasible. It is felt that six 2½-ton trucks should be added to the truck squad to haul the bedrolls and to pull the water trailers now assigned to the ammunition squad. The water trailers should be transferred on the TOE to the truck squad.

The battle group supply and service area (formerly the trains area) normally will be located four to seven miles from the forward edge of the battle area

[1]See "Medical Support, Pentomic Infantry Division," page 37, October 1957 *Infantry*.
[2]Additional information on this subject may be found in "Logistical Organization, Operations and Systems, Infantry Division Battle Group," a combat logistics handbook published by the United States Army Infantry School.

(FEBA). It will be a sausage-shaped area (Figure 3) approximately 400 by 700 yards in dimension with the long axis perpendicular to the front. It is felt that dispersion of this nature will afford passive defense against mass destruction attack.

The focal point for activity in the supply and service area will be the LCP (logistical control point). The LCP will be operated by the supply and maintenance platoon leader who will be assisted by the supply warrant officer and maintenance warrant officer. The LCP will serve as the coordinating point for all activities within the supply and service area. Dispersion of installations within the supply and service area will be the maximum possible consistent with the accomplishment of the mission.

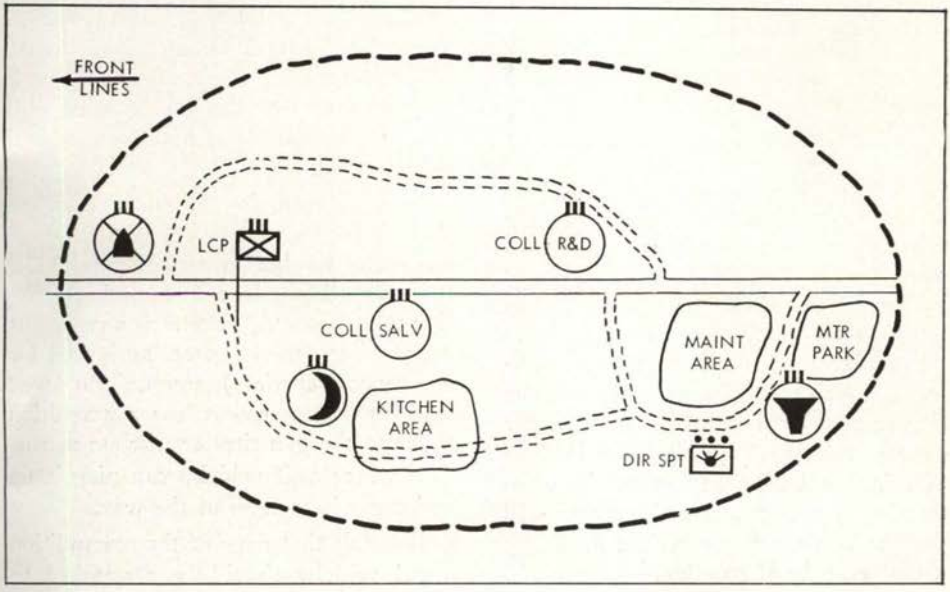
Unit distribution of all classes of supply from division to battle group will be normal with the exception of Class V. Let's discuss each class individually.

Class I—There is no great change here from that with which we have always been familiar. In most cases the kitchen trucks will deliver the meals to the unit feeding areas. If this is not possible because of the tactical situation, the kitchen trucks will transport the food as far forward as possible to a release point where each unit can send back vehicles to pick it up.

Class II and IV—The distribution system for these supplies is substantially the same as always. Small items will be sent forward with the rations. Larger items, such as fortification materiel, will be delivered to the farthest forward point by vehicles from the division transportation battalion.

Class III—Here the system deviates to some extent from the old method of exchanging an empty can for a full one. With the addition of the tank trucks in the division quartermaster company, very few 5-gallon cans are authorized the battle group—229 to be exact. It is anticipated that the tank truck or trucks allocated to the battle group will permit a mobile filling station to be established.

Figure 3. Battle group supply and service area.



LT COL TIMOTHY F. HORAN began his military career when he enlisted in the Vermont National Guard in 1935. Three years later he received his commission. He reported for active duty at Camp Blanding with the 172d Infantry Regiment in 1941 and later served with the 330th Infantry Regiment. He then completed the Basic Heavy Weapons Course, the Division Officers Course and the Battalion Commander and Staff Officers Course at Fort Benning. He went to Italy with the 34th Infantry Division in 1944 and served in various command and staff positions with the 133d Infantry Regiment. Late the following year he resumed reserve component duty as a battalion commander with the 76th Infantry Division. He then joined the 43d Infantry Division and was recalled to active duty when the unit was mobilized in 1950. He went to Germany with the 43d and served as a regimental executive officer, battalion commander, commandant of the Division Academy and chief of the Command Maintenance Team. He later joined the 9th Infantry Division as a regimental executive officer. Following his graduation from the Command and General Staff College he returned to the Infantry School in 1955 and was appointed chairman of the Staff Department's Logistics Committee. He received his present assignment as chief of the committee the following year.

However, 5-gallon cans still will be required to resupply vehicles in the forward areas where it would not be possible or feasible to move the tank trucks. The battle group's 229 cans are organic to the vehicles in the battle group. On occasion it may be necessary to remove one of these cans from each ¾-ton and larger vehicle to establish a unit Class III distributing point. In any event the combination of tank trucks and gas cans will give the battle group excellent flexibility in the resupply of gasoline.

Class V—This, of course, is the most important class of supply. A unit can get along for periods of time without other classes of supply, but it must always have sufficient ammunition to engage the enemy. The present concept envisions that Class V will be handled on a supply point distribution basis. Vehicles from the ammunition squad of the headquarters and headquarters company will travel to the army ammunition supply point, procure the needed ammunition and haul it back to the battle group supply and service area. This is the same system that has been used for many years. Within the battle group itself, however, the situation is different. First of all, a portion of the basic load of the battle group is carried on the vehicles of the ammunition squad. In the rifle companies and the mortar battery all of the ¾-ton trucks are used as weapons carriers for mortars or to transport equipment vital to the unit's mission. It cannot be said that unit vehicles will always move to the battle group ADP (ammunition distributing point) to procure ammunition or that vehicles from the ammunition squad will always haul the ammunition to the unit areas. It is felt that a combination of these two efforts will enable the battle group to resupply itself adequately with ammunition. The tactical situation will dictate whether one or both systems will be employed.

In a slow-moving or static situation there is no reason why unit vehicles cannot move the short distance to the ADP for ammunition. In a fast-moving situation when rapid displacement of weapons is occurring (thereby creating a need for the weapons carriers), ammunition squad vehicles can transport the ammunition either to the gun sites or as close as possible where unit vehicles can pick it up and carry it the rest of the way.

It is felt that none of the ammunition squad vehicles should be earmarked to

carry a specific unit's ammunition. Centralization of transportation can serve its intended purpose only by adhering to the principle of flexibility.

Because of its large carrying capacity, the 5-ton truck could be used ideally to travel between the supply and service area and the army ammunition supply point to haul ammunition to the battle group. However, the 2½-ton trucks will also have to be used for this purpose to insure that the basic load is maintained at all times. It must also be recognized that the 5-ton truck lacks cross-country mobility and for the most part will have to travel on relatively good roads. The 5-ton truck normally will be used no farther forward than the battle group ADP except in those cases when the situation demands otherwise and the terrain will permit such movement.

The basic load for the 4.2-inch mortar is 144 rounds. Seventy-four rounds will be carried on vehicles of the battery, the remaining 70 rounds on vehicles of the ammunition squad. Based on cross-country capability, it is felt that there are insufficient vehicles in the mortar battery to carry the 74 rounds per tube. Two 2½-ton trucks should be added to the mortar battery to make it possible for this unit to carry the required amount of mortar ammunition.

In the rifle company there are four ¾-ton trucks assigned to the weapons platoon. Three of these will be used for weapons carriers and the other will be used for hauling equipment of the weapons platoon. This places a considerable burden on one vehicle. It is believed that three mechanical mules (carrier, light weapons, M-274)[3] should be added to the rifle company and that one ¼-ton trailer should be deleted. The mules are self-powered and also can be towed by ¼-ton trucks. Three of these vehicles would greatly increase the flexibility of the rifle company in resupplying itself with ammunition. The mules can easily traverse any terrain where mortars may be located. Furthermore, they can be used to aid in the ammunition resupply of other elements of the company.

Now let's turn our attention to the systems of maintenance which will be employed at battle group level. The battle group will be supported by a direct support platoon from the forward support company of the division ordnance battalion. This platoon will be located in the battle group supply and service area. Organic to the supply and maintenance platoon of the battle group are 11 mechanics and seven mechanic helpers, plus one helper in the mortar battery.

Here again, it appears that there is a need for a minor revision in the TOE. The mechanic helpers are not provided with tools and must work on a "share" basis with the mechanics. It is felt that eight tool sets (one for each helper) should be added to the TOE and that two ¾-ton trucks with trailers should be provided for use by the maintenance section to carry its equipment and repair parts. The principle of performing maintenance as far forward as possible will be adhered to. Therefore, another use for the recommended additional vehicles will be to transport mechanics and necessary equipment to the side of the disabled vehicle so that it can be repaired on the spot.

These battle group maintenance personnel are capable of performing second echelon maintenance, while the direct support ordnance platoon can perform limited third echelon work.

We have discussed the organizational and technical changes in logistical support for the pentomic Infantry division as they pertain to combat situations. Garrison supply procedures governed by SR 735-30-1 are not affected specifically by pentomic reorganization. However,

[3]See "The Mule Returns," *Infantry* magazine, October, 1956.

a proposed new regulation (AR 735-35) contains sweeping changes in supply and property accounting procedures. The battle group commander and the unit commanders will continue to exercise command responsibility for government property. Major changes brought about by this new system lie within the administration of supply procedures. Informal accountability, as such, will be eliminated from the unit level and will be centralized at the battle group level. The battle group commander will be responsible that informal accountability be maintained at battle group level for each unit; however, the battle group supply officer will accomplish this function as the "property book officer" for the entire organization.

In general terms, this system will embrace procedures wherein supply transactions are effected directly between the battle group supply officer and the user (i.e., platoon leaders, section leaders, squad leaders, etc.). A number of the supply system forms have been changed. With the new system, the combination, single line item, "Request for Issue or Turn-in," DA Form 1546 will be implemented. However, this form is not new since it has been used in tests throughout the Army for repair parts and expanded to other areas at the discretion of installation commanders. Many units have already implemented some features of this new system based upon drafts of the new AR furnished Army commanders. At the present time an intensive academic evaluation of this system is being made by USAIS with a view toward including the entire system in resident instruction beginning in January 1958, provided the new regulation is published prior to 31 December 1957.[4]

There has been no change in mess organization or operation.

This new system of logistics has but one goal: To render continuous, adequate support to the tactical plans of our pentomic units. The Infantryman will then be able to pursue the enemy in small mobile units over long distances with full knowledge that the ammunition, gas, food and medical support he needs will always be directly behind him.

[4]Information received by USAIS as this article went to press, indicated that the new AR would be ready for distribution late in December 1957.

Combat Logistics Handbook

The Combat Logistics Handbook which covers logistical operations of the Infantry division battle group has been prepared and is now available.

The handbook describes the logistical organization of the Infantry division battle group; the duties and responsibilities of the battle group S4 and other key logistical personnel; and the organization, location and operation of the battle group supply and service area. In addition, the handbook includes a discussion of unit trains and a complete study of the systems employed in requesting, receiving and distributing all classes of supply. The preparation of administrative instructions, including the administrative order as prepared at battle group level, is covered in detail.

The handbook is currently included in the Monthly List of Instructional Material #11. Addressees may receive one copy of the handbook by ordering it under provisions outlined in the Monthly List. In the near future, other agencies may obtain copies of the handbook at an estimated cost of 15 cents each, by ordering from the Book Department, United States Army Infantry School, Fort Benning, Georgia.

ROCID

Staff Procedures

PENTOMIC INFANTRY DIVISION

By Maj Edmund J. Carberry and Capt Joseph A. Edmunds

We have seen how new weapons and new capabilities have resulted in the reorganization of the Infantry division. Previous articles have discussed many aspects of this new organization. Now we shall consider briefly the effects of these changes on staff procedures.

A comparison of the old and new division headquarters reveals that only one section, the dental section, has been eliminated in the pentomic division. The functions of this section are now the responsibility of the medical section. Three elements not found in the triangular division have been added to the new division headquarters. One, the transportation section, was created with the assignment of the transportation battalion to the Infantry division. The addition of this section should insure better planning, more flexibility and more profitable use of division transportation. Another

is the brigade headquarters which provides two advantages: it can be used as a task force headquarters to accomplish special missions or to decrease the division commander's span of control, and it can serve as an alternate division headquarters.[1] The third new element is the special service section. Formerly, the functions of this section were assigned by the commander to some member of his staff on an additional duty basis. Creation of this section illustrates the growing appreciation of the impact of recreation on morale. The remaining elements of the division headquarters retain essentially the same functions they had in the old organization. However, the number of personnel assigned to the various elements of the division headquarters has changed in most cases. The over-all effect, number-wise, is that the new division headquarters has a personnel increase of about 13% over the old headquarters.

Except for these changes and the fact that the pentomic division staff works with five battle groups rather than with three regiments, staff procedures at division level are essentially the same as they were in the triangular division. In this discussion we are concerned primarily with the staff of the battle group since the greatest differences occur at this level.

We know that the Infantry regiment and the Infantry battalion of the triangular division have been consolidated into the streamlined, single-echelon battle group. The headquarters of this new unit performs the functions of both the regimental and the battalion headquarters.

The staff of the battle group is unique in that it deals directly with the company commander and bridges the gap between the company commander and the division staff. At times, when the battle group is in reserve, when it is designated as a counterattacking force and in other situations, this staff may operate under or deal directly with the brigade staff. Under certain conditions as determined by the division commander, the battle group staff may operate under an alternate division headquarters established by the division artillery. Deletion of the battalion headquarters and the performance of the functions of two headquarters echelons add to the complexity of the task of the battle group staff.

The supervision exercised by the battle group staff must, of necessity, be much more detailed than that which the regimental staff was accustomed to exercising. The regimental staff officer dealt with his counterpart on the battalion staff. Two specialists in a common field worked together to accomplish a mission. Where the regimental staff of the past could rely to a great extent upon the battalion staff to do the majority of the coordination between the battalion and the companies, the battle group staff must now absorb this function. The battle group staff officer deals not with a subordinate staff member but directly with the company commanders. This requires more detailed planning, for the nearer the level of the individual soldier is approached the more specific and more detailed planning must be. Although the battle group staff will deal with only six organic companies (whereas the regimental staff worked with three battalions and five separate companies), it appears that the diversity of units within the battle group headquarters and headquarters company, the increased dispersion and the variety of support available in higher echelons will present more difficult tasks for the staff.

The unit or coordinating staff of the battle group is still organized around the four major functions of command: personnel, intelligence, operations and logistics.

[1]For a complete discussion of the brigade headquarters, see page 21 in this issue of *Infantry*.

Let's take a look at some of the duties of the members of this staff.

The executive officer is the principal assistant to the commander. He spends a great amount of his time coordinating the activities of the staff. He must insure good working relationships between his staff and the division staff. Since the battle group must be prepared to function as part of the brigade, good working relationships must be established with the brigade staff. The executive officer of the battle group has an added responsibility for the troop and public information program. This should lend prestige and greater command emphasis to information activities. A specialist third class is provided to assist the executive officer with this program.

In the battle group headquarters, two captains replace the three lieutenants who acted as liaison officers in the regiment. The increase in rank should provide more mature officers in this duty and improve the flow of information. One of the captains normally will be used for liaison with division or brigade; the other will be used for liaison duties as determined by the commander. One method of insuring adequate liaison to both flanks is to establish as SOP the policy that lateral liaison responsibilities follow the same pattern as signal communications, i.e., that each unit send a liaison officer to the unit on its right.

The S1-adjutant of the battle group handles the normal personnel and administrative functions. The lieutenant, assistant S1, and the warrant officer, assistant adjutant in the regimental organization have been eliminated. Special service functions will probably have to be handled during noncombat periods on a special duty basis or as an additional duty of an officer in one of the subordinate units. The battle group has no security platoon to guard the CP, handle prisoners of war, control stragglers or take care

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of the many duties which that platoon performed for the regiment. When requirements exist for these activities S1 will have to request troop support through S3. The task of recovering and disposing of deceased personnel is performed by a three-man team of specialists from the division quartermaster company, thus freeing an Infantry officer for combat duties.

The personnel section of the battle group consists of a warrant officer and nine enlisted men. This section normally will carry out its functions at the division administrative center. Two chaplains are assigned to the battle group headquarters. Under staff supervision of

CAPT JOSEPH A. EDMUNDS began his military career when he enlisted in the Army in 1942. After two years of enlisted service he received his commission at Fort Knox and subsequently served as a platoon leader with the 5th Infantry Regiment and the 71st Infantry Division in the European Theater of Operations until 1947. For the next three years he was a member of the 3d Armored Division at Fort Knox. He went to Korea soon after the outbreak of hostilities there and became a company commander in the 3d Engineer Combat Battalion of the 24th Infantry Division. He then completed the Advanced Course at the Infantry School and went to Austria where he served as a company commander, battalion S3 and regimental S3 with the 350th Infantry Regiment. Two years ago he began his present duties as an instructor with the Operations Committee of the United States Army Infantry School's Staff Department.

S1, they are responsible for advising the commander on the moral and spiritual welfare of the battle group.

Although the basic concepts and principles for the production of combat intelligence have not been materially affected by ROCID, there have been some changes in organization, techniques and capabilities at battle group level which are designed to meet the demands for intelligence on the modern battlefield. The battle group intelligence organization differs significantly from that in the Infantry regiment. The intelligence staff section now consists of the following personnel: one major, the intelligence officer; one captain, assistant intelligence officer and S2 air; one M/Sgt, intelligence sergeant; and two Sfcs, one the assistant intelligence sergeant, the other, the counterfire operations sergeant. This section provides the S2 with the minimum administrative and operational assistance essential to the performance of his duties. The size of the section provides more effective operations on a 24-hour basis in coordination with the S3 and other staff sections than was previously possible with the regimental intelligence section. The dispersed, fast-moving combat operations anticipated in future warfare increase the importance of combat intelligence and the collection, processing and use steps involved in its production. Therefore, the intelligence officer must continuously focus the efforts of the battle group intelligence organization to determine the most essential data concerning the weather, terrain and the enemy and to appraise the effects of these elements on the accomplishment of the mission. Efficient and effective focusing of this effort is especially important since the battle group S2 must now serve directly not only the battle group commander and staff but also the various subordinate commanders without the assistance of battalion S2s.

Other agencies of the battle group with a primary mission of collecting information also differ significantly from those formerly found at regimental level. The reconnaissance platoon, consisting of one officer and 38 enlisted men, has taken the place of the regimental intelligence and reconnaissance platoon which had one officer and 27 enlisted men. The new platoon possesses greater firepower, armor protection, mobility, communications and capabilities than the I&R platoon but it also has certain inherent limitations which result from its organizational structure. Although the platoon's primary mission is the collection of information, its firepower and armor protection enable it to accomplish the secondary mission of performing security operations such as patrolling and screening missions for the battle group. However, while the mobility of the reconnais-

sance platoon extends its collection range, the organizational structure hampers operation of segments of the platoon alone and in different areas as squads of the I&R platoon frequently operated.

The only other organic agency in the battle group with the primary mission of collecting information is the counterfire squad. A comparison between the battle group and regiment reveals a marked lessening of counterfire capability for the battle group. The regimental counterfire platoon with its three squads and six sound-ranging teams obviously had a greater collection capability than the battle group's single squad consisting of two sound-ranging teams.

The success of the battle group intelligence effort remains dependent upon the participation of all elements of the battle group in that effort and not merely upon those units with intelligence as a primary function. Intelligence training of the individual soldier and of all units must be emphasized. Furthermore, when widely dispersed operations, fast-moving situations, mass destruction weapons or other tactical situations create requirements beyond the capabilities of the organic agencies of the battle group, other means must be utilized. Aircraft for air OPs, aerial reconnaissance and photography, and scientific collection and production devices of higher headquarters, such as radar and automatic data processing machines, must be exploited to the maximum extent.

The S3's basic job as in the past is to advise the commander on how to organize, train and employ his troops. In the battle group this job appears to be less difficult than it was in the regiment, because the battle group is more homogeneous than the regiment. The primary problems will come from the task of obtaining and coordinating the support required for successful accomplishment of the battle group's missions in various situations. Mobility must be a key feature of combat organizations. Organically, the mobility of the battle group is still geared to the foot soldier. Support is available from higher headquarters to increase this mobility by the use of Infantry carriers, trucks, helicopters or fixed-wing transport aircraft. The S3 must have plans to use these media on short notice.

Fire support requires much more careful planning for the battle group than for the regiment. The battle group S3 must take care of the detailed planning himself, since, unlike the regimental S3, he has no subordinate unit operations officer to assist in S3 activities. In addition, dispersion of the rifle companies will necessitate the covering of greater areas by supporting fires. The S3 also must concern himself with planning for atomic fire support. For this reason it is desirable that he be qualified as a special weapons officer. The battle group S3 also will be more concerned with close air support than was the regimental S3. Additional radio equipment has been provided the battle group for the purpose of establishing an air request net. The S3 has two assistants (captains) one of whom will function as S3 air as an additional duty.

The battle group mortar battery commander is the fire support coordinator. This is a change. In the past the commander of the direct support artillery battalion performed this function. S3 retains unit staff responsibility for the coordination of fire support. Two of S3's operators have changed branch. The leader of the engineer platoon is an engineer corps officer and the communications officer is a signal corps officer. This should improve technical proficiency in those positions. The assault gun platoon leader is the battle group antitank weapon expert. As such he is a special staff officer under the supervision of the S3. The executive officer of the headquarters

and headquarters company is CBR officer for the battle group and, as such, is a member of the special staff under supervision of the S3.

The S4's fields of interest continue to be supply, evacuation, transportation, service and management. He has no assigned personnel in the headquarters, either officer or enlisted. His principal assistant in the battle group is the supply and maintenance platoon leader who will be extremely busy during combat, supervising the supply and maintenance activities of the battle group. The motor officer on the battle group staff will provide the S4 with some assistance on the technical aspects of motor maintenance. He will work mainly in the S4 section of the headquarters planning transportation requirements, traffic control and road movements.

The S4 will make plans for aerial resupply and will become thoroughly familiar with the marking of drop zones for aerial resupply. After the assault phase of a helicopter operation has ended, the S4 will become the operator of the helicopter departure point in resupplying the battle group by air.

The surgeon is responsible for medical evacuation and expendable medical supplies. And since rapid evacuation of the seriously wounded will be essential in the future, the surgeon will utilize helicopter evacuations to the maximum possible extent.[2]

Combat orders issued by the battle group staff will be brief, concise and clear. Usually they will be verbal and often fragmentary. However, when time permits, written orders will be published, since they insure a better understanding by subordinate commanders and give a positive check on the desires of the commander. Company commanders on the modern battlefield may expect to receive frequent mission-type orders. Because of the increased mobility of air and ground forces, tactical situations on the battlefield will be subject to rapid change. The techniques of modern warfare require speed in all military operations. The reaction time of a unit may be the difference between success and failure. Consequently, all types of combat orders must be streamlined to the maximum, commensurate with complete understanding by all concerned.

The battle group is organized to fight in either atomic or nonatomic warfare. The battle group staff has been modified to keep pace with other organizational changes. It will be called upon to plan and supervise a wide variety of operations. It must do its job rapidly but thoroughly. Training the staff to function properly as a team at the speed required will be a distinct challenge to Infantry battle group commanders.

[2]See "Medical Support, Pentomic Infantry Division", page 37, October 1957 *Infantry* for additional information on medical support.

Pentomic Reorganization

The reorganization of all active Army divisions under pentomic concepts is to be completed this winter. The last two Infantry divisions to undergo pentomic regrouping are the 1st Cavalry Division in Korea and the 9th Infantry Division at Fort Carson.

The 24th Infantry Division, redesignated the 1st Cavalry Division, began its reorganization last October and the 9th Infantry Division was to have begun its pentomic shift 1 December.

The pentomic reorganization began with the 101st Airborne Division in September 1956, and with the regrouping of these last two divisions, the reorganization of the Army will be complete with the excepton of combat support units.

Brigade staff plans gyroscope of 3d Division to Germany.

ROCID

The Brigade Hq.

PENTOMIC INFANTRY DIVISION

By Capt Joseph H. Rapp

The organizational structure of the pentomic Infantry division incorporates many features which enhance the division's capabilities and its flexibility. Most of these features have been discussed in recent issues of *Infantry* magazine. They include such things as the increased number of combat elements within the division, the pooling of occasionally used equipment at the highest practical level, the adding of organic weapons which are capable of firing atomic or conventional warheads and other innovations which enable the division to fight in either atomic or non-atomic warfare.

Another important feature which has been mentioned, but not discussed, is the brigade headquarters. Before we examine this addition to the new division, it should be pointed out that the development of concepts and doctrine and primary responsibility for instruction on the brigade headquarters rests with the

Command and General Staff College at Fort Leavenworth. However, information on this subject is included in the program of instruction at the United States Army Infantry School since the battle group and other elements of the division will frequently operate under or come in contact with the brigade headquarters. It is essential that battle group, company and other unit commanders have a working knowledge of this new organization.

With tactical concepts for the modern battlefield calling for greater dispersion and more frequent independent operations, and with the division being made up of five major fighting elements, additional control means are desirable. The division commander is given these means by the addition of the brigade staff—an entirely new group of personnel located within the division headquarters (Figure 1). The brigade headquarters is commanded by a brigadier general, and is composed of nine staff officers and 14 enlisted men. It should be pointed out that the brigade headquarters is simply a staff, organized and trained to provide an additional headquarters or staff group for the performance of duties and tasks assigned by the division commander. No troops or supporting units are permanently assigned to the brigade.

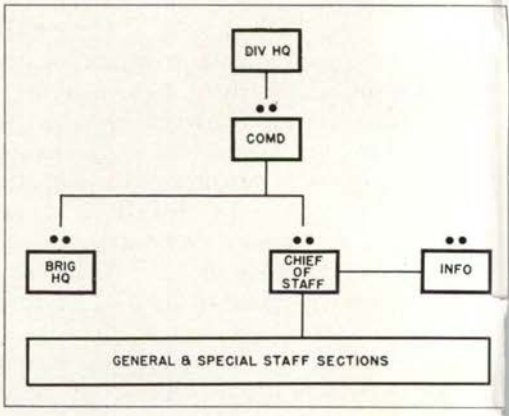
In addition to the brigade commander, who is also the assistant division commander, the staff includes a deputy brigade commander (colonel), an executive officer (lieutenant colonel), an S1, S2, S3 and S4 (majors), an assistant S2 (captain) and two assistant S3s (captain and lieutenant). The 14 enlisted men include a sergeant major, two intelligence sergeants, two operations sergeants, a supply sergeant, two clerk typists, four drivers and two radio-telephone operators (Figure 2).

The brigade headquarters is capable of performing a variety of tasks which increase the capabilities and flexibility of the division. Some of the typical functions which normally will be assigned to the brigade commander are: to establish and operate an alternate division command post, to organize and command a task force composed of two or more major combat elements of the division along with necessary supporting units, to develop policies and plans as directed by the division commander or to supervise training within the division.

When the brigade staff is not employed for one of these functions other appropriate assignments will be given to it. In performing these functions, the staff should be kept intact. It should train and work together as a unit at all times. Individuals or groups of individuals should not be taken from the brigade staff to augment or assist other individuals or sections of the division headquarters.

Now let's take a closer look at some of the tasks which have been mentioned for this brigade headquarters. Depth in command is an obvious necessity in atomic warfare. To achieve depth in command the pentomic Infantry division can employ the brigade as an alternate command post, physically separated from the primary division command organization.

Figure 1. Infantry division headquarters.



By maintaining a close grasp of the tactical situation at all times, the brigade headquarters can assume control of the division in the event the division CP is destroyed or isolated. Its limitations in this role should, however, be pointed out. Insufficient personnel and equipment will limit the brigade headquarters to temporary control of the division. To perform this function over prolonged periods, the staff and its equipment will require augmentation. The organization and existing personnel in brigade headquarters will, however, provide an excellent nucleus from which orderly expansion may take place.

Assumption of division command by the brigade headquarters will be exercised in accordance with established division SOPs. Also provided by SOPs will be the division commander's policies with respect to the conditions under which command will shift to the brigade and initial procedures required to reestablish control of the division. Training of the brigade headquarters to function in this role will require a great deal of planning and coordination. Division planning and guidance as well as the capabilities of the brigade headquarters should be thoroughly tested during the conduct of training exercises. This is essential to provide all concerned with an appreciation of the brigade's usefulness as well as its limitations.

It is visualized that there will be situations on the modern battlefield in which the division commander will find it advantageous or necessary to have the brigade headquarters command a task force. The organization of such a force will, of course, depend upon the tactical situation at the time. The flexibility provided by the new division permits a wide variety of possible combinations, each of which could be specially tailored to accomplish a specific job. One example of how such a force might be organized under the brigade headquarters is shown in Figure 3 (next page).

BRIGADE HEADQUARTERS

Brigade Commander	Brig Gen
Deputy Commander	Col
Executive Officer	Lt Col
S1 Adjutant	Maj
S2	Maj
S3	Maj
S4	Maj
Assistant S2	Capt
Assistant S3	Capt
Assistant S3	Lt
Sergeant Major	M/Sgt
Intelligence Sergeant	M/Sgt
Operations Sergeant	M/Sgt
Supply Sergeant	M/Sgt
Asst Intelligence Sergeant	Sfc
Asst Operations Sergeant	Sfc
Clerk Typist (2)	Sp3
Senior Light Truck Driver	Sp3
Light Truck Driver (3)	Pfc
Radio-Telephone Operator (2)	Pfc

Figure 2. Brigade headquarters.

The brigade task force might be utilized for numerous missions. It could be employed as the assault echelon of an attacking force. It could be a covering or security force for the division or it could be the division reserve. It could be organized as an exploitation or mobile striking force or as a unit to occupy and defend terrain.

These roles alone are sufficient to justify the existence of a brigade headquarters within the division organization. For while control of five or more widely separated maneuver elements by one

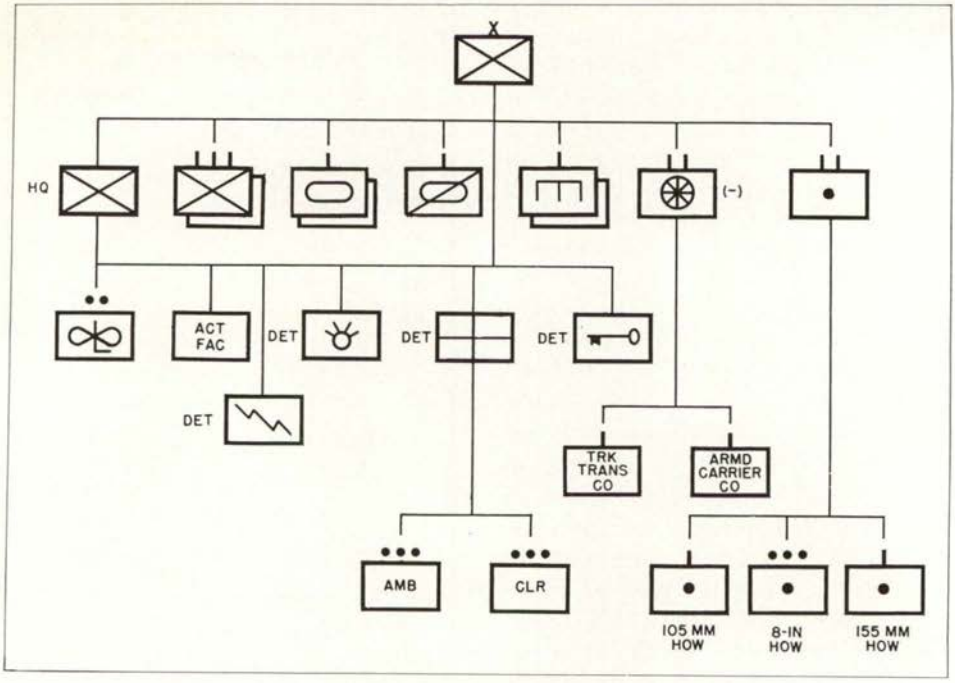


Figure 3. Example of a brigade task force.

headquarters is possible, the brigade headquarters provides the division commander with an additional control means which adds immeasurably to the flexibility of the division.

The brigade headquarters also can be used effectively in the development of division plans and policies, both in combat and garrison. Gyroscope movements, field exercises, command post exercises and divisional maneuvers are representative of the planning tasks that can be executed by the brigade in a peacetime or training situation. Relieved of these functions, the division headquarters staff can more actively supervise the current operations and training activities of the division to insure combat readiness. In combat, when not required to assist in the current operations of the division, the brigade may be employed to plan for anticipated future operations such as river crossings, amphibious assaults, and long movements by air, ground or water transportation.

When not employed in another role the brigade can be assigned the responsibility for supervision of selected training activities of the division. For example, the planning and conduct of Army Training Tests is a task for which the brigade is particularly well suited.

To insure that it is qualified to perform effectively its assigned functions, the brigade headquarters frequently must be located and must operate away from the division headquarters. It must be trained to function effectively as a staff, dealing both with the division staff and the subordinate units of the division. Its capabilities must be fully exploited to obtain for the division the maximum degree of flexibility—the key to success on the modern battlefield.

While not directly related to the subject of the brigade headquarters, a change

which further increases the flexibility of the pentomic Infantry division and which is indirectly related to the brigade headquarters' function of providing an alternate division headquarters was recently announced by the CG, USCONARC. The pentomic division artillery headquarters has been given the added mission of providing still another alternate division headquarters. Thus the division commander will have two alternate headquarters which he can use to accomplish his mission. Division and subordinate unit SOPs must be designed to facilitate and expedite the operations of both as alternate command posts. The priority in which each will assume this function cannot be established as doctrine since employment can be expected to vary with the policy of the division commander concerned and with the tactical situation which confronts him. This mission is not to be an additional or secondary consideration for either the brigade headquarters or the division artillery headquarters but rather a primary one which both headquarters will, at all times, be prepared to assume.

CAPT JOSEPH H. RAPP received an ROTC commission in June 1950 and was called to active duty in December of that year. He served as a platoon leader with the 23d Infantry Regiment in Korea and then joined the 19th Infantry Regiment in Japan where he served as a company commander. Following his graduation from the Army Language School, Presidio of Monterey, Calif., in 1954, he served for three years as an instructor with the Operations and Training Committee, of the United States Army Infantry School's Staff Department. He was recently assigned duty with the 373d Armored Infantry Battalion in Europe.

Regular Army Commissions

Interested officers serving on active duty again may submit applications for Regular Army commissions at any time of the year. Suspended for the past year during the RA augmentation program, the RA appointment program was reinstated 1 November 1957 under changes to AR 601-100 and related regulations.

The basic regulation is being completely revised. Policy now calls for applications to be considered as rapidly as possible with four or more boards meeting every year. The revision also provides that an officer may submit an application as early in his career as possible. Thus, an officer will not be faced with the problem of going off active duty (after two years' mandatory service) and then having to decide whether to return as a Regular officer or remain a civilian.

Other regulations concerning such appointments (AR 601-124, AR 601-125 and AR 601-126) are being changed to conform with the revised AR 601-100.

Applications may now be submitted whenever an individual is qualified. Previously, applications could be submitted only during two specific periods of each year (November-December and May-June) and an individual might wait as long as seven months before knowing whether he was accepted. Applications now will be acted on within four months from the date of submission.

All active federal commissioned service performed since 7 December 1941 will be credited. Appointments in permanent grades as high as major are permitted. Prior to the changes, the active duty program was limited to age 31 with appointments limited to first lieutenant.

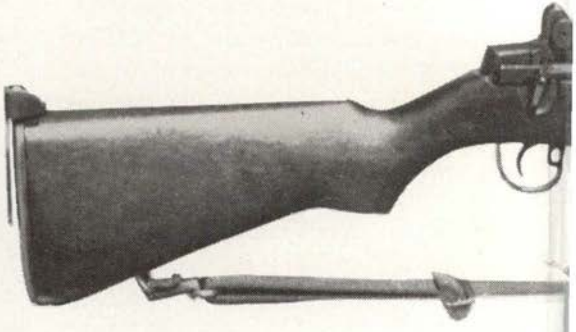
NEW BASIC

This new rifle will replace the M-1 rifle, the carbine, the submachinegun and the Browning automatic rifle.

The Army has adopted an improved small arms weapons system which will give forward Infantry units increased firepower while reducing the number of weapons from seven to two. The new weapons in this streamlined system are the M-60 general purpose machinegun and the recently standardized M-14 rifle (a heavier-barrel version of this rifle is designated the M-15).

When available for issue the new rifle will replace the M-1 (Garand) rifle, the Browning automatic rifle, the .30-caliber carbine and the M-3 submachinegun. The M-60 machinegun will take the

By Maj R. H. Oestreich



WEAPON FOR THE INFANTRY

place of the heavy and two light machineguns now in use. Both of the new weapons will fire the 7.62mm NATO cartridge which will be common to the NATO allies.

These weapons were discussed briefly in the July 1957 issue of *Infantry*[1] and detailed information on the M-60 machinegun was published in the October 1957 *Infantry*. At this time we shall take a closer look at the new rifle—the Infantryman's basic weapon.

Known during its development as the T-44 (T-44HB for the heavier-barrel version) this rifle was produced by the U.S. Army Ordnance Corps at Springfield Armory which also produced the M-1. It was subjected to exhaustive tests under every possible condition of use in arctic, tropic and temperate areas and found to be superior to the M-1. Other factors favoring its adoption were lighter weight, excellent balance and suitability for mass production and training.

Characteristics

Both the M-14 and M-15 rifles have the same general characteristics. The major differences between the M-15 and the M-14 are that the M-15 has a heavier barrel, hand guard and stock; it also has a bipod and a hinged butt plate. They are air-cooled, gas-operated, magazine-fed shoulder weapons which fire from a closed bolt. The bolt remains to the rear when the last round is fired. The M-14 with a light barrel, weighs 8.7 pounds. It does the work of the carbine, M-1 rifle and M-3 submachinegun. When the rifle is equipped with a heavier barrel and bipod it is called the M-15, weighs 13 pounds and replaces the 20-pound

[1]Discussed in "Firepower, Pentomic Infantry Division": M-14 and M-15 Rifle, pages 29-30; M-60 Machinegun, pages 31-33.

The old small arms weapons system.

BAR. The M-14 is a semiautomatic rifle which can be made to fire automatically by substituting a selector for the selector lock on the weapon. The M-15 is issued ready to fire either semiautomatically or automatically. The rifle bore will be chromium plated.

The M-14 "action" (i.e., receiver, bolt and trigger group) is basically the same as that of the M-1 rifle. However, modifications were required to accommodate the shorter cartridge and the 20-round box magazine. The receiver, bolt and firing pin are shorter. The bolt has a stud with a roller (for reduction of friction) which contacts the operating rod cam surface. The trigger group, with the exception of the sear, is basically the same as that of the M-1 rifle, but utilizes a new housing and trigger guard. The trigger housing floor plate has been cut back to allow for insertion of the magazine, but sufficient surface area has been maintained to assure proper clamping of the stock. The magazine latch is located in a recess in the forward face of the trigger housing.

The new small arms weapons system.

Mechanical Training

The disassembly procedures will be generally the same as those indicated in FM 23-5, M-1 Rifle. Disassembly and assembly of the rifle into five basic groups can be accomplished without the use of a wrench. Detailed disassembly of the various groups requires the use of a wrench and screwdriver.

Detailed disassembly normally will be limited to the barrel and receiver group. The bolt group, trigger group, stock group and magazine group will be disassembled only as required for extensive cleaning or the replacement of broken or worn parts.

Disassembly of the barrel and receiver group. (Figure 1) To disassemble the barrel and receiver group, unload the rifle, remove the magazine and place the safety in the SAFE position. Place the butt of the rifle on the right thigh with the sights to the left. Loosen the sling. Grasp the magazine with the right hand so that the thumb is against the magazine catch and the fingers are extended around the front of the magazine. With the thumb of the right hand press in the magazine latch. With the fingers extended forward and out around the front of the magazine, remove the magazine from the receiver.

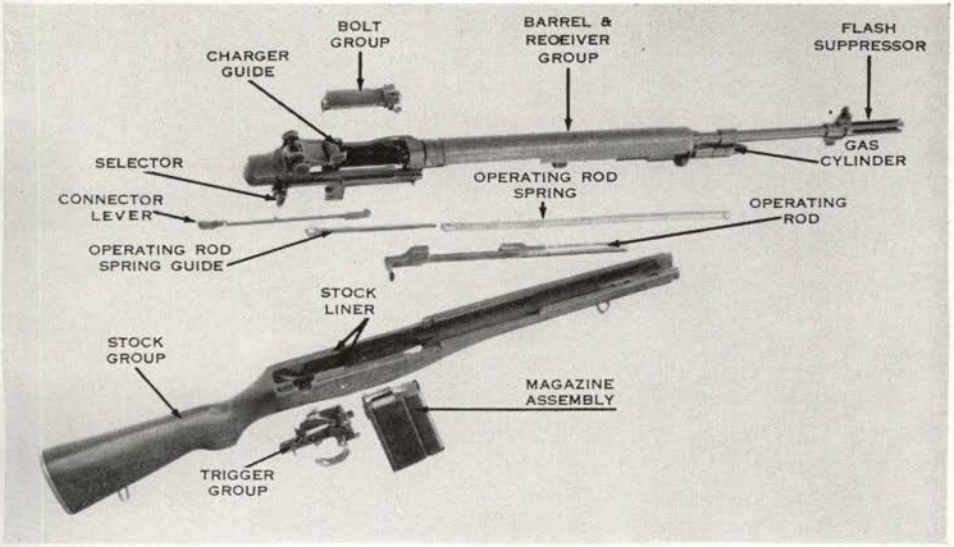
With the thumb and forefinger of the right hand, pull downward and outward on the trigger guard. Swing the trigger guard upward and lift the trigger group from the stock. Place the trigger group to your left front. All parts will be laid down from left to right in the order they are removed.

Separate the stock from the rifle by cradling the receiver firmly in the left hand and by sharply striking downward on the small of the stock with the palm of the right hand.

Turn the barrel and receiver group on its side with the connector assembly upward. On rifles modified for selective firing, press in and turn the selector until the face marked "A" is toward the rear sight knob and the projection is forward. Press forward on the connector with the right thumb until the forward end can be lifted off the connector lock. Rotate the connector clockwise until the slot at the rear end is aligned with the elongated stud on the sear release. Lower the front end of the connector slightly and lift it from the sear release. (Note: The connector assembly is a semipermanent assembly and it should not be disassembled.)

With the barrel and receiver group

Figure 1. The rifle field stripped. Barrel and receiver group disassembled.



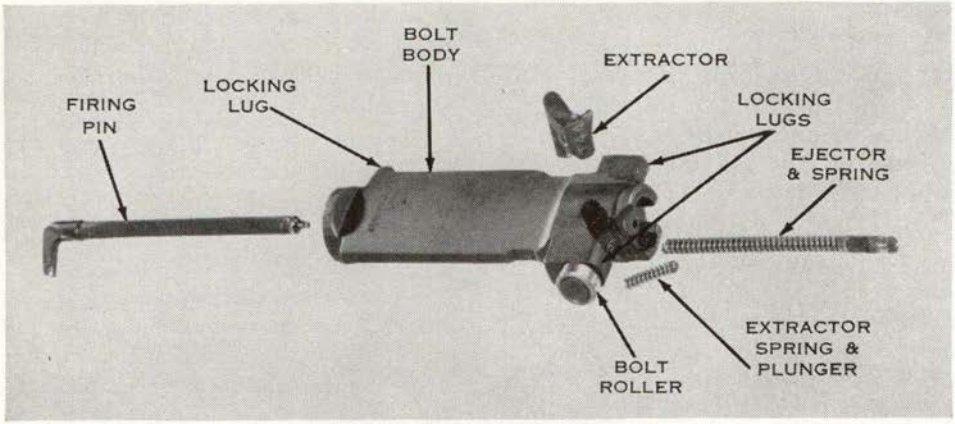


Figure 2. Bolt group disassembled.

upside down, pull forward on the operating rod spring thereby relieving pressure on the connector lock. Pull the lock outward, disconnect the operating rod spring guide and remove the spring guide and spring. Turn the barrel and receiver group right side up.

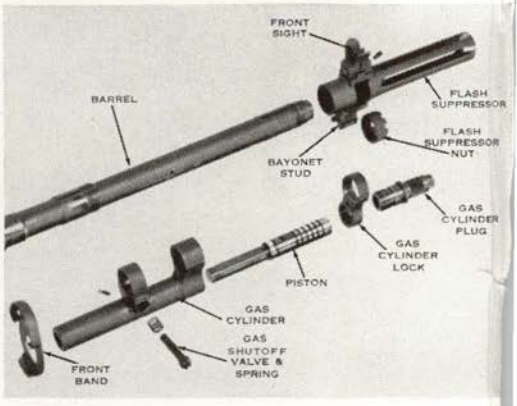
With the muzzle away from the body, retract the operating rod until the guide lug on the rear of the operating rod coincides with the dismount notch in the receiver. Lift the operating rod free and pull to the rear, disengaging it from the operating rod guide.

Grasp the bolt group by the roller and, while sliding it forward, lift it upward and outward to the right front with a slight rotating motion. The rifle is now fieldstripped and basic assemblies such as the bolt and the trigger groups may be disassembled, if required.

Disassembly of bolt group. (Figure 2) With the bolt in the left hand and the thumb over the ejector, insert the blade of a screw driver between the extractor and the lower cartridge seat flange. Pry the extractor upward to unseat it. The ejector will snap out against the thumb. Lift out the ejector assembly and the extractor plunger and spring. Remove the firing pin from the rear of the bolt. No attempt should be made to disassemble the roller from the bolt stud.

Disassembly of the rear sight. Run the aperture all the way down and record the reading for use in reassembling the sight. Hold the elevating knob and unscrew the nut in the center of the windage knob. Withdraw the elevating knob. Unscrew and remove the windage knob. Raise the aperture up about one-half inch. Place the thumb under the aperture and push upward and forward to remove the aperture, cover and base. Separate the rear sight cover from the rear sight base.

Figure 3. Gas system and flash suppressor disassembled.



Disassembly of the gas system and flash suppressor. (Figure 3) Loosen the set screw in the base of the front sight lug on the flash suppressor. Unscrew the flash suppressor nut and slide the flash suppressor forward off the barrel.

Loosen and remove the gas cylinder plug using the gas cylinder plug wrench. Tilt the muzzle down and remove the gas piston from the gas cylinder. Unscrew the gas cylinder lock and slide the lock and the gas cylinder off the barrel.

Slip the front band off the barrel. Push the hand guard forward and lift it from the barrel.

(Note: The bolt lock, charger guide, operating rod guide, sear release with selector and gas shutoff valve are semipermanent assemblies held together by spring pins. These pins must be driven out with appropriate drift punches to disassemble these parts.)

Disassembly of the trigger group. (Figure 4) To disassemble the trigger group, close and latch the trigger guard. Squeeze the trigger allowing the hammer to move forward. Hold the trigger housing group with the index finger of the right hand on the trigger and the thumb against the sear. Place the front of the trigger housing against a firm surface. Squeeze the trigger and push forward on the sear. At the same time, using the tip of a dummy cartridge, push out the trigger pin from left to right. Slowly release the pressure of the finger and thumb; this allows the hammer spring to expand. Lift out the trigger assembly. Remove and separate the hammer spring plunger, hammer spring and hammer spring housing.

Push out the hammer pin from left to right using the tip of a cartridge. Move the hammer slightly to the rear and lift out.

Unlatch the trigger guard. Push out the stud of the safety from its hole. Remove the safety and safety spring. Slide the trigger guard to the rear until the wings of the trigger guard are aligned with the safety stud hole. Rotate the trigger guard to the right and upward until the hammer stop clears the base of the housing. Remove the trigger guard.

Drive out the magazine latch spring with a suitable drift to remove the semipermanently assembled magazine latch and spring.

Disassembly of the stock group. Disassemble the butt plate assembly and butt swivel from the stock by removing the butt plate screws.

Remove the stock liner by unscrewing the stock liner screws using a suitable

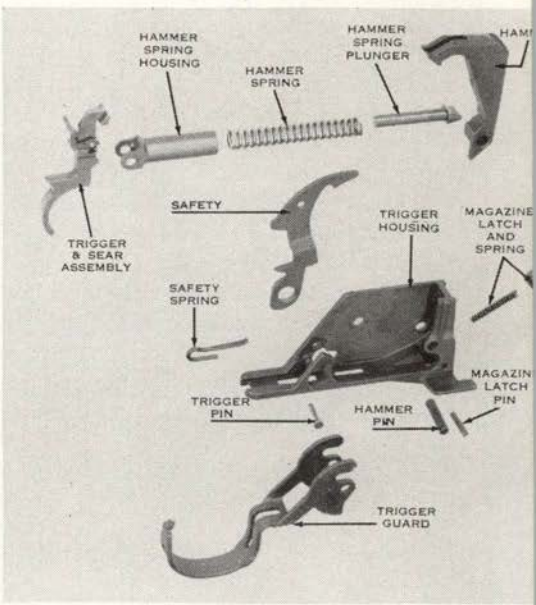


Figure 4. Trigger group disassembled.

spanner wrench. Press the heavy vertical bars at the rear of the liner together and push the liner out of the bottom of the stock, rear end first.

(Note: The front swivel bracket is permanently riveted to the forearm. The stock ferrule on the front of the forearm is a semipermanent assembly and should not be disassembled.)

Disassembly of the magazine group. (Figure 5) Hold the magazine upside down and lift the skirted end of the magazine base to disengage the detent. Slide the base off the magazine tube. Exercise care when removing the base because the magazine spring is under pressure.

Remove the magazine spring and magazine follower and separate them.

Assembly of the rifle. To assemble the rifle, reverse the disassembly procedure. However, the following instructions are provided to facilitate and to insure satisfactory assembly.

Hand guard. To assemble the hand guard when the gas cylinder and related components are in place, position the front end of the guard in the front band and snap the rear band of the hand guard assembly into the barrel grooves. The hand guard need not be reassembled prior to assembly of the gas cylinder and related components.

Trigger group. To assemble the trigger group to the stock and receiver, cock the hammer and swing the trigger guard to the open position. Insert the assembly into the receiver and close the trigger guard.

Gas system. To assemble the gas system, replace the front band, gas cylinder and gas cylinder lock. Tighten the lock by hand to its fully assembled position and then "back off" until the loop is aligned with the gas cylinder. Assemble the piston and the gas cylinder plug.

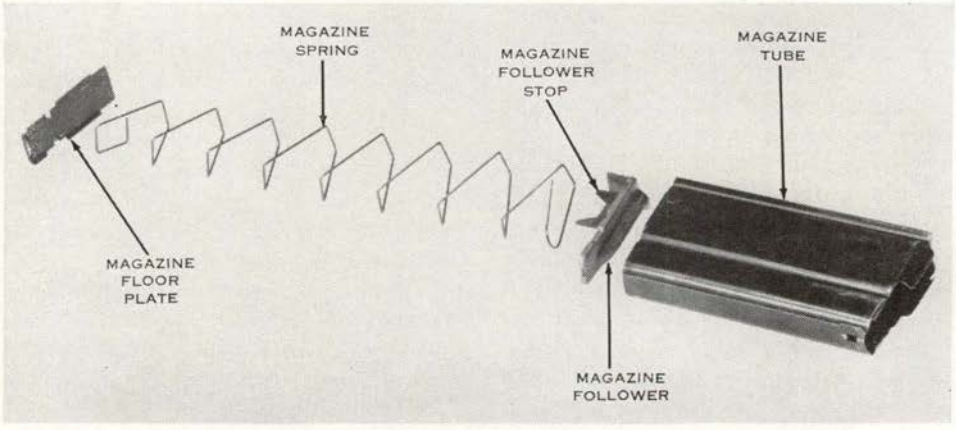
To prevent loosening under the vibration of firing, tighten each of the following components securely: flash suppressor nut, full dog point socket setscrew to lock the flash suppressor nut, gas cylinder plug (tighten with a torque of approximately 15 ft-lb) and the front sight screw.

The reassembled rifle should be hand operated without ammunition to check for correct assembly and for freedom of action of such components as the safety, trigger, hammer, operating rod, bolt, piston, selector, connector, bolt catch and magazine follower. The magazine should also latch and unlatch properly.

Loading and Unloading

To load the rifle place the safety in the SAFE position. Insert a loaded magazine into the magazine well, front end leading, until the front catch snaps into position; then pull backward and upward until the magazine latch snaps into position. Pull the operating handle to its rearmost position and release. This allows the top round to rise and the bolt to

Figure 5. Magazine group disassembled.



move forward, stripping and chambering the round.

Both rifles are capable of being loaded from the top by means of a multi-round clip loader or packet. To load from the top, pull the operating rod to the rearmost position and depress the bolt stop (the operating rod will remain to the rear if the magazine is empty); then insert the clip in the charger guide and press the rounds into the magazine. Repeat the operation and release the operating rod.

(Note: A satisfactory top loading clip or packet has not been developed; however, it is believed that it will resemble a Mauser clip and have a capacity of ten rounds.)

To unload the rifle place the safety in the SAFE position. Grasp the magazine placing the thumb on the magazine latch and squeeze the latch. Push the magazine forward and downward to disengage it from the front catch and remove the magazine from the magazine well. Pull the operating handle rearward to extract and eject a chambered round and to inspect the chamber. The rifle is then clear.

GENERAL DATA

Approximate weight	
M-14	8.7 lbs.
M-14, fully loaded with sling	10.0 lbs.
M-15	13.0 lbs.
Cyclic rate of fire	750 rpm.
Length of rifle (w/ flash suppressor)	44.14 in.
Length of barrel	22.0 in.
Rifling, four grooves, right-hand twist	12.0 in.
Sight radius (at 100 yds.)	26.75 in.
Trigger pull	5.5—7.5 lbs.
Muzzle velocity	2800 fps.
Chamber pressure, maximum	50,000 psi.
Maximum range	3500 yd.

Functioning

Operational power is derived from a revolutionary, new gas cutoff and expansion system. In this system gas is "bled" from the barrel through a port in its underside which registers with a port in the rear loop of the gas cylinder and a port in the wall of the hollow gas piston. As the gas enters through these ports it escapes from the open front end of the piston; and, pressing against the sealed front end of the gas cylinder, it drives the piston to the rear. This immediately places the ports out of line, trapping gas in the piston and gas cylinder and preventing entry of additional gas. The piston, in contact with the operating rod, is driven rearward a complete stroke (one and one-half inches). The resultant force is of sufficient magnitude to drive the operating rod and the bolt to their rearmost positions, and to compress the operating rod spring. The exhaust port in the bottom of the gas cylinder is uncovered as the gas piston nears the end of its stroke; this allows the expanded gases to escape. This new system is much smoother than the impingement system used in the M-1 rifle where gas strikes against the piston of the operating rod. As a result there will be much less wear and tear on the moving parts of the new rifle.

The reaction of the operating rod spring now returns the bolt and operating rod to their original positions.

The gas system functions in the same manner for all firing cycles unless the port in the gas cylinder is closed by the

MAJ ROY H. OESTREICH, a test officer with the Small Arms Department of the U.S. Army Infantry Board, has recently participated in experiments testing the new rifle about which he writes in this article. He began his military career when he enlisted in the Army in 1939. Three years later he received his commission through the Officer Candidate School at Fort Benning and was assigned to the Weapons Department at The Infantry School. He then served with the 84th Infantry Division in Europe following which he became a battalion S3 with the 9th Infantry Division at Fort Dix. Thereafter, he began his second overseas tour as S3 of Army Garrison Forces on Saipan. In 1949 he became Senior Army Instructor with the Officers Reserve Corps Group at Dothan, Ala. Transferred to Korea he served first as assistant G3 advisor with the Korean Military Advisory Group and later as assistant plans and operations officer, G3, of the Ryukyu Command on Okinawa. He received his present assignment on the Infantry Board at Fort Benning in 1955.

shutoff valve. When the valve is closed the gas system becomes inoperative, thus necessitating manual operation of the operating rod.

Semiautomatic fire. The operating rod moves forward under spring pressure; this carries the bolt assembly forward, stripping the top round from the magazine, chambering the round and locking the bolt.

During its rearward travel, the operating rod unlocks and carries the bolt assembly rearward; this action extracts and ejects the fired cartridge case and cocks the hammer. Ammunition is lifted into the path of the retracted bolt by action of the magazine spring and follower.

Full automatic fire. As the operating rod moves forward, the hammer remains in the cocked position until the shoulder on the operating rod engages the hook on the connector lever. Further travel of the operating rod moves the connector lever forward, rotates the sear release against the sear and disengages it from the hammer. This disengagement allows the hammer to fall and fire the chambered cartridge.

Because the firing pin is prevented from moving forward prematurely by the bridge in the receiver, the weapon cannot be fired until the bolt is locked (or driven into the locked position by action of the nose of the hammer against the cam on the rear end of the bolt).

After approximately one-eighth inch of rearward travel, the operating rod disengages from the hook on the connector assembly. This allows the spring-loaded connector assembly to move rearward and to rotate the sear release out of engagement with the sear. With the trigger held back, the sear engages the hammer.

If the trigger is released at any time prior to the firing of the last round, the hammer will be held in the cocked position by the trigger lugs (secondary sear), and automatic actuation of the sear release by the connector assembly will prevent release of the hammer.

Maintenance

Before the rifle is fired it should be disassembled and cleaned thoroughly; a light coat of oil should be applied to all metal parts except the bore, chamber and other parts which come in contact with the ammunition. Particular care should be exercised to lubricate the locking lugs of the bolt, bolt roller, bolt guides, cocking cam on the bolt, operating rod guide groove, camming surface of the operating rod and operating rod spring.

After the rifle is fired it should be immediately cleaned and lubricated. The

bore should be swabbed with a flannel cleaning patch saturated with either bore cleaner, or hot water and soap solution. It should then be brushed, dried with patches, and protective oil applied. The chamber should be cleaned with a cloth and oiled lightly. The piston, gas cylinder and gas plug should be disassembled and excess carbon deposits removed by careful scraping and cleaning with rifle bore cleaner. When all carbon has been removed the components should be wiped dry and oiled lightly. Other metal parts should be cleaned with a dry cloth to remove dampness, dirt and perspiration, and then oiled lightly.

Ammunition

Ammunition is available for these rifles in ball, AP and tracer. Both rifles will use the 7.62mm NATO cartridge developed by U. S. Army Ordnance. While this round is approximately one-half inch shorter and 12 percent lighter than the M-2 round used in the M-1 rifle, it has the same ballistic characteristics and retains the same killing power. The reduction in length and weight was made possible by using a new type powder and by eliminating the dead space found in the M-2 cartridge.

No method of packing ammunition for tactical use has been fully decided upon. However, it is believed that each rifleman will carry approximately 160 rounds: 20 rounds in the rifle; 80 rounds in magazines (4 magazines of 20 rounds—two magazines to each ammunition pouch of the recently adopted load carrying equipment) and 60 rounds in a 60-round bandoleer. A method for carrying additional ammunition for the M-15 rifle (each rifle will require approximately 320 rounds) still must be developed.

Sights

Sights of the new rifle (both the M-14 and M-15) are identical to those on the M-1 rifle and are adjusted in accordance with FM 23-5.

Marksmanship

The marksmanship training for the M-14 rifle will follow the methods established for the M-1 rifle, including the newly adopted Trainfire I training.

Marksmanship training for the M-15 rifle has not been announced, but it seems very likely that it will be little different from that now used for the BAR.

Teaching the new rifle system should be considerably easier and quicker than teaching four separate weapons to the individual rifleman. Instead of having to spend hour after hour learning the nomenclature, characteristics, assembly, disassembly and firing techniques for all the weapons now in use, the Infantryman will need know only one basic rifle. He will have more time available to learn how to fire this weapon effectively. The reduction in weight from the 20 pounds of the BAR to approximately 13 pounds of the M-15, plus the fact that the M-15 is more durable and reliable and uses the same ammunition package as the M-14 rifle, should improve the ability of Infantrymen in the future to deliver small arms fire where and when required.

Special Weapons Officers

Infantry Officers who attend Infantry School advanced and associate advanced courses subsequent to 1 January 1958 will have an opportunity to qualify for the award of the prefix 5 (Special Weapons Officer) to their MOS. Award of the prefix will be made on a selection basis and will not be made retroactive to officers who attended courses prior to 1 January 1958.

A NEW

This material was assembled by Lt Col Hawke from the latest and most valid information on Soviet tactics available to Department of the Army. It is as complete as security limitations permit. This information will assist battle group commanders, their staffs and subordinate unit leaders to make a more realistic appraisal of Soviet tactical capabilities and limitations. It also will help lower level commanders to anticipate Soviet actions and to devise effective countermeasures. The basic concepts discussed can be expected to apply also to the Infantry of satellite nations of the USSR, with possible minor changes in tactics based on terrain, national characteristics and limitations imposed by shortages of equipment and materiel.—*Editor*

The Soviets have modernized their ground forces and have revamped their tactics for atomic or nonatomic warfare.

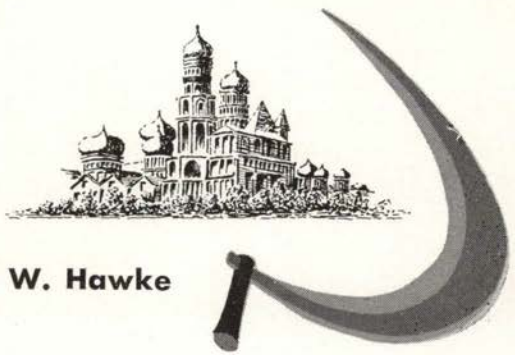
LOOK AT SOVIET TACTICS

Current Soviet tactical doctrine stems from tactical principles developed by the Soviet military to meet the requirements of nonatomic or atomic warfare. In the period immediately following World War II, the Soviets evolved tactical doctrine molded around effective employment of the conventional weapons then available or in the process of development. They undertook a vast modernization program which produced a modern, highly mechanized and well-balanced fighting force operating under new field service regulations. When the results of these efforts became known to us it was apparent they had exceeded capabilities originally credited them. Now the Soviets have adapted their regulations and doctrine to nuclear concepts. But their efforts will not stop here. They are continuing to search for improved solutions to the problems generated by nuclear weapons. Therefore, further changes in Soviet tactical doctrine can be expected.

Present-day Soviet tactical doctrine emphasizes flexibility of control and the taking of steps to insure its continuity. Like our own doctrine, it seeks full exploitation of the mass-destruction effects of nuclear weapons and the achievement of dispersion for protection against them. Emphasis also is placed on the continuation of operations day and night and on a flexible defense, with a strong antitank capability. It recognizes the need for a deep and intensive battlefield intelligence collection effort and for effective anti-atomic defense.

In developing combat forces for tactical operations, the Soviet Army has created three basic types of divisions: rifle, tank and mechanized.

Rifle Division. The rifle division consists of three rifle regiments, supported by two artillery regiments (122mm howitzers, 160mm mortars and 85mm guns), a medium tank assault gun regiment (T-54 tanks and 100mm assault



By Lt Col Willard W. Hawke

guns) and an antiaircraft artillery regiment (85mm AA guns, 57mm AA guns and 14.5mm AA machineguns).

Mechanized Division. The mechanized division is organized with three mechanized Infantry regiments (T-54 tanks and 122/152mm assault guns), a medium tank regiment (T-54 tanks), a heavy tank assault gun regiment (122mm heavy tanks and 122/152mm assault guns), two artillery regiments (122mm howitzers, 85mm guns and 160mm mortars) and an antiaircraft artillery regiment (85mm AA guns, 57mm AA guns and 14.5mm AA machineguns).

Tank Division. The tank division has a preponderance of armor and relatively little Infantry. It consists of three medium tank regiments (T-54 tanks), a heavy tank assault gun regiment (122mm heavy tanks and 122/152mm assault guns) and one mechanized Infantry regiment (T-54 tanks and 122/152mm assault guns). The supporting artillery consists of two artillery regiments (122-mm howitzers, 85mm guns and 160mm mortars) and an antiaircraft artillery regiment (85mm AA guns, 57mm AA guns and 14.5mm AA machineguns).

USSR Infantry follows generally a triangular organizational pattern. At each level, beginning with the rifle squad, necessary supporting arms or supporting units provide a well-balanced combat organization.

Rifle Regiment. The Soviet rifle regiment consists of three rifle battalions and 10 separate units. Its organic support weapons are found in the mortar battery, armed with six 102mm mortars; the assault-gun company, equipped with six 85mm assault guns; the antitank battery, with six 85mm antitank guns; and the antiaircraft machinegun company, equipped with six 14.5mm machineguns. Artillery, tanks, engineers and other supporting units may be attached to the rifle regiment from division.

Rifle Battalion. The basic tactical element of Soviet Infantry is the rifle battalion. It consists of three rifle companies organized into three rifle platoons of three squads. Each rifle squad has a light machinegun. The Soviet rifle company also has a machinegun platoon with three light machineguns. The rifle battalion has a mortar company armed with six 82mm mortars, a machinegun company armed with nine heavy machineguns, an antiaircraft platoon armed with three 14.5mm machineguns mounted on wheeled carriages and an artillery battery equipped with two 57mm antitank guns and four 82mm recoilless antitank launchers. Additional supporting weapons such as artillery and tank units may be attached to the rifle battalion from regiment and division.

Tactics for the Attack

The Soviet Army, like the U. S. Army, stresses offensive action as the decisive factor in the success of military operations. The defense is considered only as a temporary expedient to be used either while awaiting an opportunity for counteroffensive action or for economizing forces. The Soviets tailor their offensive tactics to the enemy's defense. Combat formations and echelon arrangements are determined on the basis of the mission and the tactical situation rather than on strict adherence to any prescribed set of regulations. The basic organization of Infantry units is a combined-arms team. Such organization reduces to a minimum the necessity for preliminary regrouping. Tailoring a force to meet a specific requirement is confined mainly to allocation of additional armor, engineer and artillery support.

Mass and Momentum

Soviet doctrine for offensive tactics is based on the employment of mass and the establishment and maintenance of momentum. All tactical decisions before and during the attack are guided by these fundamentals. Mass is achieved by a combination of manpower and firepower and is not dependent upon numbers alone. Human sea tactics are no longer employed. The Soviets attempt to maintain a superior ratio of combat power over the enemy throughout the attack to insure a rapid forward movement. Momentum is maintained by timely commitment of second echelon troops and massive artillery and air support.

Tactical Maneuvers

Soviet attack operations employ one of three basic maneuvers: breakthrough, envelopment or encirclement.

The Breakthrough. The Soviets consider that under normal conditions of an uninterrupted front or in nuclear warfare, the outflanking and by-passing maneuver is no longer possible until the attacking force first breaks through the enemy's front line division reserves. Therefore, almost every attack begins with a breakthrough. According to the Soviets the breakthrough is the most complex and most important stage of every operation since continuing, and more decisive maneuver, is contingent on success of the breakthrough. A breakthrough is planned as a prelude to envelopment or encirclement, or it is designed to split enemy forces into separate, more easily destroyed groups.

Envelopment. This may be either a close or wide envelopment. It is executed when an open flank exists or has been created by a breakthrough. It is intended to lead to partial or complete encirclement of the enemy, or of that portion of his forces that have been selected for attack. A close envelopment is generally carried out in coordination with a frontal attack. A wide envelopment may be a separate operation and need only be in conjunction with a frontal attack.

Encirclement. This is similar to a double envelopment. It is the most decisive maneuver, but is practicable only when Soviet forces have a very great preponderance of strength on the selected front. It is usually planned and conducted at a higher echelon than division and is preceded by a breakthrough on at least two sectors. Two converging offensives are carried out simultaneously or in close succession with coordinated frontal attacks. Encirclement is complete when the converging forces meet and sufficient combat power is available to beat off enemy counterattacks or to continue the offensive, and at the same time to destroy the encircled enemy.

Superiority of Attacking Forces

The Soviets desire to achieve a ratio of at least three-to-one in combat power over the enemy in the sector of the main attack. The bulk of Soviet combat power is reserved for the main attack and economy of force measures are employed elsewhere along the front.

Supporting Arms

Artillery. There have been no indications that the Soviets attach any less importance to nonatomic artillery since the advent of nuclear weapons. They continue to emphasize the development of nonatomic artillery. However, we can expect that they are developing artillery capable of firing atomic warheads and that they are also experimenting with rockets and missiles for support of their ground armies.

Artillery fire support during a breakthrough is termed "an artillery attack" by the Soviets. This is divided into the artillery assault preparation, artillery assault support and artillery protection for

combat in depth. The Soviets have retained the principle of concentrating large amounts of artillery per linear mile of main attack or breakthrough front. Mortars normally constitute 30% of the artillery in the attack. This density not only is achieved by bringing up reinforcements from reserve artillery units, but also by detaching artillery regiments, all the mortars and even antitank battalions from all the units of the second echelon of attacking divisions, particularly for the first and second phase of the artillery attack. For even greater artillery concentration, a part of the organic artillery from the secondary sectors of attack also may be moved to the breakthrough sector.

Armor. The primary use of medium tanks in the attack is direct support of Infantry. For this purpose the Soviets use organic tank regiments in Infantry divisions to support first echelon units. Attached tank regiments from corps and army are used to support second echelon units and to constitute a tank reserve. The distance between tanks in combat is approximately 30 to 50 yards. They consider normal density of tanks to be one or two platoons in support of each first echelon rifle company. In addition, their assault guns are essentially tanks with fixed turrets. Although tanks and assault guns precede the Infantry in an attack, they closely coordinate their activities with the Infantry so that each can support the other. The leading line of tanks and assault guns does not normally advance more than 200 to 400 meters ahead of the Infantry.

Soviet tank strength is rated at 28,000 T-54s (medium tanks) which should be adequate to support any large scale conflict. If only small numbers of tanks are available to an attacking regiment, they are employed in support of the first echelon. If the first echelon attack slows down, tanks and assault guns are regrouped to support the attack of the second echelon when committed through or around the first echelon. The Soviets do not consider tanks as an antitank means since tanks are exposed to unprofitable losses when employed in this manner. Only when firing from covered positions, when striking at the flank of an already disorganized unit or when enjoying an absolute numerical superiority, can tanks accept combat with enemy tanks. The Soviets fight enemy armor with assault guns, heavy tanks and large numbers of antitank guns.

Air Force. There is no single Soviet air force. Instead there are several air forces: Air Force of the Soviet Army, Long-range Aviation, Fighter Aviation of Air Defense, Naval Aviation and Aviation of Airborne Troops. The Air Force of the Soviet Army comprises more than half of the entire Soviet air forces and is divided into a number of air armies. Each air army is under command of a front (army group) and, except for the necessary coordination of effort with air armies on either flank, their mission is to support the front to which they are subordinate.

The Soviets term the entire air force operation in support of a ground attack an "air attack." Its purpose is to insure air superiority and uninterrupted support of the ground attack. It is divided into two phases: air preparation for the ground attack and air support for the attack, including the battle through the depth of the enemy's defensive positions. Command in the air force during an attack is centralized. Most of it is in the hands of the commander of the front (theater) through the commander of the air army. Lower units, armies, corps and divisions, rarely have air units subordinated to them. The air army belonging to the front supports it by allocating a definite number of sorties supplied by the air divisions. Ground commanders, in co-

operation with air force representatives and in accordance with the allocated number of sorties, call for specific strikes from air divisions. Through the air representatives at their particular level, commanders of Infantry units maintain contact with aircraft at airfields and in the air.

Stages of Soviet Attack

General. The Soviet Army probably makes more detailed preparations for an organized attack than any other army in the world. Thorough reconnaissance is conducted to provide a complete picture of the enemy. Particular efforts are made to discover the location of atomic delivery means and installations, obstacles and fortifications supporting the defenses, the location of open flanks, boundaries between units, strength and dispositions of reserves that may interfere with the Soviet attack and to capture prisoners for interrogation. Combat patrols and intelligence teams are frequently employed for these missions. The most advantageous front-line sector for the main attack is selected very carefully. The area from which the main attack is to be made is, whenever the situation permits, prepared secretly by digging assault trenches and weapons positions before the launching of the attack. Elaborate camouflage measures are utilized to screen the preparation and development of the area from which the main attack will be made. Counterintelligence measures are rigidly enforced. All orders at battalion and lower levels are oral. Reconnaissance missions are undertaken by troops already in contact in order not to betray the presence of new units. Prior to the attack, considerable effort is exerted to deceive the enemy. Reconnaissance operations are conducted along a much wider front than that of the planned attack to conceal the true location of the Soviet main attack. Feints are made and dummy positions are constructed. Detailed rehearsals of planned operations are common and are conducted, whenever possible, on terrain similar to that over which the attacking troops may operate during the general offensive. These rehearsals usually are conducted in the concentration area and include all units so that participating personnel will become acquainted with their part in the operation.

Concentration Area. Soviet Infantry troops designated to participate in an organized attack by a large Soviet field unit usually are assembled in concentration areas located 15 to 20 miles in rear of the attack positions. Criteria for the selection of these areas are adequate concealment and suitability for accomplishing surprise in the attack. For this reason, it is common for concentration areas to be located far to the flank of the area from which it is planned to mount the main attack. Alternate concentration areas are selected and utilized in the event atomic strikes preclude the use of the initial area.

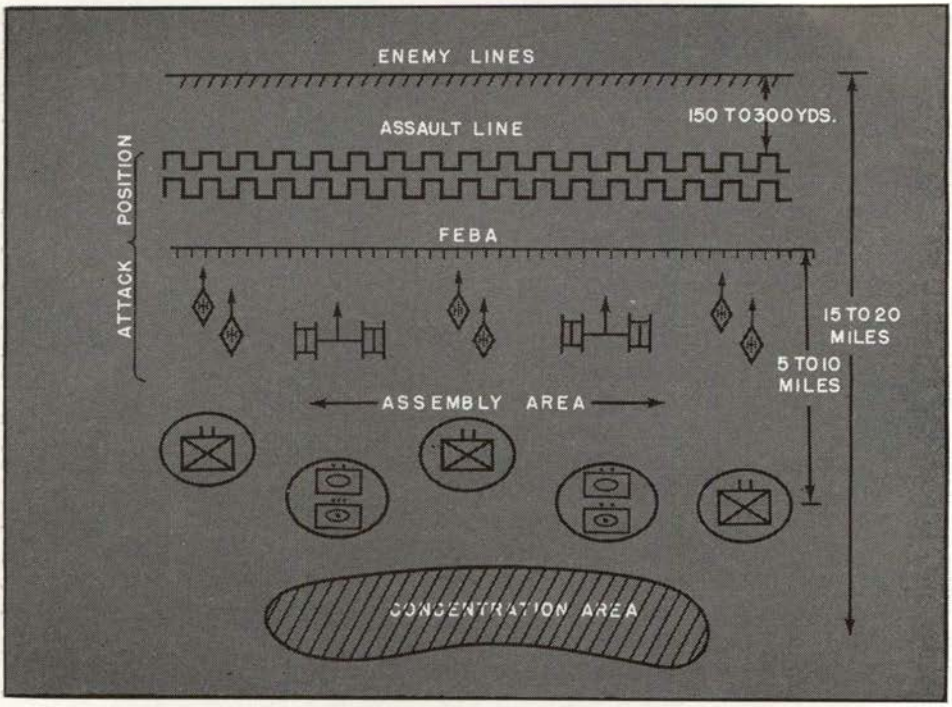


Figure 1. Schematic layout of Soviet offensive preparations.

Assembly Area. From the concentration area the forces participating in the attack are moved in small units — frequently by infiltration methods — into forward assembly areas. This movement usually is made at night, but if it should be carried out in daylight, well concealed routes are used. Assembly areas for Soviet Infantry units are five to 10 miles behind the frontline. Alternate assembly areas are selected. Attacking troops normally occupy the assembly area 24 to 48 hours before the attack.

Attack Position. Soviet doctrine advocates the construction of an attack position from which assaulting troops start the attack. The forward edge or forward trench of the attack position is called the assault line and is normally located 150 to 300 yards from the enemy forward defenses. When contact with the enemy has existed for some time and Soviet troops have established defensive positions prior to the attack, the attack position generally is incorporated with the forward edge of the Soviet battle area. The depth of the attack position depends upon the mission, terrain, strength of forces to be committed, formations and time available. If no contact exists prior to the attack, Soviet screening forces establish covering positions as close as possible to the enemy's main defenses. These covering positions form the forward portion of the attack position. When the enemy is engaged in delaying or withdrawal operations, the Soviets normally do not use an attack position but attack directly from the assembly area or from march formations. The degree of development of the attack position depends on the terrain, the strength of the enemy defenses and the time available before the attack. The or-

ganization of this position includes: two to three trenches, troop dugouts, artillery fire positions, tank shelters, command posts, observation posts, obstacles and ammunition dumps. These preparations take place during darkness and under cover of artillery fire directed against the opposing positions to prevent detection. Counter-reconnaissance screens are utilized to shield preparations from enemy patrols. During the day trenches and emplacements are carefully camouflaged. Construction of the attack position is generally prepared by Infantry units already in contact with the enemy under the supervision of combat enneers or by covering forces, if no prior contact exists (Figure 1).

Attack Formations

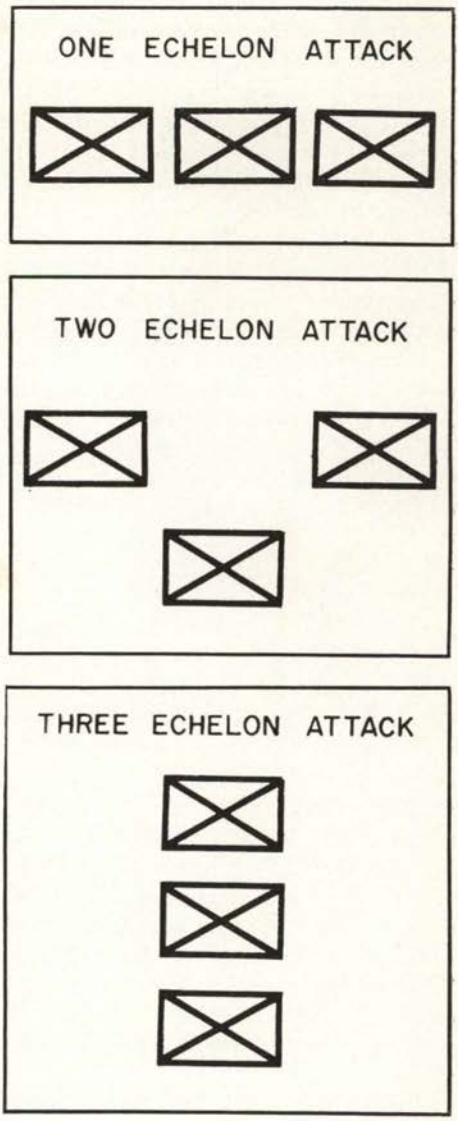
Combat formations used by the Soviet Army are basically one, two or three echelons. The formation used by the Soviet battalion or regiment is related to the mission and the combat formation of the parent unit. If, for example, a division attacks in two echelons, the leading regiments normally would attack in two echelons. The one echelon formation has all units in line (Figure 2). The two echelon formation employs two units up and one back, or one up and two back. The two-up formation is by far the most common for Infantry regiments. In a two echelon formation the second echelon is usually widely dispersed but may be positioned in the center directly behind the first echelon or it may be placed to the right or left of center. A three echelon formation is a column formation and operates on an extremely narrow front. The Soviets frequently used this formation during World War II but it is seldom used today.

The second and third echelons of a formation may appear to be reserves. But they are not true reserves since they are committed according to a preconceived plan. Their objectives and routes are prescribed in the initial attack order. Soviet units do withhold a true reserve. It is quite small, about 1/9th of the command.

Frontages for Main Attack

Assault frontages normally assigned

Figure 2. Assault formations.



Soviet Infantry units are:

Rifle Corps:	Up to	13,000 yards
Rifle Division:	Up to	7000 yards
Rifle Regiment:	Up to	4000 yards
Rifle Battalion:	Up to	2000 yards

Fire Support

Preparatory fires combined with direct air preparation are extremely intense and very thorough. Special attention is given to the first fire assault when maximum losses may be inflicted upon surprised enemy troops. During preparations, it is necessary to neutralize the enemy's entire immediate depth, including his artillery, mortars and command posts. The Soviets also use artillery in a direct fire role to destroy targets located in the enemy's forward battle positions. In addition to battalion and regimental artillery, the Soviets use a portion of division and corps artillery of large caliber for this mission. Artillery support for the Infantry-tank assault is usually supplied by a single or double rolling barrage over the depth of the enemy's entire main defense position. This barrage is shifted in front of the Infantry and tanks by phase lines on signals from the Infantry. The Soviets devote great attention to antitank protection during the assault. The basic antitank role is played by the antitank artillery equipped with 57mm, 85mm and 100mm guns. The Soviet rifle battalion, with its organic and attached antitank weapons and assault guns, is expected to beat back the counterattack of one enemy tank company; the regiment must beat back the counterattack of one enemy tank battalion and the Soviet division should be capable of repulsing the counterattack of the defender's tank division. To accomplish this, antitank artillery reserves are formed in all units. They usually move between the first and second Infantry echelons during an attack, always ready to engage enemy tanks.

The air force initially operates against targets which cannot be observed from ground level, such as enemy atomic delivery locations, artillery and reverse slope positions. The air force also neutralizes key points in the enemy's defense system. The strongest air attack is delivered just before the beginning of the ground attack against targets which may directly impede the advance.

Execution of the Attack

The Infantry-tank attack moves forward in echelons when preparatory fires are completed (Figure 3). In an offensive against a well-prepared position, Soviet combined-arms teams attack on relatively narrow frontages without too much dispersion in forward echelons. The attacking echelons are not merely single skirmish lines of Soviet troops and tanks. Each echelon has depth. For example, the first echelon of a rifle regiment may consist of four rifle companies attacking abreast, supported by two additional rifle companies. The second echelon of a rifle regiment may consist of the remaining three companies deployed in line. On the division level, four rifle battalions attacking abreast followed by the remaining two battalions of the forward rifle regiments may constitute the first echelon. The second echelon consists of the three deployed battalions of the third regiment. The assault phase starts at the assault line and usually ends after the opponent's battle position has been breached. The assaulting units initially drive straight ahead in essentially a frontal attack. Once within the defensive positions, Soviet forces execute shallow and deep envelopments. The assaulting troops of the first echelon, using marching fire, break through opposing defenses destroying strong points wherever they can. If strong points delay the advance, the first echelon bypasses them and continues to the objective. This echelon seeks to penetrate as deeply as possible. Engineer assault groups with the

mission of breaching obstacles or destroying fortified positions may accompany this echelon. Soviet doctrine stresses that the first echelon must not lose its momentum. For this reason the Soviets advocate that it must keep as much firepower to the front as possible, firing on the move rather than from fixed positions. Supporting Infantry weapons and antitank guns must displace forward rapidly to be in position to provide continuous close support. Assault guns are included in the first wave with the dual mission of direct-fire mobile artillery and antitank protection for tanks. The primary mission of Soviet tanks is to further the advance of the Infantry by destroying opposing Infantry and crew-served weapons, firing on targets of opportunity and to assist in holding specified sections of terrain. Close-support artillery fires are shifted progressively forward, providing continuous fire support for the assaulting troops. Other artillery units fire on defensive positions situated deep in the opposing force's area.

The second assaulting echelon follows the first at a relatively close distance. The second echelon has the mission of reducing the strong points bypassed by the first echelon and, if necessary, maintaining the momentum of the attack by passing through the first echelon to seize the objective. The second echelon also may make deep and shallow envelopments within opposing defenses and may assist in repulsing hostile counterattacks.

Combat Within Enemy's Defense

The breakthrough of the first defensive position is followed by a critical

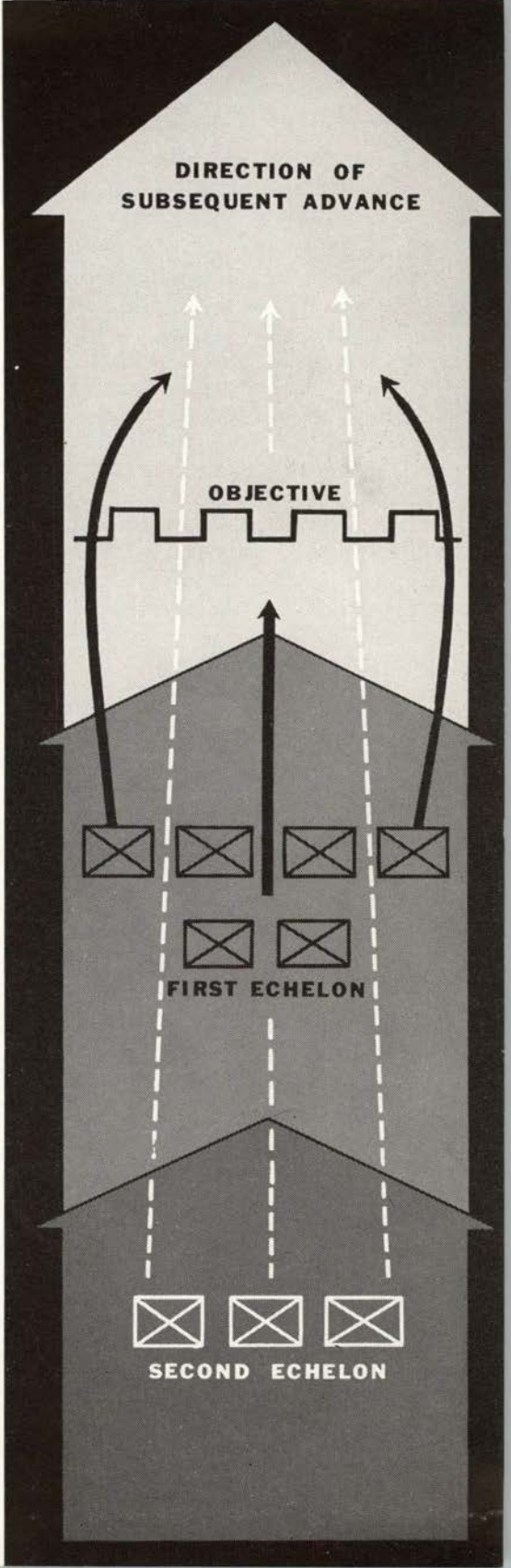


Figure 3. Execution of Soviet attack and maintenance of momentum. The first echelon attempts to take the objective rapidly and may bypass strong points. The second echelon destroys bypassed strong points and assists the first echelon. It may pass through the first to maintain momentum and may execute flanking and encircling movements.

moment before the second phase of the attack, called by the Soviets, "The Battle in the Depth of the Enemy Position," begins. The situation calls for new tactical decisions, ammunition resupply and for the shifting of artillery fire from the barrage to combat support in depth. To insure further advance of the troops, it is necessary at this moment that the entire tactical depth of the defense be properly neutralized. Soviet doctrine considers this phase of the attack a difficult transition period. During this phase, the Soviets are most vulnerable to counterattack. As long as the momentum of the attack continues, succeeding echelons concurrently carry on operations to reduce strong points, enlarge the breach, destroy supporting weapons and set the stage for pursuit. While advancing to the enemy's second and third defensive positions, the Soviets expect their attacking units to be exposed to stronger enemy counterattacks. Small counterattacks, up to a platoon in strength, are driven back by the assaulting battalions. Counterattacks from company to battalion strength, with tanks, are repulsed by the regiment's second echelon and with antitank reserves. Still stronger counterattacks are parried by the division, by atomic fire, by concentrations of nonatomic artillery fire and air attacks, by entrenchment and by the necessary regrouping of forces.

Pursuit

The Soviets make plans for shifting into a pursuit after breakthrough of the defensive position. The favorite method of pursuit is what they term "Parallel Pursuit." In this operation they seek to send swift mechanized, or in difficult terrain, foot columns parallel to the withdrawing hostile force on the enemy's flanks. The Soviet forces move parallel to the route of withdrawal to strike the retreating force on the flanks and rear. They also maintain pressure on the rear of the withdrawing unit to slow its movement so their fast moving columns can reach terrain from which they can block the retreating force. A secondary mission for the pursuing units is the destruction of command posts, communication centers, supply installations, reserves and supporting units.

Tactics for the Defense

The Soviet Army stresses the offensive to achieve success in combat. The defense, however, is recognized as a necessary part of modern warfare. It is defined by the Soviets as a method of fighting by which forces can withstand superior enemy forces by the exploitation of terrain, fortification and firepower. The objectives of the Soviet defense are to halt the advance of the enemy, to destroy the greatest possible number of enemy troops and to initiate counterattacks and shift into the offensive.

The Soviets consider they must go over to the defensive under the following conditions:

1. When it is necessary to create a striking force for an attack in one sector while weakening another sector. The weakened forces will then go over to the defensive.

2. When a clash with superior enemy forces is expected, particularly where, in the course of an offensive, it becomes necessary first to repulse a strong counterthrust in order to resume the attack.

3. When it is necessary to hold a bridgehead on a river or a beachhead which will later be used as a jumpoff for an offensive.

4. When a planned attack does not succeed.

5. When conditions are created for stopping a withdrawal.

6. When an offensive ends and forces

are lacking for its resumption, or a subsequent offensive must be prepared.

The Soviet Army employs two basic types of defense: a static position defense on a wide front and a mobile defense similar to our delaying action. The Soviets do not make a distinction between defense and withdrawal. Any forward movement is attack; any rearward movement or stationary action is defense.

Position Defense

In establishing a position defense the Soviets organize critical terrain into a series of strong points on a wide front and in great depth. This concept allows the defender to disperse his forward defenses so they are less vulnerable to nuclear weapons. The Soviets withhold strong mobile reserves in the rear to defeat an enemy attack. Strong points of the forward defenses defend their areas and channel the enemy into previously selected killing zones, facilitating the launching of counterattacks against the enemy's flanks. The counterattack is the decisive element of position defense because penetrations of the forward defenses are expected or even invited in order to place the enemy in a disadvantageous position.

Withdrawal

The withdrawal is referred to by the Soviets as an operation which is employed when a temporary loss of terrain is necessary to create conditions more favorable for some other action. A withdrawal may be executed for one or more of the following purposes:

1. To draw the enemy into an unfavorable situation.
2. To avoid combat under undesirable conditions.
3. To exploit more favorable terrain.
4. To permit the use of a portion of the force for offensive action.

Security for a division in the withdrawal is usually furnished by a corps covering force organized from mechanized or tank units from the corps reserve. The mission of the covering force is to delay, restrict or divert the enemy and to cover the withdrawal of the forward elements. Disengagement takes place under cover of darkness whenever possible to facilitate deception and secrecy. The actual breaking of contact with the enemy may be assisted by smoke, bad weather, counterattacks, massed nonatomic artillery and air attack, and/or by nuclear strikes. Small units remain in contact to cover the withdrawal of the main body of their parent unit by resistance and deception. Once a unit has broken contact it passes through the covering force and moves to the rear to initiate some other action. A withdrawal can only be authorized by the highest commander responsible for the operation. This will usually be the field army commander. The commander ordering a withdrawal designates the location to which the force will move and the action to be taken after the movement.

Mobile Defense

The Soviets do not use the term "mobile defense." However, they do have a defense of this type which is in effect a large-scale withdrawal over long distances, trading space for time by utilizing terrain and obstacles, meanwhile inflicting maximum punishment on the enemy without becoming decisively engaged. The eventual objective of this type of defense is to wear down the enemy force through attrition or over-extended lines of communication, thus making him vulnerable to counteroffensive action. The mobile defense is organized as a series of delaying positions on successive lines. The technique employed in the conduct of this defense is a controlled withdrawal with units leapfrogging each other from one previously se-

lected delaying position to the next. Normally two delaying positions are occupied concurrently, with two-thirds of the strength in the forward position. When units occupying the forward position withdraw through the second position, their covering force elements reinforce this position while the remainder continues rearward to a new position. Weapons are employed at maximum range. The widest possible use is made of ambushes, demolitions and obstacles. Every possible effort is made to delay the advance of the attacker. Each position is defended by fire and counterattacks until orders are received for withdrawal to the next position. Once the enemy loses his capability to continue the advance, the Soviets form a static defense on a line of their choosing, or initiate a counteroffensive.

Supporting Arms

Artillery and Antitank. Soviet doctrine states, "Defensive fire is a decisive force. Modern battle is primarily a battle for fire superiority. Victory will go to that side which succeeds in achieving fire superiority over its foe." During the approach of enemy tanks and Infantry, the artillery uses the following types of fire:

1. Long-range preparations on approaches to the position.

2. Concentrations of fire on enemy assembly areas.

3. Barrages with the highest possible density of fire which are shifted over a depth of approximately one mile in front of the position. These are rolling barrages and are shifted in 300 to 500 yard intervals. Tanks are engaged by direct-fire methods when they are 300 to 400 yards from the forward edge of the battle area.

4. Stationary barrages with the objective of defeating an Infantry assault. These barrages are laid down in front of the forward edge of the battle area and within the depth of the battle area.

In addition to these types of fire, one of the important tasks of artillery is counterbattery fire. This is a duel, fought by the army and corps artillery groups which have means of instrumental reconnaissance (sound and flash units) at their disposal and also by division and regimental artillery groups during the intervals between enemy assaults. Army and corps artillery groups make firing data available to the divisions and regiments. Just before the attack, the artillery and air force carry out their respective counterpreparations. An important function of the artillery is to combat the attacker's tanks. Guns exceeding 122mm in caliber begin to fire at tanks during the period of long-range preparations, using concentrations of fire and moving barrages. Chief reliance for antitank protection is on direct-fire artillery. Direct-fire guns are placed in company and battalion strong points. These guns are organized in depth throughout the main defensive zone on tank-threatened avenues of approach. For maneuvering purposes, the Soviets form antitank reserves amounting to about one battery per regiment and form a battalion to a regiment per division. The antitank reserves are reinforced with engineers, flame throwers, and if necessary, with tanks. These reserves form special antitank areas. All artillery, in sheltered fire positions, is zeroed in on tank approaches, forming an antitank area with a 360-degree field of fire. Guns employ direct fire for as much as one mile and howitzers employ such fires for ranges of 800 to 1000 yards. Soviet doctrine insists that all artillery pieces be prepared to move to direct fire positions.

Armor. The one method of utilizing division tank units in the defense is to use them as static or mobile fire points. For this purpose the division attaches

tanks to Infantry regiments or battalions to reinforce antitank fires. A second means is to use them in tank ambushes organized on tank approaches. They are well camouflaged and located to achieve flanking fire on enemy tanks. The strength of an ambush ranges from a platoon to a company of tanks, reinforced with antitank artillery, engineers and Infantry. The tanks open fire from ambush and go over to the attack only if the ratio of forces is very favorable. The third method is to employ the tanks as the division or corps tank reserve for counterattacks. A division tank unit occupies an assembly area and prepares several attack positions in the direction of likely counterattacks. If terrain does not permit preparation of attack positions, several lines of departure are selected. In the attack position or on the line of departure, the tank reserve engages enemy tanks with fire from a stationary position and goes into the attack only if the enemy has been seriously disorganized. The attack is conducted only when there is considerable numerical superiority over enemy tanks, preferably on his flank or rear. Major tank units — tank or mechanized divisions — usually are employed as an army or corps reserve for larger counterthrusts against an enemy spearhead which seriously jeopardizes the tactical defensive zones. Tank or mechanized divisions are rarely used for independent defense of a frontline sector.

Air Force. The air force carries out important missions during the period of enemy attack preparations. Its reconnaissance flights must discover the location of the enemy's atomic delivery means, the direction of the enemy's main attack and prevent the enemy's air force from gaining constant air superiority. With air attacks on enemy troop concentrations, the air force hampers the enemy in his preparations for the attack. Before the attack begins, the air force takes part with the artillery and atomic weapons in counterpreparations. During the attack, the air force action is concentrated on deeper enemy echelons and reserves, particularly on large tank formations. It also gives close support to counterattacks by hitting enemy ground forces and protects the counterattacking force from enemy air attacks. All available air power is concentrated for support of major counterattacks.

Lt Col Willard Wesley Hawke, a member of the Tactical Department, United States Army Infantry School, received his commission at Fort Benning in 1942. During World War II he served as a rifle company commander with the 275th Infantry Regiment in the European Theater of Operations. At the outbreak of the Korean conflict he became regimental S2 of the 27th Infantry Regiment in Korea. Returning to the states, he was assigned to the G2 section of Sixth Army headquarters where he served until 1953 when he returned to Europe and was assigned to the G2 section of the Berlin Command. The following year he assumed command of Special Troops, TRUST Forces, Trieste, Italy. He later became commander of the 1st Battalion, 350th Infantry Regiment, United States Forces, Austria, and Southern European Task Force at Vicenza, Italy. In May of last year he returned to the states and was subsequently assigned to the United States Army Infantry School. He attended the Infantry Officers Advanced Course in 1944 and the Command and General Staff College in 1952.

Organization of Position Defense

The rifle corps is the basic tactical unit in a wide-front position defense and is responsible for establishing security outposts well forward of the defensive area.

Zones. The position defensive system may be divided into four zones: security zone, main zone of resistance, in-

termediate zone and second defensive zone (Figure 4).

Security Zone. The security zone may extend 10 miles or more forward of the main zone of resistance. Forward detachments and obstacles comprise the basic strength of the security zone. A forward detachment may consist of an Infantry company or battalion reinforced with a platoon of tanks, a platoon of engineers and one or two batteries of artillery. Relying on a system of obstacles and previously prepared resistance points, they inflict maximum punishment upon the enemy, cause him to deploy and detain his advance. Within the security zone is located a line of combat outposts which the Soviets call a combat security line. The combat security line is located 1000 to 2000 yards in front of the forward edge of the battle position and is usually organized by one reinforced platoon from each frontline battalion. In organization, mission and conduct, it is very similar to our own combat outpost.

The Main Zone of Resistance. The main zone of resistance normally extends from six to eight miles in depth and is occupied by the rifle divisions in the corps defensive zone. Normal Soviet Infantry unit defensive frontages in the main zone of resistance are:

Rifle Corps:	Up to 60,000 yards
Rifle Division:	Up to 30,000 yards
Rifle Regiment:	Up to 15,000 yards
Rifle Battalion:	Up to 8000 yards

The ground is organized by establishing a series of reinforced company or battalion strong points on critical terrain features. Strong points are organized in a system of interlocking trenches and firing positions providing all around defense. Dummy positions are frequently constructed and all positions are well camouflaged. Alternate firing positions are developed and improvement of the entire defensive system continues as time permits. Every effort is made to deceive the attacking force as to the exact location of the Soviet defense. The frequent, and often large gaps between strong points are covered by observation, listening posts, patrols, obstacles and fire. Obstacles are planned within the zone of a rifle division to create continuing difficulty to the attacker.

The Intermediate Zone. The intermediate zone is from eight to 10 miles deep and is designed to prevent an unresisted direct attack on the second defensive zone after a breakthrough of the main zone of resistance. The intermediate zone is deep enough to force the enemy to regroup his forces and to displace the bulk of his artillery forward before attacking the second defensive zone. The intermediate zone contains the division reserve, elements of the corps reserve, strong points, artillery positions, special antitank defenses and switch positions.

The Second Defense Zone. The second defense zone extends six to eight miles behind the intermediate zone and contains numerous strong weapons positions protecting corps supply centers and installations, road junctions, bridges and passes leading to the rear. Mechanized forces, capable of launching swift counterattacks, are held mobile in or just forward of this area.

Conduct of the Defense. In the conduct of the defense, nuclear weapons and the air force engage the enemy at extreme range in an attempt to disrupt attack preparations. Long range artillery, located in the main zone of resistance, fires on enemy areas, weapon positions, communication centers and supply points. The Soviets make extensive use of harassing actions consisting of sporadic artillery fire and combat patrols.

Security Zone. As the enemy continues to advance, the attacker is met with an increasingly heavy volume of fire. Forward detachments delay the enemy's ad-

vance by mobile defense. They delay on several lines, which consist of separate resistance points, and rely on a system of natural and artificial obstacles. Every effort is made to halt the enemy forward of the battle area by the use of nonatomic fires.

Combat Security Line. Soviet doctrine directs that the defense of the combat security line be conducted with such persistance that the attacker gets the impression he is confronted by the forward edge of the battle area. The actions of the combat outposts are supported by strong artillery fire to aid in this deception.

Counterpreparation. Counterpreparation is considered by the Soviets as a vital part of the defense. Counterpreparation is the utilization of atomic and nonatomic fires, the air force and all Infantry resources to inflict maximum punishment upon the attacker, to delay the attack and to prevent implementation of the enemy's plan of attack. Targets are selected along what is expected to be the avenue of approach of the main force of the enemy's attack. Several alternate fire plans are prepared. When the enemy main attack is detected, the most suitable of these fire plans is put into effect. Counterpreparation, if possible, is carried out immediately preceding the enemy attack. The Soviets consider maximum effect is achieved at this time. The main force of counterpreparation is atomic and nonatomic artillery fires. Nonatomic artillery usually carries out counterpreparation for about 30 minutes, expending one-half of the ammunition available at the gun site.

Action During the Attacker's Artillery Preparation. During this period Soviet Infantry, with the exception of specified observers and a few skeleton crews for

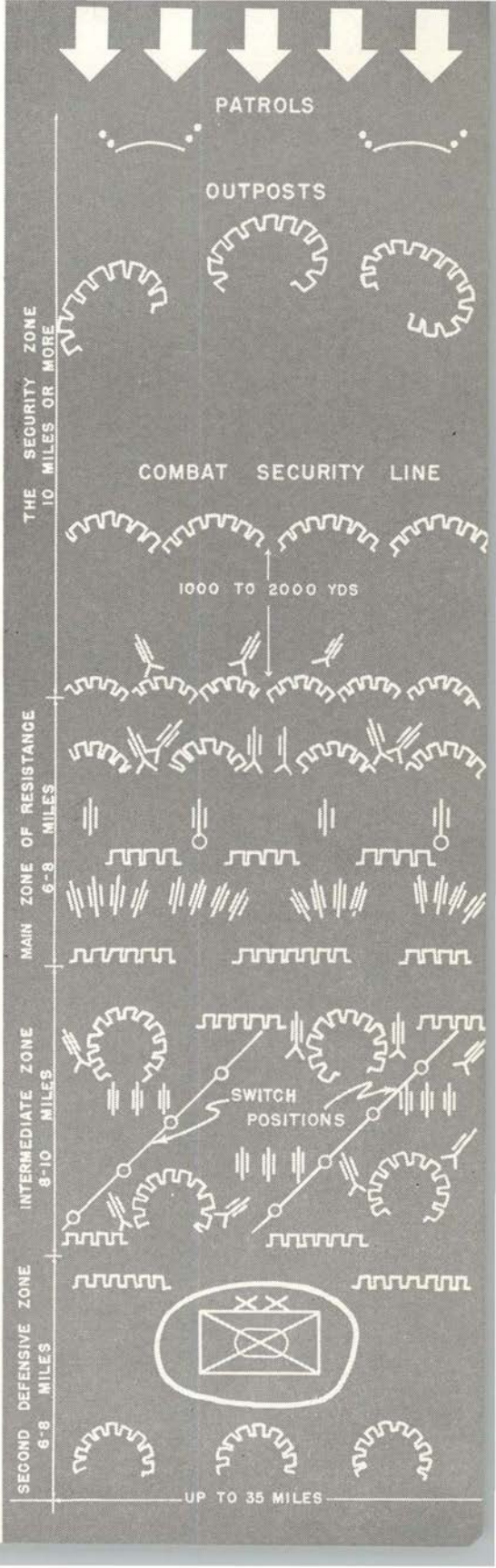


Figure 4. Schematic position defense system, Soviet rifle corps.

supporting weapons, take shelter in their bunkers. Soviet antiaircraft weapons continuously defend against attacking aircraft. The entire fire system must not be disclosed at this time as it is necessary to preserve it for the decisive phase of the engagement.

Forward Edge of the Battle Area. When the attacker's Infantry and tanks go into the assault, observers give the alert for personnel in bunkers to man their primary firing positions. At this time the direction of the enemy's main attack is evident. Fire is concentrated on the attacking force. The objective is to put entire enemy units out of action. Units in unthreatened sectors assist the defenders by fire, wherever possible. A moving artillery barrage is laid down on the enemy's tanks, while stationary barrage fire is employed to separate enemy Infantry from tanks. Maximum fire is concentrated in an area extending 400 to 500 yards in front of the forward edge of the battle area. It is in this area that final protective fires are delivered. They include artillery and mortar barrages and interlocking automatic weapons fire.

Depth of the Defense. If the attacker succeeds in penetrating the Soviet's main defensive zone, strong points continue their fire, even if encircled. Such resistance is intended to hamper the attacker's maneuver and to force him to continue combat with the encircled defender. This in turn offers favorable conditions for Soviet counterattack from the depth of the defense. If a strong force penetrates the defense, battalions of the main defensive zone attempt to separate enemy Infantry from his tanks, leaving the major destruction of enemy tanks to antitank artillery. In event of a deep enemy penetration, the division reserve counterattacks, reinforced by all elements that can be assembled. The counterattack is conducted against the flank of the penetration whenever possible. Counterattacking units are given objectives, directions of attack, lines of departure, times of counterattack and support from artillery and the air force. Prime importance is attached to speed of decision and movement. If the decision is not to counterattack, reserves occupy deeper defense positions. Major counterattacks are made by corps using a tank or mechanized division. This counterattack from the second defensive zone usually occurs after a breakthrough of the main defensive zone has been achieved. A portion of the corps prevents the attacker from expanding his breakthrough toward the flanks by occupying switch positions. Maintenance of the entire tactical defense system depends on the success of the corps counterattack.

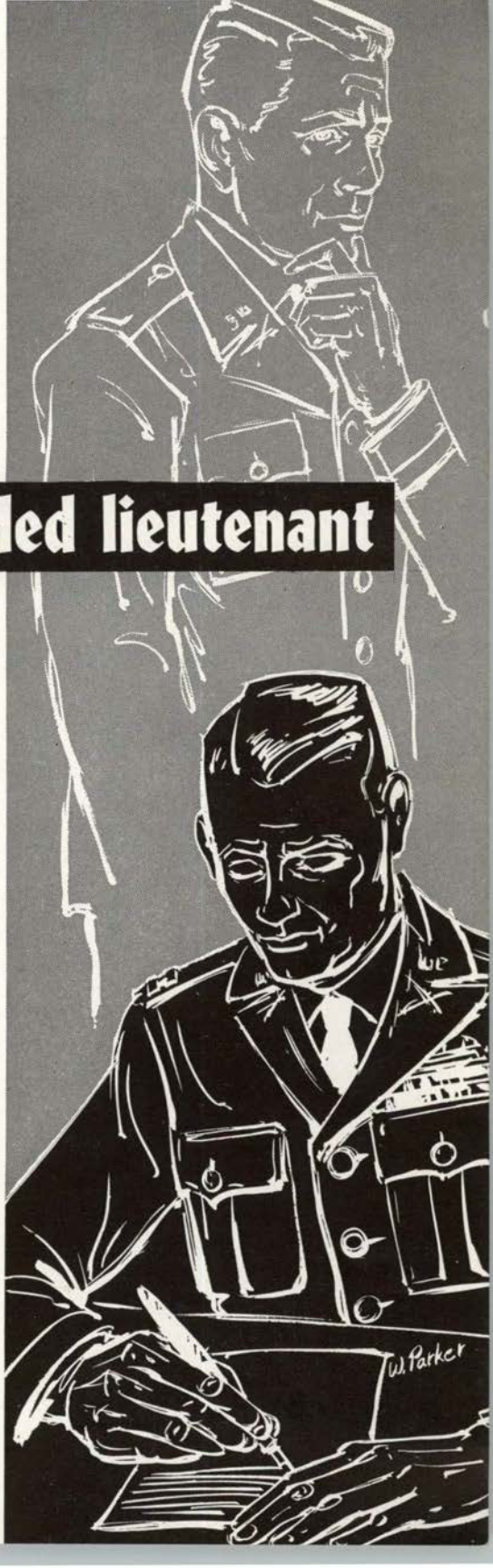
We must take into full consideration the ominous fact that the communists have massive and growing land, sea, and air power to support their bid for world dominance with brute force whenever they decide the time is ripe to use it. The Soviet Union itself has over 4 million men under arms, — 2½ million of them in its modern army of 175 well-armed and well-trained ground divisions. An additional 2½ million communist ground troops serve under the banner of Red China. . . . The predominance of ground power in the communists' military system gives them ample means to carry on local aggression against many nations. If we should be unprepared for limited war, we would be helpless to deal with attempted piecemeal conquest of the world except by precipitating the very atomic holocaust we are striving by every possible means to prevent.

SECRETARY OF THE ARMY WILBER M. BRUCKER

Shall I stay in?

A career officer discusses the challenges and rewards of an Army career.

Letter to a troubled lieutenant



Dear Bill,

I am writing to you because it has become obvious to me that you are troubled. I know that you are wrestling with a serious problem—whether or not to remain in the service. This was apparent the other day when you asked me if I planned to stay in the Army. Upon receiving an emphatic "Of course!" you pursued the question further by asking "Why?" "What reasons," you asked, "do you have besides the possible advantages of early retirement?"

I remember that I mumbled something inadequate about having a lot of reasons, but I was "busy" at the moment so I terminated the conversation rather brusquely with the comment, "I am a professional soldier. It is the only life I desire." Since then this incident has returned frequently to my mind. It bothers me because I realize I probably have let you down. I should have given you a better answer.

It is really unfortunate, but perhaps

By Capt Thomas H. Jones

CAPT THOMAS H. JONES, an instructor in the Tactical Department, United States Army Infantry School, enlisted in the Army in 1943 and was an intelligence scout with the 78th Infantry Division in Europe during World War II. He received an OC commission in 1945 and was assigned to an AAA battery at Fort Bliss. Later he served as a company commander with the 2d Armored Division at Fort Hood. He was then assigned as a platoon leader and a company commander with the 1st Cavalry Division in Korea and in 1952, became a member of the G3 Section of OCAFF. After completing the advanced course at USAIS he was a member of the military advisory group to Saudi Arabia and then studied Portuguese at the Army Language School. This is Captain Jones' fourth appearance in *Infantry*.

understandable, that so many of us who are completely dedicated to the Army fail to convey to undecided and possibly confused young officers and men like yourself the reasons for our dedication. It is unfortunate because if we do not convey to you, by word and deed, the deep meaning and satisfaction of an Army career, you are denied the most important guidance and inspiration you can receive. It is perhaps understandable because it is somehow difficult to express clearly our deep convictions and emotions regarding the Army. Too frequently, we are inclined to take the attitude that if a man doesn't find within himself the basic reasons for pursuing a military career he is not worth enlightening. Also, we are prone to forget or overlook the influence which other dedicated individuals have had in helping us understand the rewards of an Army career.

You certainly are deserving of all the advice and assistance we can give you in making your decision. I want to try to do better than I did the other day.

I would like to start by asking, what do you really want from a career? Do you want wealth, guaranteed security or the "early retirement" you mentioned? Or perhaps you haven't yet analyzed your desires or determined exactly what you do want. But, knowing you as I believe I do, I doubt if your real objectives are primarily such things, as desirable as they seem. Like many other capable, proud, thinking individuals, you will not choose your life's work entirely because of material considerations. You will have deeper, more purposeful reasons because you are the kind of person who realizes that lesser goals will ultimately lead to dissatisfaction. Certainly you will want sufficient income for basic comfort; you will want reasonable security and adequate provisions for a family. These things the Army provides.

What then of the other things which you seek? Can they be found in the Army?

You seek, I am sure, a profession which demands the attributes most commendable in a man, one which has a well-defined and honorable code of character and conduct which all are enjoined to follow. You want a career which gives the feeling of being a part of important events, contemporary and historical, and which offers a life of interest, broad experience and stimulation. These characteristics emerge vividly from an analysis of Army life. The attributes demanded of you as a soldier are courage, loyalty, intelligence, honor, endurance and understanding, to name but a few. The code you live by in the Army is demanding and eminently honorable. It requires continuous effort to attain attri-

butes which gain the respect and cheerful obedience of other men and which all soldiers, consciously or subconsciously, look for in others. Historically, the profession of arms has had and will continue to have a more profound influence on the course of civilization than any other profession. At times this influence has been evil; however, in the United States Army it has not been and will not be. The interest, experience and stimulation which any chosen profession should provide, can be fulfilled more completely by the Army than by any other profession I know of. The variety of tasks you will perform, the fine people of many nationalities you will meet, the intellectual and practical challenges which will constantly confront you, the extensive travel you will enjoy, insure a full and rewarding life. The comradeship existing within the Army and the deep satisfactions of command are not surpassed by any other profession.

But I must point out that some of the very blessings of the Army could possibly prove dangerous to your happiness. They could prove dangerous because if you believe completely in the Army and adhere to its code, violations and leadership weaknesses which you may sometimes observe will strike deep. This could discourage and hurt to an alarming degree and might result in disillusionment or bitterness. In some cases, I know they have lead to resignation from the Army. However, those who give up for such reasons are not true professional soldiers. They lack the motivation inherent in the term. They quit their profession at a time when it greatly needs them.

During certain periods in your Army career (extended combat operations, field problems, maneuvers) you will experience severe privation. Cold, hunger, fatigue, fear and general discomfort are not pleasant. However, these things test and strengthen a man's character. As Brig Gen S. L. A. Marshall puts it, ". . . I see a man as a creature under daily challenge to prove to himself, by one means or another, the quality and character of his own manhood." The bonds that develop between men as a result of mutual suffering are strong and satisfying. Furthermore, the comforts of life, if continually available, become commonplace and bring little pleasure; periodic privation enhances appreciation of even the simplest comforts.

Most of what I have said to you applies particularly to the Infantry, for Infantry is the heart and soul of the Army and the branch where both the greatest hardship and the greatest satisfaction occur. However, all other arms and services (or specialized fields) share in varying degrees in the challenges and rewards of a service career. If by virtue of your education, aptitude, desire, or even by chance, you are drawn to fields other than the Infantry you will still find a worthwhile, interesting and rewarding life's work.

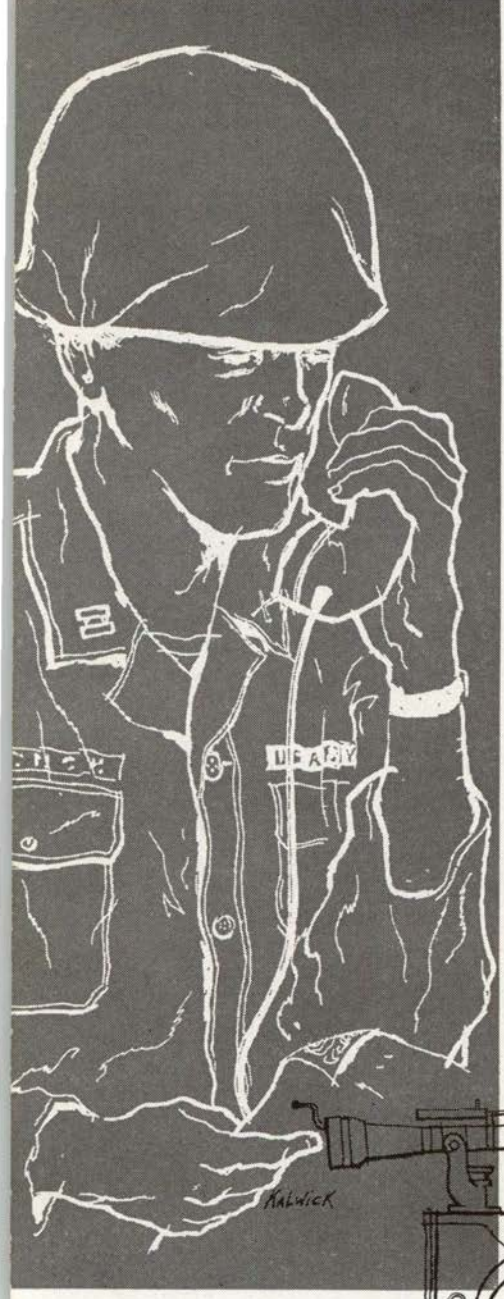
To sum up, let me say this: I am convinced that if you follow a career in the Army with full spirit and devotion, you will be able in years to come to look back on your life with a feeling of complete satisfaction and accomplishment that few, if any, other professions can create. You can truthfully say—I have led the life of a MAN.

THOMAS H. JONES
Captain, Infantry

Our major personnel problem remains that of attracting and retaining personnel with high aptitudes for an Army career. We have instituted programs within our current authority to solve this problem and we will continue to explore every possible means.

LT GEN DONALD P. BOOTH, Deputy Chief of Staff for Personnel

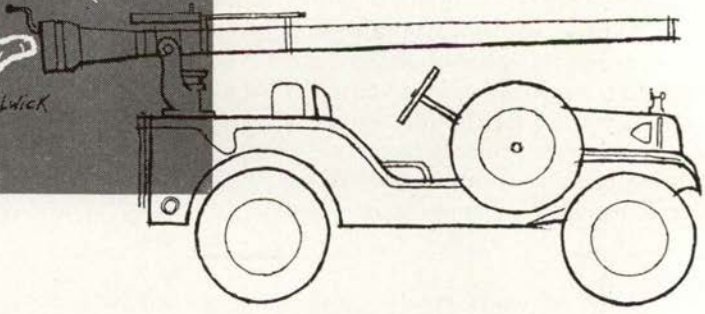
PENTOMIC



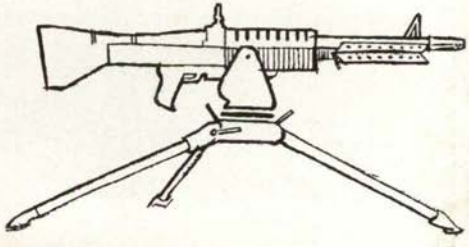
The October 1957 issue of Infantry *described the actions of a pentomic rifle company in an attack situation. In this article, we take a look at the same rifle company in the defense.—Editor*

New and more powerful weapons, increased mobility and better communications have demanded new organizations and new tactics for the modern battlefield. By this time we are fairly familiar with the organizational changes that have taken place in the Infantry division.[1] We are now concerned with the tactical employment of the various elements of the pentomic division. In the last issue of *Infantry* we discussed briefly a pattern of action for the pentomic rifle

[1]See April, July, October 1957 issues of *Infantry*.



By Capt Thomas H. Jones



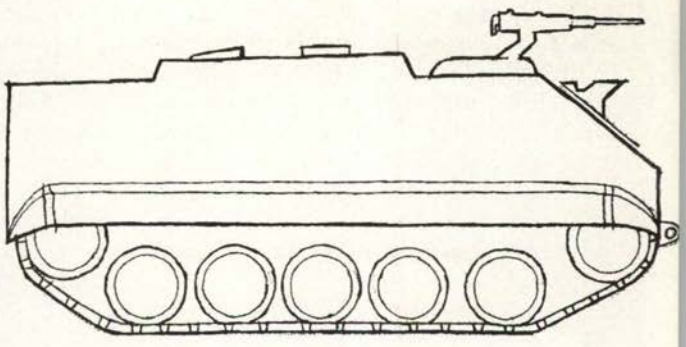
COMPANY IN THE DEFENSE

company in the attack. We should now take a look at the tactics for this company in the defense. To discuss this subject it is first necessary to consider some of the general characteristics of the defense.

On the modern battlefield, division or higher commanders may be expected to conduct two basic types of defense: position defense or mobile defense. Position defense calls for the employment of a series of mutually supporting positions on a comparatively narrow front. Mobile defense requires fluid action within the depth of the position. Reserves destroy the enemy by bold and vigorous offensive action. Forward units are capable of withdrawing rapidly to switch or blocking positions in an attempt to canalize enemy forces. In this type of defense the bulk of available forces are in reserve and forward units generally are assigned greater frontages than in position defense.

But regardless of the type of defense, the commander organizes his position into three basic elements: the security echelon, the forward force and the reserve. The security echelon consists of far ranging aircraft, a corps covering force, the division's general outpost and a combat outpost, all forward of the battle area, with the purpose of providing early warning to friendly units and to the extent practicable delaying, disorganizing and deceiving the enemy. (On extended frontages, a reconnaissance and security line may replace the COPL and GOPL). The forward force is located along the forward edge of the battle area (FEBA) to engage the enemy in combat and to stop,

We take a look at the actions of the new rifle company in the defense.



slow, canalize or disorganize him. The reserve force is used to limit penetrations and to destroy or eject the enemy by counterattack.

Position Defense

Position defense is designed to stop the enemy forward of the battle area and eject or destroy him if he penetrates. It is a relatively compact formation; company frontages extend up to 2400 yards and company depths vary from 1000 to 1500 yards. It is possible, however, that the company may be assigned greater frontages and that larger gaps may exist between frontline units. In any case, gaps must be covered by observation, obstacles and direct and indirect fires. Forward rifle platoons in a position defense occupy up to 450 yards, defend up to 800 yards and have depths up to 200 yards. Reserve platoons prepare primary positions and supplementary positions to afford flank and rear protection for the company. The primary position is located to fire into gaps and to block penetrations.

The three 81mm mortar squads of the weapons platoon are usually placed in general support and are positioned in a centralized location near the reserve platoon's primary position. This allows the mortars to fire across the entire company front and to mass and shift fires quickly and effectively. Further, general support eases the communication and control problem and facilitates ammunition supply. Supplementary positions are used as needed to support the combat outpost or to take distant areas under fire.

Likely tank approaches are covered by the two 106mm rifle squads whose mobility allows them to move rapidly to any threatened area or to take on secondary targets such as crew-served weapons and grouped personnel. The 106mm rifles are usually placed in general support and may be employed separately to insure necessary antitank protection.

Approximately 1000 to 2500 yards forward of the battle area is the combat outpost. This is the most forward security echelon of the battle group. Consisting of at least a reinforced platoon for each forward company, the combat outpost (COP) is located on terrain providing long-range observation and fields of fire and good routes of withdrawal. Primary mission of the COP is to provide early warning and deny the enemy close ground observation of the battle area. It also delays, disorganizes and deceives the enemy, and may recommend the use of atomic weapons if suitable targets appear. Infantry carriers (armored personnel carriers) or tanks may be attached to the forward company for use on the combat outpost.

The Infantry carriers provide additional firepower and some armor protection to the COP and also, by providing increased mobility, contribute to the safe and rapid withdrawal of the combat outpost. Tanks give the COP antitank protection and provide powerful, long-range fires which enhance the COP's capability of accomplishing its mission.

Mobile Defense

Mobile defense requires that corps and division hold a greater portion of their forces in reserve and that these forces have a higher degree of mobility than in position defense. Forward areas are normally more lightly held and an attempt is made to impede or block the enemy or to channel him into concentrated areas where atomic weapons can be used to the greatest effect to support the counterattack.

Although the same general principles and techniques used by the company in position defense are applicable in mobile defense, there are important variations: notably, the preparation of and possible withdrawal to switch and blocking positions. In mobile defense, the rifle company may be required to stubbornly de-

fend essential terrain or conduct a delaying action to disorganize or deceive the enemy and force him to mass into lucrative atomic targets, then withdraw to switch or blocking positions.

Frequently, the forward company will have Infantry carriers attached to provide complete or partial mobility. In this case the combat outpost will have priority for the use of the vehicles. Following withdrawal of the COP, the Infantry carriers are usually allocated first to the company reserve, then to other elements of the company if additional carriers are available. This gives the company a mobile reserve force which can be used to limit penetration, to add support where needed and to cover dangerous avenues of approach. The .50-caliber machineguns of the Infantry carriers also can reinforce fires forward of the battle area or protect the flanks and rear areas of the company.[2]

Plans for day and night withdrawals to switch or blocking positions are made by the forward company and routes to these areas are carefully reconnoitered by key personnel. Since covering forces or detachments left in contact will be necessary during withdrawal, their composition and location are determined.

If the company is subjected to atomic attack, surviving leaders take charge in accordance with the established chain of command. Battle group is informed of the damage and, if able to do so, the company continues on its mission. If the company is not able to continue on its mission, the surviving members are attached to other units or sent to replacement agencies and another company may be assigned the mission.

We are now ready to take a look at the pentomic rifle company in a defensive situation. Since we will not be able in this article to present situations for both types of defense, we will consider a situation in which the company participates in a mobile defense. The depth, dispersion, fluidity and other conditions of combat on the modern battlefield will frequently require this type of defense and we probably are less familiar with it than position defense which we have used in the past.

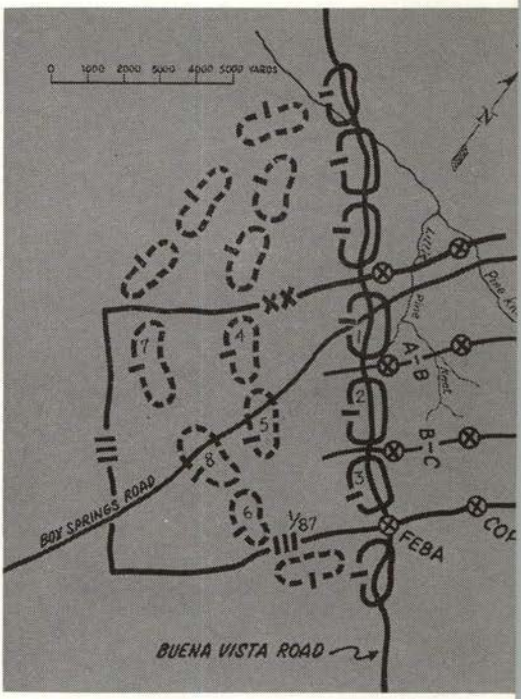


Figure 1. Schematic situation map.

Company A, 1st Battle Group, 87th Infantry, has been ordered to occupy a defensive area along Buena Vista Road by 1400 hours (Position 1, Figure 1). It is now 0800. The weather is clear and dry. EENT for the period is approximately 2025; BMNT is approximately 0510. The company is presently located about seven miles to the southwest in an assembly area. The battle group commander has designated companies A, B and C on line. Company D is in reserve. A platoon of tanks (to revert to battle group reserve upon withdrawal of the

[2]For more information about the use of Infantry carriers see "Ride to Work" in the October 1957 issue of *Infantry*.

COP) and four Infantry carriers (one equipped with an AN/GRC 8 radio) are attached to Company A. Tactical atomic weapons of yields ranging from 2 KT to 100 KT have been used extensively throughout the campaign by both sides and enemy offensive operations are characterized by rapid exploitation of atomic weapons with mobile striking forces. Atomic weapons available to support the 1st Battle Group, 87th Infantry, include 2 KT, 10 KT and 20 KT variety.

The forward companies are responsible for manning the combat outpost with a reinforced platoon each, and the battle group reconnaissance platoon is to screen between the combat outpost line and the general outpost. A forward observer from the mortar battery is with Company A. The battle group commander has directed Company A to be prepared to withdraw from its defensive position to blocking position 4 or switch position 7 on order.

After receiving his order, Captain, Company A, makes an estimate of the situation and a map reconnaissance during which he checks critical terrain, observation and fields of fire, cover and concealment, obstacles and avenues of approach into his area. Next, he makes the necessary arrangements for the movement of his company and coordinates with adjacent, supporting and attached units. He then makes a thorough ground reconnaissance, noting the most advantageous defensive positions for his unit and making a complete examination of the terrain. Following the reconnaissance, he completes his defensive plan and issues the necessary orders to his subordinate leaders.

The organization of the company defensive area is planned prior to the movement of the company so elements can move directly to their positions without halting or confusion. Even though the enemy is some distance from Company A, enemy aircraft can deliver or direct atomic or nonatomic fires against the company. Consequently, movements are planned to achieve dispersion and to confuse enemy information-gathering agencies. The 4th platoon, mounted on tanks, leaves at approximately 1000 hours and moves to the COPL. At intervals of 15 minutes, the 1st platoon in Infantry carriers and the weapons platoon (in that order) move up to their positions. The carriers then make two trips back to the assembly area to transport the two remaining platoons.

In organizing his defense, Captain, Company A, places his platoons as follows: 1st, 2d and 3d platoons (from left to right) are located forward along Buena Vista Road and the 4th platoon is in reserve near Hill 509 off Box Springs Road (Figure 2). The forward platoons are positioned on critical terrain to cover the most likely enemy approaches. Gaps are covered by direct and indirect fire weapons organic to or in support of the company. The reserve platoon, which initially will man the COPL, is located to add depth to the defense, particularly along Box Springs Road, a very dangerous approach. The reserve platoon also can fire into the gap between the 2d and 3d platoons, move to supplementary positions and protect the rear of the company. Supplementary positions are designated as shown to protect against enemy threats to flank and rear. Time permitting, more supplementary positions may be prepared.

Since the mission and extensive width of the combat outpost requires mobility, firepower and antitank protection, tanks and Infantry carriers are attached to the COP. The tanks can cover dangerous enemy tank approaches and cover the withdrawal of the outguards. The Infantry carriers give added mobility to the COP, provide protection and add to outguard firepower. Also, the AN/GRC 8

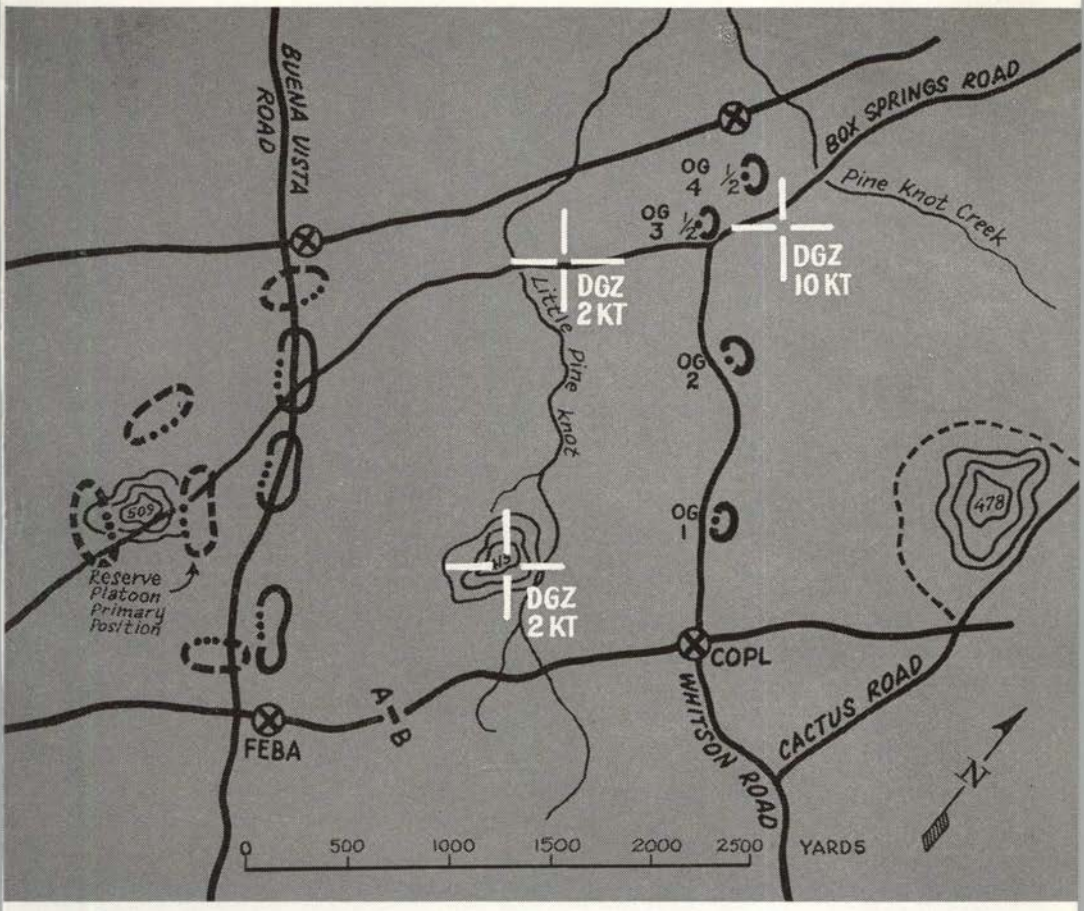


Figure 2. Organization of the defense.

in one of the carriers can be used to good advantage by the COP commander.

In organizing the combat outpost, the COP commander disposes outguards laterally across the front to cover likely enemy approaches. The tanks (two with outguard 1, two with outguard 3 and one with outguard 2) cover enemy tank approaches. One Infantry carrier is with each outguard, and outguards 2 and 4 each have one machinegun and one rocket launcher from the weapons squad. Mortar observers are also with the COP. With this type of organization, the COP can perform the mission of warning friendly units and denying the enemy close ground observation of the battle area. Within its capabilities, it also delays, disorganizes and deceives the enemy.

The company commander places his 81mm mortar squads in general support from a defilade position behind the reserve platoon. Supplementary positions near the forward edge of the battle area are used to enable the mortar squads to support the COP. The mortars can fire across the company front and their centralized position allows speed in massing and shifting fires, ease of supply, communications and control and greater security. Antitank squads are placed in general support in the 1st platoon area

covering Box Springs Road. General support is preferred since greater benefit to the over-all defense of the company accrues from this use. The 106mm rifles effectively cover the most dangerous tank approach into the company area. Supplementary positions covering other approaches will be chosen.

The large area of company responsibility requires extensive surveillance to prevent enemy infiltration or a surprise night attack. The night surveillance plan includes listening posts located on trails or other likely enemy approaches forward of the company and near Buena Vista Road to each flank. Captain, Company A, arranges for connecting patrols to operate between forward platoons and also from the reserve platoon area to the 1st and 3d platoons. A squad from the reserve platoon (when withdrawn from the COPL) will be positioned between the 2d and 3d platoons at night. Warning devices and infrared equipment provide an effective means for lessening the surveillance burden on personnel and are utilized to the maximum. The wide gap and wooded terrain between the 2d and 3d platoons make the positioning of a squad in that area at night advisable.

Since the company commander has a detailed knowledge of the terrain forward of his position, he is asked to make recommendations for atomic fires. Captain, Company A, recommends that atomic weapons be planned to strike likely enemy approaches or possible assembly areas close to the FEBA, with due regard for troop safety. Based on these recommendations and further analysis, the battle group commander plans for the use of atomic fires. One desired ground zero for a 2 KT weapon is plotted approximately 1300 yards forward of 1st platoon positions near the intersection of Box Springs Road and Little Pine Knot Creek. Another 2 KT DGZ is plotted on Hill 415, approximately 1100 yards in front of the 2d and 3d platoons. Desired ground zeros for larger yield weapons must, of course, be planned farther out, but still are plotted on the most dangerous enemy approaches. A 10 KT burst for use after withdrawal of the COP is plotted near the junction of Whitson and Box Springs Roads, slightly forward of outguard 3. Other DGZs are planned forward of the COPL and may be called for by COP commanders; however, the final decision regarding the planning and use of atomic fires rests with higher authority.

Four days after Company A occupies its defensive positions, a report that atomic supported thrusts have penetrated the division's general outpost is received. Shortly thereafter, Captain, Company A, receives a report from his COP commander that there is active patrolling by the enemy in front of his outguards. A soldier from one of these patrols is captured by outguard 1 and reports that his company, reinforced with tanks and Infantry carriers, is preparing to lead a larger force in an attack along Cactus Road. The prisoner says his company is stopped along the trail which circles Hill 478 west of Cactus Road.

Captain, Company A, immediately reports the situation to the battle group commander and requests aerial reconnaissance of the suspected enemy column. He then sends the prisoner to battle group headquarters. An H-13 helicopter, attached to the battle group from the direct support platoon of the division aviation company, is sent aloft, but due to heavy foliage in the area fails to detect the enemy. As a result Captain, Company A, with the approval of the battle group commander, orders the COP commander to send out a patrol[3] to verify the pres-

[3]Atomic targets hidden from aerial observation must be located by ground observation, frequently by rifle company personnel. The time lag required for a patrol to leave the effects area of an atomic weapon planned for use on the enemy is a disadvantage in some cases as the located target may move while the patrol is in its vicinity.

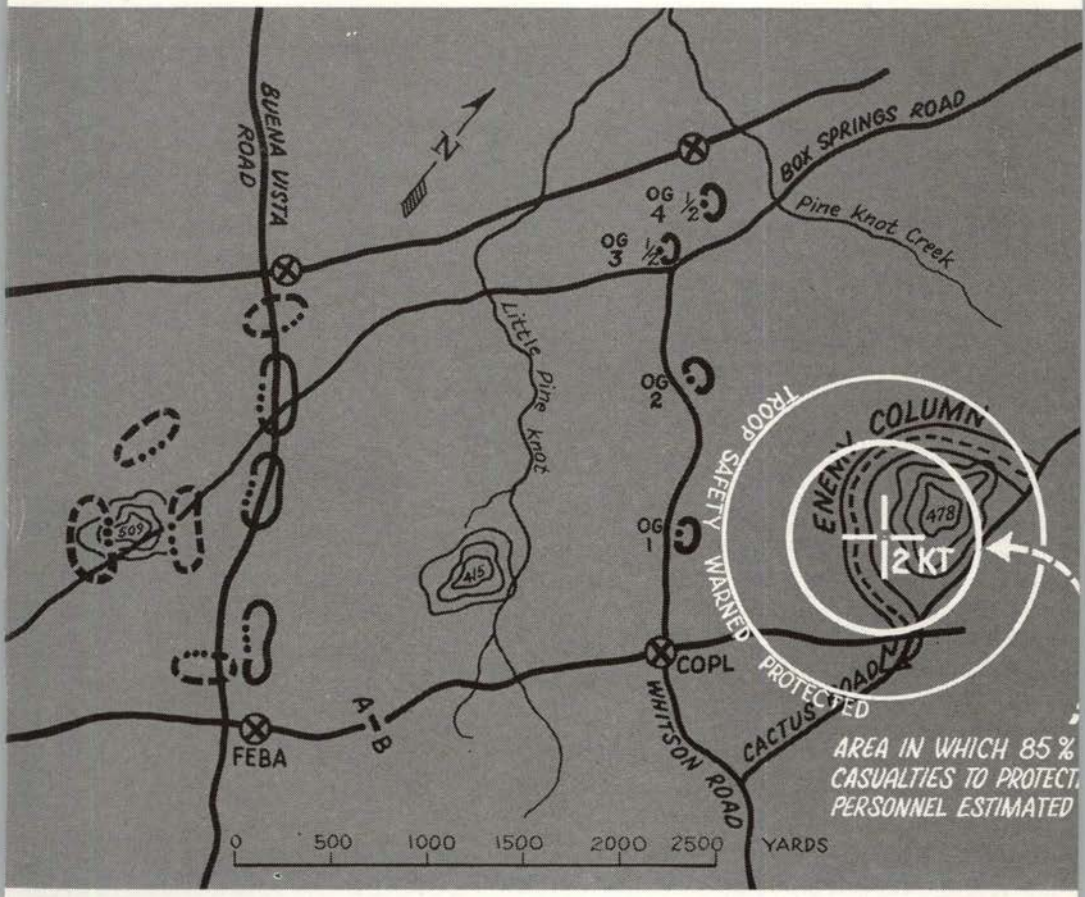


Figure 3. Conduct of the defense. A 2 KT low air burst strikes the column of enemy Infantry and armor near Hill 478.

ence of the enemy as reported by the prisoner. The patrol from outguard 1 returns and reports enemy Infantry and armor in considerable strength in the vicinity of Hill 478. This fact is immediately reported to the battle group commander, who requests a 2 KT low air burst on this force (Figure 3). The request is granted by division. Blowdown from the detonation uncovers the area to aerial observation and positive results are noted. However, other enemy forces are soon committed, and the COP commander reports that enemy dismounted Infantry, supported by heavy conventional fires, is exerting strong pressure on outguards 1 and 2 and that some enemy troops are believed to have slipped between them. He requests permission to withdraw as an enemy assault is believed to be imminent.

In this situation, Captain, Company A, insures that all available fires are being used to the maximum to support the COP, notifies the battle group commander of the expected assault and requests permission to withdraw the combat outpost.

By 1700 the COP has successfully withdrawn and the 4th platoon has oc-

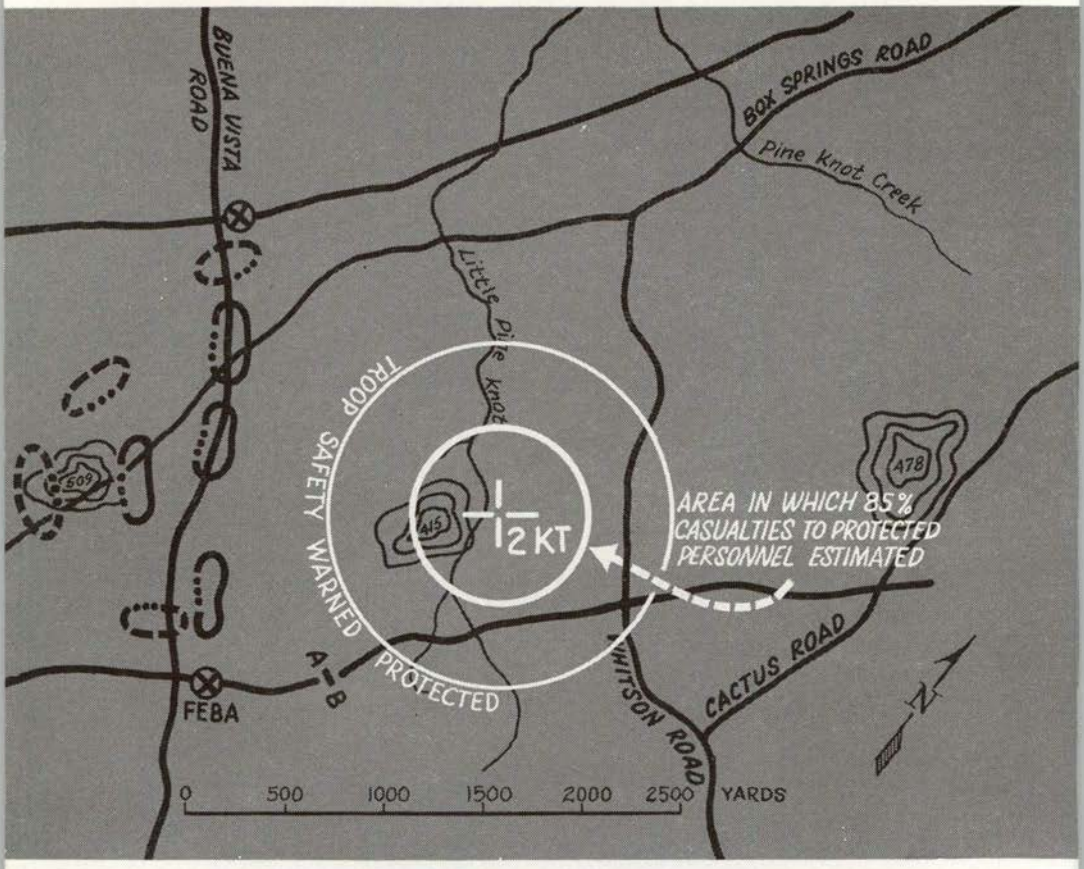


Figure 4. Conduct of the defense. A 2 KT low air burst neutralizes an enemy concentration near Hill 415.

cupied its reserve position (Figure 4). The tank platoon has joined the battle group reserve and the Infantry carriers remain with the reserve platoon to allow maximum flexibility for this unit and to increase its capability as a covering force for withdrawal. Despite positive results from the 2 KT low air burst and other fires, destroyed enemy units are quickly replaced and the attack is renewed. A strong enemy mechanized attack has been made along Box Springs Road. Company A, aided by an antitank minefield across Box Springs Road, has thus far stopped the enemy. At this point the enemy withdraws, and immediately Captain, Company A, dispatches patrols to maintain contact with the enemy and notifies battle group headquarters of the situation.

Shortly thereafter, a patrol from the 3d platoon reports an enemy concentration of at least two companies northeast of Hill 415 along Little Pine Knot Creek. Battle group headquarters is notified and the commander requests and receives a 2 KT low air burst near Hill 415 which neutralizes this enemy concentration.[4]

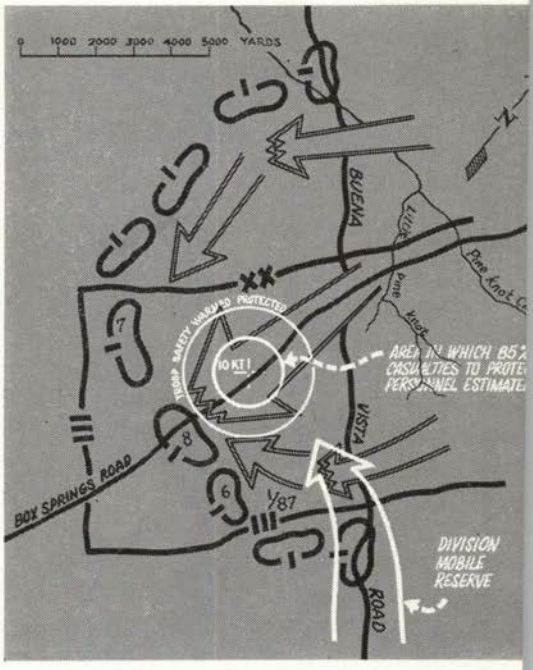
[4]The company commander must be informed of the troop safety line and the time of detonation so he can insure the safety of his men. Patrols and observation posts may have to be withdrawn and the company must be warned of the impending explosion.

Concurrently, strong enemy pressure is exerted on other elements of the battle group and the adjacent battle group to the left (Figure 1). Company C in position 3 is severely damaged by enemy atomic weapons. Captain, Company A, is ordered to withdraw to position 7 at 2200 hours as part of a general withdrawal. Plans have been made for this contingency. Since the movement is to be made at night, careful control is essential, but continuous movement and dispersion are also desired. Consequently, platoon and company assembly areas are designated but are to be occupied for a minimum length of time. Guides are used extensively along the route. If under enemy pressure, the company commander plans to withdraw forward platoons by fire and maneuver (least engaged to withdraw first) with the reserve platoon and supporting fires assisting. The reserve platoon, equipped with Infantry carriers, will then cover its own withdrawal. If not under enemy pressure, the company commander plans to withdraw platoons simultaneously, leaving approximately half the crew-served weapons strength and one-third the rifle strength as detachments left in contact.

Enemy attacks begin at nightfall but suddenly diminish at 2100 hours. As a result, Captain, Company A, decides to move his platoons (less detachments left in contact) to the rear simultaneously. The withdrawal begins smoothly, but when the withdrawing elements have passed the vicinity of position 5 (Figure 1), an enemy atomic weapon is detonated over Company A's detachments left in contact, destroying them. The remainder of the company suffers temporary flash blindness but no casualties. At dawn, the enemy exploits and attacks positions 7 and 8 (Figure 5). These and adjacent positions hold and as a result a large pocket is formed by the 1st Battle Group, 87th Infantry, and adjacent units occupying switch positions. In this situation, atomic weapons are used against the concentrated enemy forces and the division mobile reserve is committed, striking along Buena Vista Road from the southeast. The enemy is destroyed and original positions of the 1st Battle Group, 87th Infantry, are restored and occupied by the counterattacking force.

The actions of Company A, 1st Battle Group, 87th Infantry, have illustrated several basic tactical considerations which may be a pattern for the future operation of a pentomic rifle company in a division conducting a mobile defense. Captain, Company A, located his platoon positions (both primary and supplementary) on critical terrain features to cover likely enemy approaches into the forward company area. Since he was defending on

Figure 5. Conduct of the defense. Switch positions occupied by 1st bg, 87th Infantry and adjacent units hold. The division reserve, assisted by an atomic burst, strikes and eliminates the pocket of enemy troops.



CAPT THOMAS H. JONES, an instructor in the Tactical Department, United States Army Infantry School, enlisted in the Army in 1943 and was an intelligence scout with the 78th Infantry Division in Europe during World War II. He received an OC commission in 1945 and was assgined to an AAA battery at Fort Bliss. Later he served as a company commander with the 2d Armored Division at Fort Hood. He was then assigned as a platoon leader and a company commander with the 1st Cavalry Division in Korea and in 1952, became a member of the G3 Section of OCAFF. After completing the advanced course at USAIS he was a member of the military advisory group to Saudi Arabia and then studied Portuguese at the Army Language School. This is Captain Jones' fourth appearance in *Infantry*.

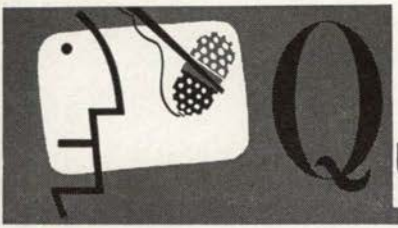
extended frontage, he covered the resultant gaps by observation, obstacles and direct and indirect fire, and organized a comprehensive surveillance plan, consisting of listening posts, patrols and warning devices. He further insured that movement in the company area was minimized and utilized deception and concealment to avoid detection and prevent destruction by enemy atomic weapons.

The combat outpost (controlled by the forward company commander) was organized as a series of outguards forward of the battle area to warn friendly troops of enemy approach, and, as far as possible without close combat, to delay, deceive and disorganize the enemy. The company commander attached Infantry carriers to the combat outpost (which was manned by the reserve platoon) and upon withdrawal of the COP kept the carriers with the reserve platoon to add mobility and firepower to this unit.

Because of his detailed knowledge of the terrain forward of his area, Captain, Company A, was asked to recommend general atomic target areas on likely enemy approaches, although final approval for target areas and for firing atomic weapons rests with higher authority. The company commander prepared withdrawal plans so his platoons could move efficiently to switch or blocking positions during hours of daylight and at night. In cases where suitable atomic targets could not be located by aerial observation, he utilized patrols from both the combat outpost and the forward platoons to seek out and pinpoint enemy formations which might threaten his positions. By skillful organization of the ground and conduct of the defense, Company A contributed to the successful culmination of the mobile defense.

Our potential enemies work without stint to attain their objectives and they will beat us if we do less. If we are to thwart them in attaining their goals which are inimical to our own, only the best efforts of all of us will suffice. Now is a time to take stock of our individual contributions to the cause of national security and verify, to the satisfaction of our own consciences, that we are doing our best, today, tomorrow and for the indeterminate future.

GENERAL MAXWELL D. TAYLOR
Chief of Staff, U. S. Army



QUARTERLY QUIZ

Answer the following questions to determine whether you are a bolo, recruit, marksman, sharpshooter or expert. Each question is worth 10 points.

1. At what frontage can the battle group execute the position defense most effectively when operating under atomic warfare conditions and with only foot mobility?

2. Which of the following actions would normally be employed in the fire support plan for a night withdrawal under atomic warfare conditions?

   a. Maintenance of normal non-atomic fires in the area and scheduled atomic fires.

   b. Maintenance of normal non-atomic fires in the area and on-call atomic fires.

3. What is an atomic no-fire line?

4. What is the preferred method of controlling an attack of a battle group when it is moving on foot and operating under conditions of atomic warfare?

5. The 4.2-inch mortar shell, the M-329, has a cartridge extension which provides a 41 increment (charge) capacity as compared to the former 25½ charge capacity on the M-2 round. How many yards increase in maximum range are made possible by the increase in charge provided by the cartridge extension?

6. At what level of command are Army Aviation transport battalions (fixed-wing and helicopter) usually assigned?

7. What are some of the characteristics of the carrier, personnel, M-59 (Infantry carrier) organic to the pentomic Infantry division and how may they be employed during battlefield operations?

8. To what extent can wire communication be utilized in the following tactical situations?

   a. Movement to contact.

   b. Night attack.

9. What reference is used to correctly identify a message which has been previously transmitted (select the correct answer)?

   a. The writer's number.

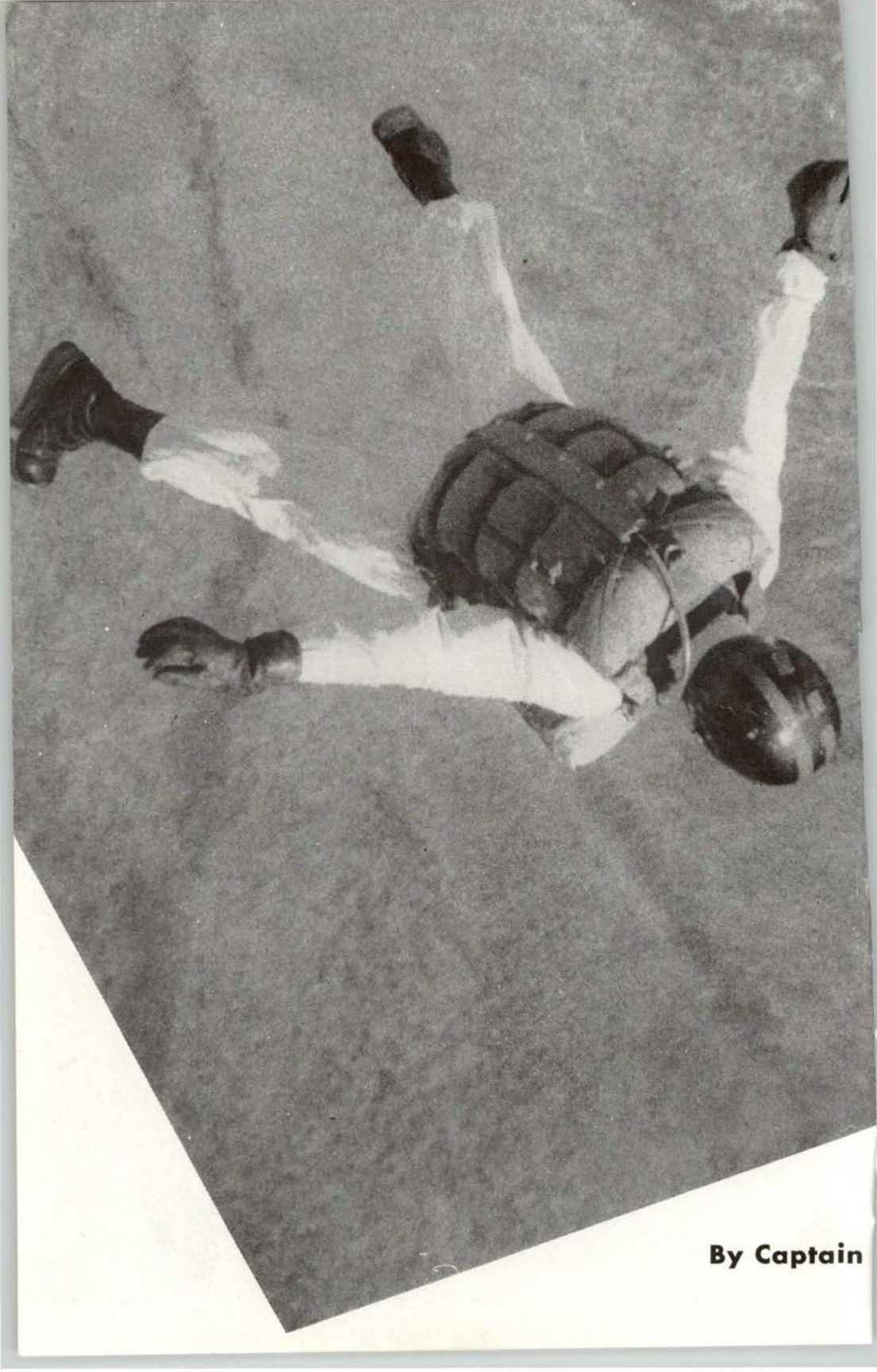
   b. A portion of the text.

   c. Date-time group.

   d. Message center file number.

10. Do the leadership responsibilities of the commander in a pentomic unit differ from those of the World War II commander?

For answers turn to page 87



By Captain

STABILIZED FREE FALL

A new technique in parachuting which could be used for reconnaissance.

A new technique, with potential value for reconnaissance, is now available to ground forces. It has the important advantages of stealth, silence and accuracy. It provides a means of placing men behind enemy lines precisely, quietly and with little danger of detection. The technique can be used either for shallow or deep reconnaissance—that is, 100 miles or more into enemy territory.

The need for timely and on-the-spot information has never been more pressing than it is today. The concept of vertical envelopment with highly vulnerable flights of rotary- or fixed-wing aircraft must be coupled with information of enemy positions, movements and capabilities if the friendly effort is to succeed. Under the threat of nuclear warfare, the ground commander, with units operating independently and some distance from each other, must obtain information of the enemy situation, of potential threats, of weak points in the enemy defense. With modern means of transport and communications, the enemy can react quickly; the situation can be more dynamic than ever witnessed in the past. The need for timely information is more important than ever.

How is the commander to obtain such information if our envelopment is to carry us 100 miles into enemy territory?

This material is presented to stimulate thinking on the important subject of reconnaissance on the modern battlefield. The thoughts expressed are those of the author and do not necessarily reflect official thought of the United States Army Infantry School.—Editor

Jacques Andre Istel, USMCR

CAPT JACQUES ANDRE ISTEL, United States Marine Corps Reserve, has made more than 100 free fall parachute jumps. He has competed in several national jumping contests, winning third place in 1955 and first place in 1956. He was captain of a United States parachuting team which participated in the Third World Championships held in Moscow in 1956 and was team leader for the United States at the Adriatic Cup Championship held at Tivat, Yugoslavia, in 1957. A native of Paris, France, he is a naturalized American citizen and a graduate of Princeton University. He has seen active duty with the Marine Corps and has participated in considerable parachute test work. He is currently president of Parachutes Incorporated and vice president of the Parachute Club of America, an affiliate of the National Aeronautic Association.

Photo reconnaissance is of great assistance, but it has severe limitations. A foot patrol is almost out of the question. A helicopter makes too much noise. Pathfinder troops parachuted into the area are somewhat better but, with existing methods, are still inadequate.

At present parachutists are dropped with a static line. This is an umbilical cord connecting the aircraft and the parachute. The jumper leaves the aircraft and the static line immediately opens the parachute. The launching aircraft does its work from an altitude of 500 to 1200 feet above the terrain. The noise is considerable and the open parachute is there for all to see. The aircraft cannot launch parachutists from a higher altitude without giving up accuracy in landing. For instance, a parachute opened at 5000 feet might drift several miles from its intended landing spot.

Now comes our new technique. Fly the aircraft at 10,000 or 12,000 feet and drop the man in *stabilized free fall;* that is, with parachute unopened. From 12,000 feet a man can drop for over 60 seconds before opening his parachute at a safe tactical altitude of 1000 feet. The launching aircraft has traveled four or five miles during this time. There can be little suspicion on the ground that a parachutist has been dropped. The aircraft can be part of a flight on a regular operational run. At some point during its mission it passes over the area to be reconnoitered. Two or three bodies drop silently. It would take extraordinary radar to spot this action, radar well beyond the present capabilities of the enemy search radar which might or might not have already located our aircraft.

Our men drop for 60 seconds or more. Their luminous stop watch and altimeter tell them when to pull the ripcord. They open their parachutes around 1000 feet. The noise of the opening is muffled by a new device and they land within 300 yards of the center of their target.

This method was recently made possible by new European discoveries in parachuting techniques and equipment. First let us examine their techniques. Why hasn't the United States Army experimented with free fall parachuting? Why is it presently forbidden to U.S. parachutists? There is a good reason. Free fall parachuting *was* dangerous. It no longer is. Free fall came into its own with the discovery of Sky Diving. Around 1950 French civilian parachutists discovered that a man in free fall could maintain control of the position of his body in relation to the earth. He could turn at will and prevent spins and somersaults. More important, he could make his whole fall in what came to be known as the basic stabilized position: face down, body parallel to earth, arms and legs spread. Parachuting has been a

sport in France but Sky Diving brought a new enthusiastic following for this activity. It was discovered that in the past jumpers had actually spun to death; that many accidents were caused by a poor body position while opening the parachute, hence risking the danger of having the pilot chute catch on the jumper's foot. The new stabilized position eliminated these risks.

Sky Diving and parachuting became safe—in fact, today, it is one of the safest sports in France. The French recognized the need to control the sport. They require 15 static line jumps and 15 free fall jumps under the control of an instructor before the student tries basic Sky Diving. But the technique exists. It is safe and it is easy to learn.

Sky Divers then experimented with accuracy in landing. They discovered that by slightly varying their position they could glide over 200 yards during a 30-second free fall. They learned to use this glide in order to spot themselves better. Today, a good Sky Diver can leave an aircraft by day at 12,000 feet, fall for 60 seconds and land within 100 yards of a given spot on the ground at least nine out of ten times.

The Russians have done a considerable amount of experimental work at night and consider that they can drop a man from 12,000 feet and have him land within 200 yards of the target.

The interest in Sky Diving led to the development of better equipment. The main problem in accurate jumping is the wind. An ordinary parachute will drift where the wind takes it. Thus, jumpers would drop a drift chute, watch the result and estimate when to leave the aircraft in order to land on a given spot. Experiments were made with steerable chutes—chutes that would have given drift built into the design. Probably the most successful of these designs is the new U. S. open gore chute.

The principle of the open gore in parachutes has been known for years. A recent adaptation, has been the British blank gore parachute manufactured in England by the G.Q. Parachute Company. In the British model the gore was completely taken out—the slit going all the way up to the apex. The British chute did not have excellent opening characteristics and required a device called the Mitchell Lip[1] in order to open more positively.

[1]The Mitchell Lip is a small piece of fabric sewn to the skirt of the canopy near the blank gore.

Parachutist enplaning for a free fall jump.

The canopy is collapsed after a free fall jump. Note the open gore.

The U. S. chute is new in that it is a most successful application of the blank gore principle. It resembles a Russian chute used for the first time in competition last summer and believed to have been first tested in 1955. In the Russian chute the gore is cut open only 44 inches from the apex. This 44-inch piece of fabric gives the canopy positive opening characteristics. Furthermore, by directing all the flow of air to the rear of the chute, the speed of this chute is greater than in the British model. The U. S. chute, made of special low porosity fabric, is even faster than the Russian model.

This parachute has a drift in still air of approximately eight mph. It can be rotated completely in three seconds. Thus, it can be steered by the jumper. Since winds aloft are normally in excess of eight mph, it is still necessary to leave the aircraft upwind, but large corrections can be made with the parachute. In a tactical situation the parachutist can avoid obstacles that could not be hurdled with a non-steerable chute.

The forward speed of this chute actually gives it lift, just like an airplane wing. This makes for a slower rate of descent and a very gentle landing. The

large opening in the canopy also lessens considerably the opening shock. A launching sleeve aids deployment and further reduces the opening shock. After the canopy blossoms, the sleeve remains attached to the chute, thus leaving no telltale marks for the enemy. Thus, parachuting today is safer and much more gentle than in the past. The combination of this parachute and the techniques of Sky Diving now permits accurate landings from great height by comparative novices. This is the foundation for our new technique of reconnaissance.

This type of training requires no major installation. It does require a flexible, imaginative and individualistic approach. New methods of instruction can teach a man basic stability techniques in 10 days. It is of vital interest for the United States to train specialists for reconnaissance tactics—a policy that will pay dividends in battle. In the future, artificial devices may be used for stabilization, but at present multistage parachutes leave much to be desired.

While these "Buck Rogers" techniques actually can be practiced today, they have severe limitations. The weather must be good—there must be no rain, hail or snow — and ground winds should be under 18 knots. We cannot drop a drift chute to check our wind in enemy territory; thus we must depend upon wind reports from the nearest friendly base. We may have to select our launching point by radar. Here again, techniques will have to be worked out.

There are interesting problems which will arise after our patrol is launched. The patrol members will have to be good woodsmen should they need to free chutes from trees before dawn. They will have to carry lightweight communication equipment and be proficient in its use. They may have to make contact with an aircraft orbiting in the distance or attempt continuous wave communication with their home base.

They will have to be expert scouts and must be in excellent physical condition. They will have to be retrieved at distant helicopter pick up points or by radical new methods.

Many details of this technique remain to be worked out. They are not within the scope of this article. Our point is this: present parachuting techniques, for reconnaissance purposes, are as obsolete as the horse drawn cart. For stealth, silence and accuracy today, try stabilized free fall.

A member of the team which demonstrated stabilized free fall at Fort Bragg about to land near a ground target.

STABILIZED FREE FALL PARACHUTING DEMONSTRATED AT FORT BRAGG

Last November Captain Istel and three other members of the Parachute Club of America put on an exhibition of stabilized free fall parachuting for Army personnel. These demonstrations, originally scheduled to be held at Fort Benning in October, were conducted over Drop Zone Sicily at Fort Bragg.

In a series of jumps from heights of 5000 to 12,600 feet, the four-man team demonstrated the basic free fall position and controlled free fall techniques. By using arm and leg movements during the fall and by controlling drift after their chutes opened, the jumpers were able to guide their descent toward a ground target. In no jump did they land more than 32 yards from the center of the target. In one event Captain Istel and Lew Sanborn, a former member of the 504th Airborne Infantry Regiment, criss-crossed in the sky before opening their chutes during a 60-second free fall from more than 12,500 feet.

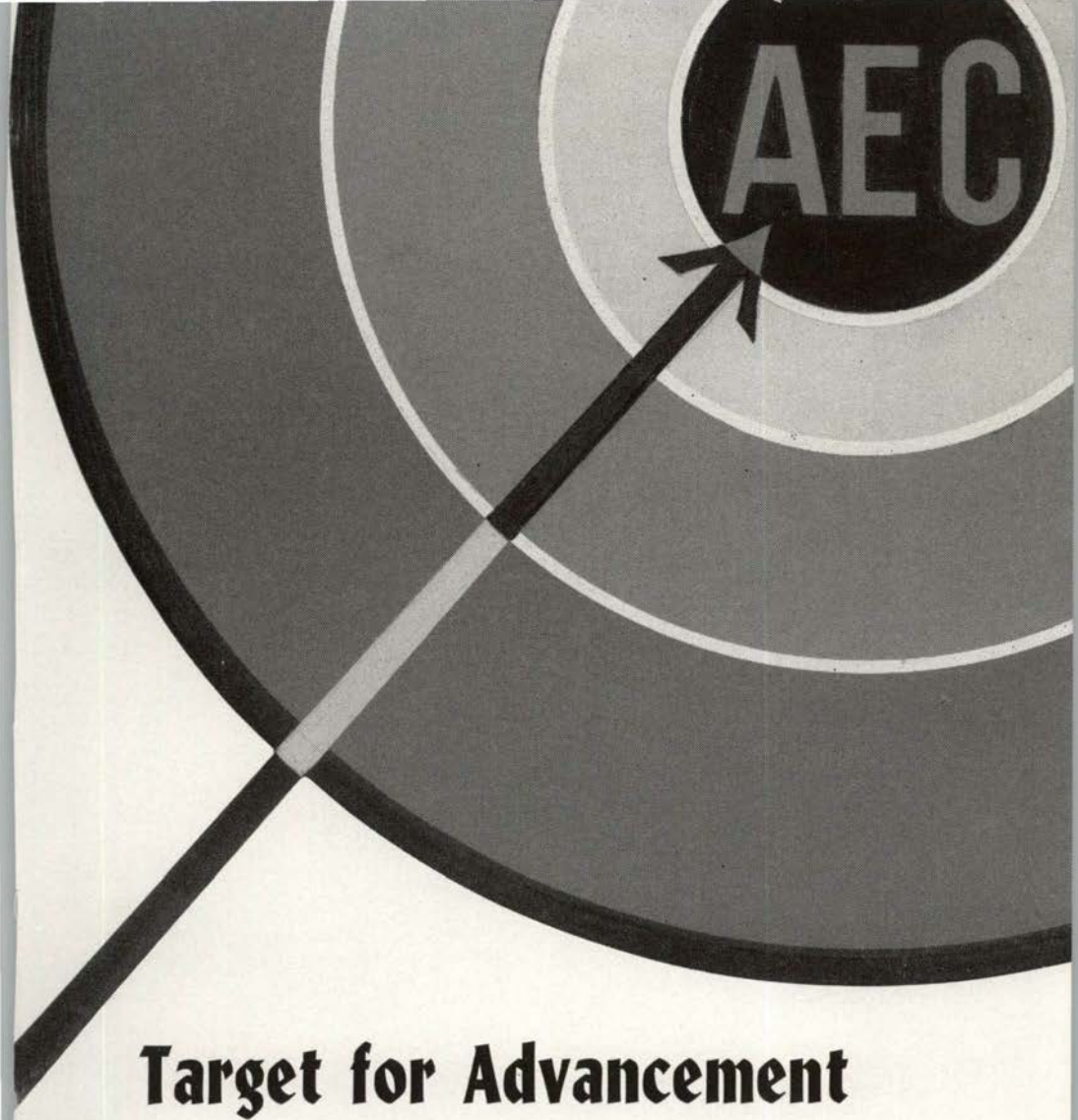
Body stabilized free fall parachuting was developed in France some years ago as a sport which is called "Sky Diving." Sky Diving caught on rapidly in many European countries, and today thousands of men and women are participating in this sport. International competitions have been held for several years. A United States team, led by Captain Istel, placed sixth in the most recent of these competitions, the Third World Parachute Championship meet, held in Moscow in 1956. A fourth world meet is to be held this year in Prague, Czechoslovakia.

More than 15 sport parachute clubs were formed in the United States during the past year. Last fall 19 jumpers, representing 11 colleges, competed in a Second Intercollegiate Parachute Meet at Woodbury, Conn. A trophy, presented by Lt Gen James M. Gavin and known as "Gavin's Gavel," was awarded at the meet. Safety rules for the sport in the United States have been established by the Parachute Club of America.

While current regulations prohibit free fall parachute jumps by army personnel, Department of the Army recently authorized several specifically named active duty jumpers to engage in this activity in connection with approved tests.

It would be tragic if we failed to understand the limitations of technology in providing security. The dearly held hope and perennial fallacy that machines can win a war or preserve the peace is an influence upon public thinking which could work irreparable havoc with our defense. Impressed by the wonders of science and the triumphs of technology, the average American wants to believe that by some mysterious alchemy security can be manufactured in a laboratory or a factory. . . . He is inclined to sieze upon whatever weapon most appeals to his imagination and erroneously endow it with miraculous powers which make it the complete answer to every problem. . . . No weapon is better or more effective than the men who use it. It is of significance only so far as it extends the capabilities of men. No weapon can replace the trained combat soldier, — the man of decision. . . . There can be no substitute for the courage and unique capabilities of the ground soldier. Man himself is the only "ultimate weapon."

SECRETARY OF THE ARMY
WILBER M. BRUCKER



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Noncommissioned officer of 25th Infantry Division in combat in Korea.

NONCOMMISSIONED OFFICER 

By Master Sergeant Frank K. Nicolas

Scientific developments and changes in weapons for war do not reduce the responsibilities of the noncommissioned officer or the need for strong noncommissioned leaders.

This is an age of scientific advancement which progresses at such a dizzying pace that it might be called, "The era of seven-league boots." Ideas located on the far horizon today are accomplishments tomorrow and are relegated to history the day beyond tomorrow. Progress is made by leaps and bounds rather than by cautious, calculated steps. All about us there are changes—changes in environment, in people, in commodities, in idealogies and in weapons for war.

Such an era brings to mind a time-honored French maxim, "The more things change, the more they remain the same." This statement seems incongruous, but if we pause to study it we find that it contains a basic truth. Some things, even in this period of unprecedented technological developments, do not change. One of these is the requirement for competent leadership.

Strong leadership, most certainly, is needed today. It is needed in the Army. And the need is not limited to any particular echelon, nor is it confined to commissioned officers. Qualified and efficient noncommissioned leaders are needed as well—now, as in the past. This requirement has not changed.

The noncommissioned officer always has been held in high esteem by our combat commanders and by battle experienced career soldiers. His importance is recognized by such men. Yet, there seems to be a growing tendency to underestimate the value of noncommissioned leadership which will damage irreparably the Noncommissioned Officer Corps unless we who wear the stripes close ranks and knuckle down to the tasks created by this mighty age of advancement.

Manifold changes do not diminish the need for, but they do place new requirements upon, the noncommissioned officer. As concepts change the employment of forces changes. Habitual practices become obsolete and new ones must be assimilated and made routine in the performance of duty. The astute noncommissioned leader adapts himself to these changes and measures up to his many responsibilities.

To discuss even briefly the role of the noncommissioned officer, it is necessary to understand just what he is and

M/Sgt Frank K. Nicolas, operations sergeant with Headquarters, 10th Infantry Division in Germany, began his military career 14 years ago when he enlisted in the Army at Fort Dix. He was graduated from the Artillery School at Fort Bragg the following year and was assigned to the 228th Field Artillery Battalion with which he served during the remainder of World War II in the European Theater. When that organization returned to the states in 1945, he remained in Germany and served on occupation duty with various units. He then became first sergeant of Headquarters Company, First Army. In 1953 he began a second tour of duty in Europe when he was assigned as first sergeant at Headquarters United States Forces in Austria. During the following year he joined the 10th Division at Fort Riley and went with that unit to Germany.

what he is not. By dictionary definition, "a noncommissioned officer is a subordinate officer appointed from the enlisted personnel of an army and holding his rank by virtue, not of a commission, but of a warrant issued by an appointing authority named by law." While technically accurate, such a statement does not provide a clear or satisfying definition. To arrive at a more comprehensive and more satisfactory description it is necessary to develop a composite picture by considering what he is and what he does.

Those of us who wear stripes on our sleeves labor at many tasks, yet we are not laborers! We instruct, but we are not teachers! Some of us sit behind desks, handle paperwork, type, file and accomplish all sorts of clerical work, but we are not merely clerks! Though we are involved in many technical matters, we are not necessarily technicians!

If these are things we are not, then what are we? The answer is implied in the adage, "War is an art—soldiering a profession." Our endeavors may be classified as professional. Actually, we are professionals—professional soldiers. The chevrons we wear, the rank by which we are addressed, the right we are given to sign our names prefixed by the words, Corporal, Sergeant, Sergeant First Class or Master Sergeant, are the emblems or titles of our profession. They identify us with a degree of attainment, just as "Professor," "Doctor," "Reverend" or "General" identify men of such titles with their profession or position.

The rank and title of the noncommissioned officer are consonant with dignity, honor and service. Dignity demands respect. When rank and title are worn with dignity, the respect of superiors and subordinates becomes the reward. Honor is loyalty, honesty, integrity, faithfulness, trustworthiness—all these and more. Service with honor is a tradition of the Noncommissioned Officer Corps.

As leaders of men, we who are noncommissioned officers hold a lofty position in our military society. But we are also servants. Thomas Jefferson once said, "When a man assumes a public trust . . . he should consider himself public property." We *are* public property, in the service of others. And, if we look about us we find that our commanders are also servants. So are our congressmen, our senators, our Supreme Court judges and even our President. We are all servants of the American people—of our nation. We must never lose sight of this. It is important to an understanding of what we really are.

It is said that "rank has its privileges." This is as it should be, particularly when we remember that one of the primary privileges of rank is to be entrusted with responsibility. Not only must we accept responsibility, we must seek it. Advancement in rank depends largely upon the

degree of initiative generated in the quest of responsibility.

It is not possible to list all of the countless responsibilities of the noncommissioned officer. They range from the responsibility of the combat leader for the lives and welfare of his men to the responsibility of a detail sergeant for police call. Moreover, each day brings new responsibilities to be added to those developed in the past. The good noncommissioned officer regards each as a personal challenge which requires an adequate solution and the exercise of all the logic and sound judgment with which he is endowed. He realizes that the responsibility for success is always shared with others—but responsibility for failure is borne alone.

The major attribute of the noncommissioned officer must be his ability to lead men. We hear the contention that leaders are born—not made. This contention is faulty! Leaders are developed! They are guided by other leaders; but they are made—largely self-made. A man cannot lead without determination, without the will and the desire to lead. He cannot do it without studying, reading, observing, learning. He must apply himself to gain the goal—to develop the talent for military leadership.

Initiative is the first step toward leadership. Aggressiveness is the second. Study is another.

Lieutenant Colonel Percy South writing in the April 1957 issue of *Infantry* magazine, had this to say about reading and study: "Knowledge . . . can be acquired in various ways . . . by instruction or schooling, by observing others, by talking over troublesome questions with associates or seniors and by reading. The latter, in many cases, offers more opportunity for wider acquaintance than the others. From reading, we learn how men think, and that poor thinking has lost more battles than poor fighting. Reading also gives us a standard by which to judge the future . . . reading can help us gain objectivity with which we must view certain issues and problems."

The talent and will to read and study must be kept awake and exploited, for there is no better way to remain abreast of the tremendous changes taking place today in concepts, doctrine and techniques. To be informed is one of our great responsibilities as professional men —as noncommissioned leaders.

This leads to another point—perhaps one of the most salient—our responsibilities in our "off-duty" or free time. The brief period which is not spent directly with or in the interests of our men or our job must be planned. We have no right as noncommissioned officers to permit idleness or thoughtlessness to infringe upon or to defeat the good works we accomplish during duty hours. Every moment must be gainfully employed in the best interests of the service. This time is ours, but what we do with it directly affects our reputation, and not a moment should be allowed to undermine or besmear the good name of the Noncommissioned Officer Corps. We must be, at all times, the epitome of the American leader. We must confine ourselves to those activities which enhance the position of the noncommissioned officer. Friends and acquaintances must be persons of the highest repute, in good community standing, and we must be moderate men in all things save leadership. In leadership we must go all out. We must strive for perfection though it is a goal we may never quite achieve. Our appearance, behavior, bearing and poise must be that of the responsible, the professional noncommissioned officer.

None of these things are new ideas. Nothing said here changes, in any way, previously established standards or requirements. You see, "the more things change, the more they remain the same!"

Only truth about America and its objectives can prepare our Infantrymen for a new kind of battle - the struggle for men's minds.

WAR OF WORDS

Total war. In World War II the term meant that all the resources of a nation were directed toward victory. In any future conflict the term will have a much deeper meaning. Warfare of the future will be directed at the "total man"—his body *and his mind*.

In past wars the opponents usually were satisfied with killing, wounding or capturing enemy troops. A new dimension will be added to these physical objectives in the future: Both sides will seek to capture the minds of enemy soldiers in addition to inflicting physical casualties.

And our recent history indicates that the American soldier may not be as well prepared for this new type of conflict as he could be. It has been claimed that one third of all American soldiers captured in Korea yielded to some form of enemy indoctrination. These men were unprepared for the verbal, ideological assaults made against them in POW compounds.

We must make our front-line fighting men ready for this kind of warfare. The business of fighting a war against words is not inconsistent with the mission of the Infantry. The troop commander, although he already has his hands full with maintaining his unit's physical standards,

By Capt John W. Warren

must undertake the additional burden of defending his men against the enemy's psychological warfare attacks. In addition to being physically hardened, troops must be able to withstand the enemy's attack of words. To this end, our combat forces must be armed with the truth —truth about why they must fight and what they may expect of the enemy. If we fail to arm our men mentally, the consequences in the future may be far more disastrous than in Korea.

Today, Communist governments are conducting a ceaseless "cold war" designed to attack and destroy the foundations of peaceful coexistence. To these nations peace is not a desirable state. On the contrary, they need the threat of war to turn the attention of their own people from the poor existing conditions within their own countries. And, these governments contemplate a never-ending squeeze play in the *war of words which they apply in every conceivable way* short of actual shooting.

Every commander is concerned with the fight for the mental attitudes of his troops. The leader provides the vital link between national policy and the fighting man who carries out that policy. It is essential that our leaders be fully prepared to contend with psychological warfare, including brainwashing techniques and the deadly manner in which brainwashing can be accomplished.

In Korean prison camps men were shuffled and reshuffled wherever unity of squads or groups was suspected. Squad leaders or natural leaders within groups were discouraged in every possible way from exercising leadership. Any resistance to this leader-stifling policy was met with transfer of the individual to another prison camp. Or, if the individual was obviously influential, he was labeled a "reactionary" and hustled off to a "reactionary camp."

This destruction of group unity succeeded in destroying the captive's sole defense. The lone prisoner, being in an extremely vulnerable position, was denied his only conceivable possibility of resistance to indoctrination: the moral, emotional and physical support of his fellow prisoners.

Once group unity was destroyed, the Communists' next move was to divide individuals from one another. This was achieved by destroying mutual trust by the development of an informer system. As in every large group of people a few, for opportunistic reasons, or because of emotional needs or personality defects, became informers in order to secure their

own positions. In the early stages of this informer program, the Communists took every step to insure the protection of their spies.

With the establishment of the informer system the prisoner's feeling of isolation grew. Even close friends could not be trusted, and the only safeguard was to withdraw into a solitary well of isolation.

The nearest approach to actual mental torture of captives in the Communists' psychological program appears to have been in their mail censorship. The prisoner's mail was selected so as to allow him to see only those letters which might upset him: "Dear John" letters announcing transfer of his sweetheart's affection, notices from collection agencies, tragedies at home — anything which would make him feel abandoned, alone and forgotten.

And so the war of words progressed, with an infinite variety of hidden, crushing blows at the prisoner's moral stature, reducing him to a spiritless pygmy.

If our troops had been adequately prepared by being fully informed about such enemy techniques they would have been capable of resisting them with the courage and cunning found in most American fighting men. Unfortunately, our troops entered the Korean conflict with a mental vacuum of information on the moral aspects of combating an immoral enemy.

The American soldier had been brought up in the spirit of fair play. Competitive sports conformed to the rules of good sportsmanship. Even if he fought an individual with bare fists, he took great pride in observing the rules of fair play, whether he lost or won. He carried the same spirit into combat and demonstrated sportsmanship time and time again, often at the cost of his life.

Even the Germans had a similar attitude. Lt Gen Max Pasel, former Chief of Staff of the German Seventh Army, had this to say about the bitter fighting in Normandy:

"The character of the forces, German and American, is evidenced by the fact that in the battle of materiel, during which men were massacred ruthlessly, they nevertheless succeeded in maintaining gallant and fair attitudes in man-to-man combat."

In the Pacific, while engaged in savage close-in combat with an enemy of proved brutality, U.S. soldiers were apprehensive about killing the enemy with the abandon of mass slaughter. It was evident at Kwajalein that our men quickly tired of this massacre type of killing. The slaughter seemed senseless to them, although it was unavoidable. At one point, the taking of one Japanese prisoner cheered a company more than the killing of fifty.

Fair play is commendable on the football field—or perhaps even on the field of battle — but in a life-and-death struggle involving a way of life, the time has come to eliminate the formalities and niceties in the rule book. Attitudes formed in adherence to the "rules" fit too neatly into the following definition: "Psychological warfare vulnerabilities are the attitudes, aspirations and personality traits which, when manifested in particular situations, make individuals susceptible to propaganda."

The general principle of psychological warfare is to ascertain the weak spots in a nation's character and to launch activities which will tend to weaken and eventually destroy the national unity of that nation. It can be thought of as the exploitation of man's emotions, beliefs and superstitions, aiming to confuse the will to resist. In essence this procedure constitutes a vast task of publicity not unlike modern advertising. If successful, the result is the lowering of morale—the systematic suffocation of the healthy

frame of mind characterized by fidelity to cause.

The classic example of "killing" a nation with this technique occurred during World War II when Nazi Germany used it against France. The result is well known. The billions invested by France in her Maginot line of fortifications proved inadequate against the rumors and nickel leaflets employed by the Nazis. French national morale crumpled and the Germans paraded over the unscarred "impregnable" border fortifications.

It is easy to listen to the brigade of dupes and malicious subversives who cry, "It can't happen here in America!" To succumb to this line of thinking is to invite disaster. To cease our vigil against "cold war" psychological-warfare tactics within our national boundaries would be to strangle our will to exist as a free nation.

Truth must be presented to the American soldier as part of his regular training. It must be stressed continually as he prepares for his ultimate role in combat. Patriotism is just as much a part of the average soldier's ideological make-up as his love of home and family. But if he is constantly subjected to the diabolical half-truths and outright lies of enemy psychological-warfare propaganda without the yardstick of truth to measure the facts, he can become mentally exhausted and devoid of a true sense of values.

Training of combat-effective soldiers therefore must entail preparation of minds as well as bodies to meet the rigors of warfare—hot or cold. The soldier must be firmly convinced and devoted to the righteousness of his nation's cause. He must know where he is going; what he is required to do and why. He must know the enemy's political motivation and what may be expected of the enemy — his tactics, techniques and treatment of prisoners of war. This dedicated task is the mission of the troop information and education program — only now assuming its true importance in the training of combat troops. This program provides commanders with the information needed to develop a firm devotion to duty in the accomplishment of any mission, no matter how difficult or distasteful that mission might be.

Comprehensive studies during World War II indicated that troop commanders frequently displayed indifference or even hostility to the troop information program. In addition, relatively poor personnel often were assigned to this program in the field. The average soldier found little or nothing to command his attention and was inclined to resent the program as a whole.

Today's troop information and education hour presents information of current interest and value to the troops. The revitalized program now insists upon qualified and competent personnel to fulfill its mission; the status of the information and education officer is one of great importance to the unit. To a great extent he holds morale on a high level by countering defeatist rumors and ignorance-inspired fears with the prompt application of authentic information.

The troop commander must, therefore, depend upon his troop information and education officer to indoctrinate the men, to show them that they are fighting for a just and righteous cause, and to explain that the contribution of each and every soldier is vital to the accomplishment of the mission.

Authentic information must be supplied to the troops at all times. Unless the information is factual, it is worthless and, quite often, dangerous in end results.

In describing the action of the 1st Battalion, 34th Infantry, 24th Infantry Division, during its first few weeks of combat in Korea, R. A. Gugeler reports: ". . . and Company A, with its peace-

time thoughts, unprepared both psychologically and militarily, found itself faced with the stark reality of war."

During this action, one of the platoon leaders of Company A called his men together to "put an end to the growing anxiety over the possibility of combat." The platoon leader explained to his men that "You've been told repeatedly that this is a police action and that is exactly what it is going to be." He went on to assure his men that rumors of large enemy forces were false and that they would all be back in Japan within a few weeks.

It is not difficult to understand the lieutenant's misstatement of facts. His battalion commander had assured his company commanders that the North Korean soldiers were poorly trained and only half were supplied with weapons. There would be no difficulty in stopping them.

Field Manual 100-5 points out that "Orienting troops, when possible, as to the purpose of the operation . . . contributes to the maintenance of morale." The battalion commander in this case may have had this reference in mind during the briefing, but it would have been more fortunate if he had remembered the Army Regulation which states: "The provision of factual information to troops is a strong defense against enemy propaganda."

During the battle of the Chosin Reservoir, a U.S. general told a group of officers: "The enemy who is delaying you for the moment is nothing more than remnants of Chinese divisions fleeing north. We're still attacking and we're going all the way to the Yalu. Don't let a bunch of Chinese laundrymen stop you." There is no basis for misrepresenting the facts in an attempt to raise morale. In fact, it has been pointed out that it was most disastrous for the Germans during World War II to build morale upon a belief of their invincibility.

Be assured that the enemy will not allow the grass to grow under his feet in his efforts to confound the American cause. His tactical propaganda effort will be designed to penetrate the skin of any soldier having the slightest confusion as to why he is required to fight. General Matthew B. Ridgway recognized this during the early days of his command in the Korean conflict. He issued a statement to the troops of the Eighth Army which is recognized as a brilliant counter-propaganda coup. The morale of the army was sagging. The men were beginning to wonder why they were shedding blood over a terrain that seemed valueless to them. General Ridgway stepped in and closed the breach in morale with a clear-cut statement of the real issues at hand, leaving no doubt in the minds of the U.S. soldiers as to why they were in Korea.

Col Edson D. Raff, commander of the Psychological Warfare Center, has said that "In any future armed conflict, psychological-warfare units will wage a war of words and ideas in the struggle for the minds of men. In this struggle, truth is the primary weapon — the truth about the United States and its objectives and the truth about the enemy and his objectives."

In the formulation of proper defense against psychological warfare, the commander should keep in mind that censorship and suppression isolate dangerous

CAPT JOHN W. WARREN enlisted in the Army in 1943 and fought with the 99th Infantry Battalion in Europe during World War II. He was commissioned upon graduation from the University of Iowa in 1950 and then became an instructor at the Leadership School, Fort Riley, Kansas. After completing the associate company officer course at The Infantry School, Capt Warren served as assistant S3 with the 6th Infantry Regiment, 3d Division, and later, with the 12th Infantry Regiment in Europe. He was aide-de-camp to Maj Gen D. P. Booth in Europe for one year before returning to the United States where he became an editor in The Infantry School's Department of Non-Resident Instruction. Following graduation from the associate advanced course last year, Capt Warren changed his branch to Armor. He is now Adjutant, Northern Area Command, in Korea.

ideas, thus exaggerating the influence of such subversive proposals. Complete insulation of troops from ideas is impossible, but free circulation and examination can keep even the most dangerous ideas in reasonable perspective.

In spite of vigorous preventive measures taken by the Nazi Government, German soldiers and civilians read many Allied propaganda leaflets. The people were threatened with Gestapo decrees, prison sentences and more serious penalties. Nevertheless the leaflets passed from hand to hand throughout entire communities.

It is significant to note that our troops were not entirely immune to the effects of propaganda leaflets. After several days of attacking north during Operation Killer in Korea (November 1951) a platoon leader of the 25th Division had reason to search his men. He discovered that over 50% of them were carrying Chinese "safe conduct" passes. The men explained that their reason for carrying the leaflets was for use "just in case."

The platoon leader wisely chose to let the matter drop. To remove the leaflets from the men, or to threaten them with disciplinary action if they read them, would be playing into the hands of the enemy's psychological-warfare program.

Probably the men were ignorant of the real intent and purpose of the "safe conduct" leaflets. Apparently they were in no serious danger of being infected by an enemy-inspired defeatist attitude. This one small incident dramatically illustrates the need for psychologically preparing troops for combat.

Military knowledge and skill alone do not make a good soldier. Ignorance, doubt, rumor and fear can destroy the effectiveness of a fighting man with devastating precision. It is vitally necessary that a program to combat these psychological-casualty effects be included in every unit commander's training plans. The troop information and education program is designed to immunize the fighting man against the insidious infection of enemy psychological-warfare propaganda with the most effective of all medicines—the truth. Commanders must fulfill their obligation by supplying accurate information in abundant quantities to their troops.

Troop information, as an aspect of the soldier's preparation for combat, is a mission, not a technique. The fundamentals of the program cannot be separated from leadership for, indeed, troop information is leadership, the close and direct relationship of the commander and his troops.

Certainly, no one sitting in Washington can determine precisely what information the men of a unit need at a certain time. It is often up to unit commanders to sift out portions of the mass of information which comes down to them and to augment that information, if necessary, with on-the-spot guidance which is required by their men in any particular situation.

ANSWERS TO QUARTERLY QUIZ (*See page 67*)

Possible score 100 points, expert 90-100, sharpshooter 70-80, marksman 50-60, recruit 30-40 and bolo 0-20. For detailed discussion of the answers check the references listed.

1. The battle group executes the position defense most effectively on a 4000- to 6000-yard frontage. To reduce the vulnerability of the organization to atomic attack, the reserve companies may be located in greater depth. The battle group's defensive sector is governed by boundaries and limiting points assigned by the division commander. The battle group commander further subdivides his area, according to his plan of defense, into company defensive sectors using boundaries and limiting points to define the frontline company's areas.

The figures listed above are considered desirable in view of weapons and equipment currently available. However, anticipated future conditions undoubtedly will result in a substantial increase in the scale of limits for deployment of the pentomic battle group. Anyone concerned with the employment of this unit must habitually think in terms of wider frontages and depths on the atomic battlefield. (Chap 2, Sec V, Par 91, Advance Sheet, Infantry Division Battle Group, Tactical Department, United States Army Infantry School, October 1957, and *Infantry* magazine, October 1957, page 12, "Battle Group Tactics for Defense," Pars 1 and 3 and Editor's Note.)

2. **b.** The fire support plan would include maintenance of normal nonatomic fires in the area and on-call atomic fires. Since the success of a night withdrawal depends primarily upon secrecy, normally a night withdrawal is made without the use of scheduled atomic fires as scheduled fires may alert the enemy and provoke atomic countermeasures. (Chap 3, Sec II, Pars 147f and 148d(2), Advance Sheet, Infantry Division Battle Group, Tactical Department, United States Army Infantry School, October 1957.)

3. An atomic no-fire line is a line established by division based on recommendations from the battle groups. It is similar in purpose to the direct support artillery no-fire line. Higher echelons of command may employ atomic weapons beyond this line without coordination with the force that established the line, provided the casualty or damage producing effects (including flash blindness) do not fall short of the line. When feasible, commanders of subordinate units should be informed of the use of atomic fire beyond the line. (Chap 4, Sec VIII, Par 71b(2), TT 7-100-2, March 1957.)

4. The preferred method of controlling an attack on foot is by assigning a line of departure, a zone of action and one or more intermediate objectives for each attacking company. The objectives are so located that they will cause minimum massing of the companies. Objectives are assigned to control the direction and rate of movement of the attacking companies, and to insure that specific critical areas are cleared. Zones of action are assigned to provide adequate space for dispersion and usable approaches to each attacking company. (Chap 1, Sec II,

Par 15c(1) and (2), Advance Sheet, Infantry Division Battle Group, Tactical Department, United States Army Infantry School, October 1957.)

5. With the cartridge extension, the maximum range of the M-329 shell is 6000 yards as compared to 4400 for the M-2 round. (Firing Table, 4.2-F-1, Department of the Army, December 1954.)

6. Army Aviation transport battalions are normally assigned to a field army or separate corps. When assigned to a field army they subsequently may be attached to a corps and employed as corps troops. They may support units of the corps by being further attached to or placed under operational control of subordinate corps units for specific missions. Normally, these battalions are not attached below division level. (Chap 2, Sec 1, Par 14, TT 57-35-2, October 1956.)

7. Characteristics of the carrier, personnel, M-59 (Infantry carrier), include cross-country mobility, protection while moving through fire swept areas, shielding while moving across areas of radiation contamination, and a limited amphibious capability. During battlefield operations, the division may utilize the carriers, along with tank elements, to move Infantrymen into positions where they can dismount and close with the enemy or they may be employed in a conventional troop transport role. The carriers may be used also to evacuate casualties, to transport supplies through areas subjected to enemy fire and in the exploitation of atomic fires. (Par 38c(2), (3) and (4), TT 7-100-2, March 1957.)

8. **a.** Wire normally is not laid during a march or movement to contact. However, commercial wire systems and existing field wire circuits may be used after coordination with and approval of higher headquarters. **b.** Wire is the best means of communication to use during a night attack. Wire is laid to the attack echelon, to fire support units and to the reserve. When possible, wire communication is maintained throughout the attack and during the reorganization and consolidation. (Pars 46b(5) and 48a, FM 7-21, January 1957.)

9. **c.** The date-time group is the correct reference to identify a message which has been previously transmitted. (Par 42d, FM 11-17, December 1956.)

10. **No.** The leadership responsibilities of the commander remain constant. These responsibilities are (1) to accomplish his mission and (2) to provide for the welfare of his men. It is important to note that in the event a conflict arises in the mind of the commander regarding these responsibilities, the mission must take preference. Normally, when a commander accomplishes his mission, he performs his responsibility of providing for the welfare of his men. (Chap 2, Par 8b(1) and (2), FM 22-100, February 1953; Sec II, Par 12b and c, USAIS Instructional Material, Documents 6184- and 6193-1, April 1957.)

If an aggressor believes that he can be beaten in war he is not likely to start one. But to be convincing, this deterrent capability must actually exist. It cannot be talk, or bluff, or threat. It must be supported by visible, tangible evidence of military, economic, political, and moral strength in being.

PENTOMIC TERMINOLOGY

Reorganization of Infantry, Airborne and Armored divisions under the pentomic concept has created a number of new units and resulted in the renaming of others. Many Infantrymen are not familiar with these changes. Unless you have been working with the development of pentomic organizations or have access to the latest revisions of draft TOEs you may have some difficuty in identifying or referring to current units.

So that Infantry readers may better understand material presented on these new organizations, we are publishing the latest approved titles and units designations for pentomic divisional TOE units. The titles and designations have been developed pursuant to a program for modernizing U. S. Army symbolism and terminology and will be used in all future official publications.

While Infantrymen will be concerned primarily with the Infantry and Airborne units we are including approved terminology for elements of the Armored division for those who will be associated with or interested in this division.

Note: Three items are shown for each unit of the division. In the sequence listed these are: the official title of the unit, the TOE number for that unit (in parenthesis) and the unit designation.

Infantry Division

INFANTRY DIVISION (**7T**). __Inf Div.

INFANTRY DIVISION HQ & HQ COMPANY (**7-2T**). Hq, __Inf Div. Hq Co, __Inf Div.

INFANTRY DIVISION BATTLE GROUP (**7-11T**). —bg, —Inf.

HQ & HQ COMPANY, INFANTRY DIVISION BATTLE GROUP (**7-12T**). Hq, —bg, —Inf. Hq Co, —bg, —Inf.

RIFLE COMPANY, INFANTRY DIVISION BATTLE GROUP (**7-17T**). Co__, —bg, —Inf.

MORTAR BATTERY, INFANTRY DIVISION BATTLE GROUP, 105MM (**6-18T**). Mort Btry (105mm), —bg, —Inf.

INFANTRY DIVISION ARMOR BATTALION, 90MM (**17-65T**). __Med Tk Bn (Patton), __Armor.

HQ & HQ COMPANY, INFANTRY DIVISION ARMOR BATTALION, 90MM (**17-66T**). Hq, __Med Tk Bn (Patton), __Armor. Hq Co, __Med Tk Bn (Patton), __Armor.

MEDIUM TANK COMPANY, INFANTRY DIVISION ARMOR BATTALION, 90-MM (**17-67T**). Co__, __Med Tk Bn (Patton), __Armor.

INFANTRY DIVISION CAVALRY SQUADRON (**17-85T**). __Recon Sq, __Cav.

HQ & HQ TROOP, INFANTRY DIVISION CAVALRY SQUADRON (**17-86T**). Hq, __Recon Sq, __Cav Hq Troop, __Recon Sq, __Cav.

RECONNAISSANCE TROOP, INFANTRY DIVISION CAVALRY SQUADRON (**17-87T**). Troop__, __Recon Sq, __Cav.

INFANTRY DIVISION SIGNAL BATTALION (**11-5T**). __Sig Bn (Inf Div).

HQ & HQ COMPANY, INFANTRY DIVISION SIGNAL BATTALION (**11-6T**). Hq, __Sig Bn (Inf Div) Hq Co, __Sig Bn (Inf Div).

COMMAND OPERATIONS COMPANY, INFANTRY DIVISION SIGNAL BATTALION (**11-7T**). Co__ (Comd Opr), __ Sig Bn (Inf Div).

FORWARD COMMUNICATIONS COMPANY, INFANTRY DIVISION SIGNAL BATTALION (**11-8T**). Co__ (Fwd Comm), __Sig Bn (Inf Div).

INFANTRY DIVISION ENGINEER BATTALION (**5-15T**). __Engr Bn (Inf Div).

HQ & HQ COMPANY, INFANTRY DIVISION ENGINEER BATTALION (**5-16T**). Hq, __Engr Bn (Inf Div). Hq Co, __Engr Bn (Inf Div).

ENGINEER COMPANY, INFANTRY DIVISION ENGINEER BATTALION (**5-17T**). Co__, __Engr Bn (Inf Div).

INFANTRY DIVISION ORDNANCE BATTALION (**9-25T**). __Ord Bn (Inf Div).

HQ & MAIN SUPPORT COMPANY, INFANTRY DIVISION ORDNANCE BATTALION (**9-26T**). Hq, __Ord Bn (Inf Div). Co__ (Main Spt), __ Ord Bn (Inf Div).

FORWARD SUPPORT COMPANY, INFANTRY DIVISION ORDNANCE BATTALION (**9-27T**). Co__ (Fwd Spt), __Ord Bn (Inf Div).

INFANTRY DIVISION MEDICAL BATTALION (**8-15T**). __Med Bn (Inf Div).

HQ & HQ DETACHMENT, INFANTRY DIVISION MEDICAL BATTALION (**8-16T**). Hq, __Med Bn (Inf Div). Hq Det, __Med Bn (Inf Div).

AMBULANCE COMPANY, INFANTRY DIVISION MEDICAL BATTALION (**8-17T**). Co__ (Amb), __Med Bn (Inf Div).

CLEARING COMPANY, INFANTRY DIVISION MEDICAL BATTALION (**8-18T**). Co__ (Clr), __Med Bn (Inf Div).

INFANTRY DIVISION TRANSPORTATION BATTALION (**55-75T**). __Trans Bn (Inf Div).

HQ & HQ COMPANY, INFANTRY DIVISION TRANSPORTATION BATTALION (**55-76T**). Hq, __Trans Bn (Inf Div). Hq Co, __Trans Bn (Inf Div).

TRUCK TRANSPORT COMPANY, INFANTRY DIVISION TRANSPORTATION BATTALION (**55-77T**). Co__ (Trk), __ Trans Bn (Inf Div).

ARMORED CARRIER COMPANY, INFANTRY DIVISION TRANSPORTATION BATTALION (**55-78T**). Co__ (Armd Carr), __Trans Bn (Inf Div).

HQ & HQ DETACHMENT, INFANTRY DIVISION TRAINS & INFANTRY DIVISION BAND (**7-62T**). Hq, __Inf Div Tn. Hq Det, __Inf Div Tn. __Inf Div Band.

INFANTRY DIVISION QUARTERMASTER COMPANY (**10-17T**). __QM Co (Inf Div).

INFANTRY DIVISION ADMINISTRATION COMPANY (**12-7T**). __Admin Co, (Inf Div).

INFANTRY DIVISION AVIATION COMPANY (**1-7T**). __Avn Co (Inf Div).

INFANTRY DIVISION ARTILLERY (**6-100T**). __Inf Div Arty.

HQ & HQ BATTERY, INFANTRY DIVISION ARTILLERY (**6-101T**). Hq, __ Inf Div Arty. Hq Btry, __Inf Div Arty.

FIELD ARTILLERY HOWITZER BATTALION, 105MM, TOWED (**6-125T**). __ How Bn (105mm), __Arty.

HQ & HQ BATTERY, FIELD ARTILLERY HOWITZER BATTALION, 105MM, TOWED (**6-126T**). Hq, __How Bn (105mm), __Arty. Hq Btry, __How Bn (105mm), __Arty.

FIELD ARTILLERY HOWITZER BATTERY, 105MM, TOWED (**6-127T**). Btry__, __How Bn (105mm), __Arty.

SERVICE BATTERY, FIELD ARTILLERY HOWITZER BATTALION, 105MM, TOWED (**6-129T**). Svc Btry, ___How Bn (105mm), ___Arty.

INFANTRY DIVISION FIELD ARTILLERY COMPOSITE BATTALION (**6-145T**). ___FA Bn (Rkt/How), ___Arty.

HQ & HQ BATTERY, INFANTRY DIVISION FIELD ARTILLERY COMPOSITE BATTALION (**6-146T**). Hq, ___FA Bn (Rkt/How), ___Arty. Hq Btry, FA Bn (Rkt/How), ___Arty.

FIELD ARTILLERY HOWITZER BATTERY, 155MM, TOWED (**6-147T**). Btry___ (155mm How), ___FA Bn (Rkt/How), ___Arty.

FIELD ARTILLERY HOWITZER BATTERY, 8-INCH, TOWED (**6-148T**). Btry___ (8-In How), ___FA Bn (Rkt/How), ___Arty.

SERVICE BATTERY, INFANTRY DIVISION FIELD ARTILLERY COMPOSITE BATTALION (**6-149T**). Svc Btry. ___FA Bn (Rkt/How), ___Arty.

FIELD ARTILLERY MISSILE BATTERY, 762MM ROCKET SELF PROPELLED, INFANTRY DIVISION FIELD ARTILLERY COMPOSITE BATTALION (**6-150T**). Btry___ (Honest John) (SP), ___FA Bn (Rkt/How), ___Arty.

Airborne Division

AIRBORNE DIVISION (**57T**). ___Abn Div.

AIRBORNE DIVISION COMMAND & CONTROL BATTALION (**57-5T**). Comd & Con Bn, ___Abn Div.

HQ & HQ COMPANY, AIRBORNE DIVISION COMMAND & CONTROL BATTALION (**57-6T**). Hq, ___Abn Div. Hq, Comd & Con Bn, ___Abn Div. Hq Co, Comd & Con Bn, ___Abn Div.

AIRBORNE DIVISION ADMINISTRATION COMPANY (**12-157T**). ___Admin Co (Abn Div).

AIRBORNE DIVISION AVIATION COMPANY (**1-57T**). ___Avn Co (Abn Div).

AIRBORNE DIVISION RECONNAISSANCE TROOP (**57-57T**). ___Recon Troop (Abn).

AIRBORNE DIVISION BATTLE GROUP (**7-31T**). —Abn bg, —Inf.

HQ & HQ COMPANY, AIRBORNE DIVISION BATTLE GROUP (**7-32T**). Hq, —Abn bg, —Inf. Hq Co, —Abn bg, —Inf.

RIFLE COMPANY, AIRBORNE DIVISION BATTLE GROUP (**7-37T**). Co___, ___ Abn bg, —Inf.

MORTAR BATTERY, AIRBORNE DIVISION BATTLE GROUP, 105MM (**6-228T**). Mort Btry (105mm), —Abn bg, ___Inf.

AIRBORNE DIVISION ENGINEER BATTALION (**5-225T**). ___Engr Bn (Abn Div).

HQ & HQ COMPANY, AIRBORNE DIVISION ENGINEER BATTALION (**5-226T**). Hq, ___Engr Bn (Abn Div). Hq Co, ___Engr Bn (Abn Div).

ENGINEER COMPANY, AIRBORNE DIVISION ENGINEER BATTALION (**5-227T**). Co___, ___Engr Bn (Abn Div).

AIRBORNE DIVISION SUPPORT GROUP (**29-55T**). Spt Gp, ___Abn Div.

HQ & HQ COMPANY, AIRBORNE DIVISION SUPPORT GROUP (**29-56T**). Hq, Spt Gp, ___Abn Div. Hq Co, Spt Gp, ___Abn Div. ___Abn Div Band.

AIRBORNE DIVISION QUARTERMASTER PARACHUTE SUPPLY COMPANY (**10-337T**). ___QM Prcht Sup Co (Abn Div).

AIRBORNE DIVISION MAINTENANCE BATTALION (**29-65T**). ___Maint Bn (Abn Div).

HQ & MAIN SUPPORT COMPANY, AIRBORNE DIVISION MAINTENANCE BATTALION (**29-66T**). Hq, ___Maint Bn (Abn Div). Co___ (Main Spt), ___ Maint Bn (Abn Div).

EMERGENCY REPAIR COMPANY, AIRBORNE DIVISION MAINTENANCE BATTALION (**29-67T**). Co__ (Emerg Rep), __Maint Bn (Abn Div).

AIRBORNE DIVISION SUPPLY AND TRANSPORT COMPANY (**29-57T**). __Sup & Trans Co (Abn Div).

AIRBORNE DIVISION MEDICAL COMPANY (**8-67T**). __Med Co (Abn Div).

AIRBORNE DIVISION SIGNAL BATTALION (**11-555T**). __Sig Bn (Abn Div).

HQ & HQ DETACHMENT, AIRBORNE DIVISION SIGNAL BATTALION (**11-556T**). Hq, __Sig Bn (Abn Div). Hq Det, __Sig Bn (Abn Div).

COMMAND OPERATIONS COMPANY, AIRBORNE DIVISION SIGNAL BATTALION (**11-557T**). Co__ (Comd Opr), __Sig Bn (Abn Div).

FORWARD COMMUNICATIONS COMPANY, AIRBORNE DIVISION SIGNAL BATTALION (**11-558T**). Co__ (Fwd Comm), __Sig Bn (Abn Div).

AIRBORNE DIVISION ARTILLERY (**6-200T**). __Abn Div Arty.

HQ & HQ BATTERY, AIRBORNE DIVISION ARTILLERY (**6-201T**). Hq, __ Abn Div Arty. Hq Btry, __Abn Div Arty.

AIRBORNE DIVISION FIELD ARTILLERY HOWITZER BATTERY, 105MM (**6-227T**). Btry__ (105mm) (Abn), __Arty.

AIRBORNE DIVISION FIELD ARTILLERY MISSILE BATTERY, 762MM ROCKET (**6-238T**). Btry__ (Honest John) (Abn), __Arty.

Armored Division

ARMORED DIVISION (**17T**). __Armd Div.

ARMORED DIVISION HQ & HQ COMPANY (**17-2T**). Hq, __Armd Div. Hq Co, __Armd Div.

HQ & HQ COMPANY, ARMORED DIVISION COMBAT COMMAND (**17-22T**). Hq, CC__, __Armd Div. Hq Co, CC __, __Armd Div.

ARMORED INFANTRY BATTALION (**7-25T**). __Armd Rifle Bn, __Inf.

HQ & HQ COMPANY, ARMORED INFANTRY BATTALION (**7-26T**). Hq, __ Armd Rifle Bn, __Inf. Hq Co, __ Armd Rifle Bn, __Inf.

RIFLE COMPANY, ARMORED INFANTRY BATTALION (**7-27T**). Co__, __Armd Rifle Bn, __Inf.

ARMORED DIVISION ARMOR BATTALION, 90MM (**17-25T**). __Med Tk Bn (Patton), __Armor.

HQ & HQ COMPANY, ARMORED DIVISION ARMOR BATTALION, 90MM (**17-26T**). Hq, __Med Tk Bn (Patton), __Armor. Hq Co, —Med Tk Bn (Patton), __Armor.

MEDIUM TANK COMPANY, ARMORED DIVISION ARMOR BATTALION, 90-MM (**17-27T**). Co__, __Med Tk Bn (Patton), __Armor.

ARMORED CAVALRY SQUADRON (**17-45T**). __Recon Sq, __Cav.

HQ & HQ TROOP, ARMORED CAVALRY SQUADRON (**17-46T**). Hq, __Recon Sq, __Cav. Hq Trp, __Recon Sq, __Cav.

RECONNAISSANCE TROOP, ARMORED CAVALRY SQUADRON (**17-57T**). Trp __, __Recon Sq, __Cav.

ARMORED DIVISION ENGINEER BATTALION (**5-215T**). __Engr Bn (Armd Div).

HQ & HQ COMPANY, ARMORED DIVISION ENGINEER BATTALION (**5-216T**). Hq, __Engr Bn (Armd Div). Hq Co, __Engr Bn (Armd Div).

ENGINEER COMPANY, ARMORED DIVISION ENGINEER BATTALION (**5-217T**). Co__, __Engr Bn (Armd Div).

BRIDGE COMPANY, ARMORED DIVISION ENGINEER BATTALION (**5-218T**). Co__ (Bridge), __Engr Bn (Armd Div).

ARMORED DIVISION SIGNAL BATTALION (**11-55T**). ___Sig Bn (Armd Div).

HQ & HQ COMPANY, ARMORED DIVISION SIGNAL BATTALION (**11-56T**). Hq, ___Sig Bn (Armd Div). Hq Co, ___Sig Bn (Armd Div).

COMMAND OPERATIONS COMPANY, ARMORED DIVISION SIGNAL BATTALION (**11-57T**). Co___ (Comd Opr), ___Sig Bn (Armd Div).

FORWARD COMMUNICATIONS COMPANY, ARMORED DIVISION SIGNAL BATTALION (**11-58T**). Co___ (Fwd Comm), ___Sig Bn (Armd Div).

ARMORED DIVISION ORDNANCE BATTALION (**9-65T**). ___Ord Bn (Armd Div).

HQ & MAIN SUPPORT COMPANY, ARMORED DIVISION ORDNANCE BATTALION (**9-66T**). Hq, ___Ord Bn (Armd Div). Co___ (Main Spt), ___Ord Bn (Armd Div).

FORWARD SUPPORT COMPANY, ARMORED DIVISION ORDNANCE BATTALION (**9-67T**). Co___ (Fwd Spt), ___ Ord Bn (Armd Div).

ARMORED DIVISION QUARTERMASTER BATTALION (**10-45T**). ___QM Bn (Armd Div).

HQ & HQ DETACHMENT, ARMORED DIVISION QUARTERMASTER BATTALION (**10-46T**). Hq, ___QM Bn (Armd Div). Hq Det, ___QM Bn (Armd Div).

SUPPLY COMPANY, ARMORED DIVISION QUARTERMASTER BATTALION (**10-47T**). Co___ (Sup), ___QM Bn (Armd Div).

FIELD SERVICE COMPANY, ARMORED DIVISION QUARTERMASTER BATTALION (**10-48T**). Co___ (Fld Svc), ___ QM Bn (Armd Div).

ARMORED DIVISION MEDICAL BATTALION (**8-75T**). ___Med Bn (Armd Div).

HQ & HQ DETACHMENT, ARMORED DIVISION MEDICAL BATTALION (**8-76T**). Hq, ___Med Bn (Armd Div). Hq Det, ___Med Bn (Armd Div).

AMBULANCE COMPANY, ARMORED DIVISION MEDICAL BATTALION (**8-77T**). Co___ (Amb), ___Med Bn (Armd Div).

CLEARING COMPANY, ARMORED DIVISION MEDICAL BATTALION (**8-78T**). Co___ (Clr), ___Med Bn (Armd Div).

ARMORED DIVISION ADMINISTRATION COMPANY (**12-27T**). ___Admin Co (Armd Div).

HQ & HQ DETACHMENT, ARMORED DIVISION TRAINS AND ARMORED DIVISION BAND (**17-62T**). Hq, ___Armd Div Tn. Hq Det, ___Armd Div Tn. ___Armd Div Band.

ARMORED DIVISION MP COMPANY (**19-29T**). ___MP Co (Armd Div).

ARMORED DIVISION AVIATION COMPANY (**1-17T**). ___Avn Co (Armd Div).

ARMORED DIVISION ARTILLERY (**6-300T**). ___Armd Div Arty.

HQ & HQ BATTERY, ARMORED DIVISION ARTILLERY (**6-301T**). Hq, ___Armd Div Arty. Hq Btry, ___Armd Div Arty.

FIELD ARTILLERY HOWITZER BATTALION, 105MM SELF PROPELLED (**6-315T**). ___How Bn (105mm) (SP), ___Arty.

HQ & HQ BATTERY, FIELD ARTILLERY HOWITZER BATTALION, 105MM, SELF PROPELLED (**6-316T**). Hq, ___ How Bn (105mm) (SP), ___Arty. Hq Btry, ___How Bn (105mm) (SP), ___Arty.

FIELD ARTILLERY HOWITZER BATTERY, 105MM, SELF PROPELLED (**6-317T**). Btry___, ___How Bn (105-mm) (SP), ___Arty.

SERVICE BATTERY, FIELD ARTILLERY HOWITZER BATTALION, 105MM, SELF PROPELLED (**6-319T**). Svc Btry, ___How Bn (105mm) (SP), ___Arty.

ARMORED DIVISION FIELD ARTILLERY COMPOSITE BATTALION (**6-325T**). ___FA Bn (Rkt/How), ___Arty.

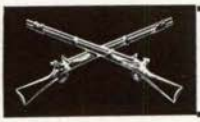
Hq & Hq Battery, Armored Division Field Artillery Composite Battalion (**6-326T**). Hq, __FA Bn (Rkt/How), __Arty. Hq Btry, __FA Bn (Rkt/How), __Arty.

Field Artillery Howitzer Battery, 155MM, Self Propelled (**6-327T**). Btry__ (155mm How), (SP), __ FA Bn (Rkt/How), __Arty.

Field Artillery Howitzer Battery, 8-Inch, Self Propelled (**6-328T**). Btry__ (8-In How) (SP), __FA Bn (Rkt/How), __Arty.

Service Battery, Armored Division Field Artillery Composite Battalion (**6-329T**). Svc Btry, __FA Bn (Rkt/How), __Arty.

Field Artillery Missile Battery, 762MM Rocket, Self Propelled, Armored Division Field Artillery Composite Battalion (**6-330T**). Btry__ (Honest John) (SP), __FA Bn (Rkt/How), __Arty.



SCHOOL TERMINOLOGY

The following unit designations will be used as standard terminology in all future U. S. Army Infantry School problems and instructional material on the new pentomic Infantry and Airborne divisions. The information in parenthesis will not be used unless specifically required for instruction or clarity.

Infantry Division

10th Infantry Division
Hq & Hq Co, 10th Inf Div
Battle Groups
1st bg, 87th Inf
Hq & Hq Co
Co A
Co B
Co C
Co D
Mort Btry (105mm)
2d bg, 7th Inf
2d bg, 10th Inf
2d bg, 15th Inf
2d bg, 29th Inf
2d Med Tk Bn (Patton), 69th Armor
Hq & Hq Co
Co A
Co B
Co C
Co D
Co E
3d Recon Sq, 7th Cav
Hq & Hq Trp
Trp A
Trp B
Trp C
41st Engr Bn
Hq & Hq Co
Co A
Co B
Co C
Co D
Co E
10th Sig Bn
Hq & Hq Co
Co A (Comd Opr)
Co B (Fwd Comm)
Division Artillery
Hq & Hq Btry
2d How Bn (105mm), 7th Arty
Hq & Hq Btry
Btry A
Btry B
Btry C

Btry D
Btry E
Svc Btry
2d FA Bn (Rkt/How), 9th Arty
Hq & Hq Btry
Btry F (155mm How)
Btry G (155mm How)
Btry H (8-In How)
Btry I (Honest John) (SP)
Svc Btry

DIVISION TRAINS
Hq & Hq Det and Div Band
10th QM Co
10th Med Bn
Hq Det
Co A (Amb)
Co B (Clr)
710th Ord Bn
Co A (Main Spt)
Co B (Fwd Spt)
10th Avn Co
10th Admin Co
10th Trans Bn
Hq & Hq Co
Co A (Trk)
Co B (Armd Carr)
Co C (Armd Carr)

Airborne Division

11th Airborne Division
Command and Control Bn (Abn)
Hq & Hq Co
11th Admin Co (Abn)
11th Avn Co (Abn)
11th Recon Trp (Abn)
11th Sig Bn (Abn)
Hq Det
Co A (Comd Opr)
Co B (Fwd Comm)

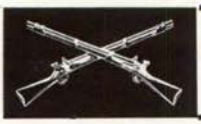
AIRBORNE BATTLE GROUPS
1st Abn bg, 187th Inf
Hq & Hq Co
Co A
Co B
Co C
Co D
Co E
Mort Btry (105mm)
2d Abn bg, 502d Inf
1st Abn bg, 503d Inf
2d Abn bg, 504th Inf
2d Abn bg, 505th Inf

127th Engr Bn (Abn)
Hq & Hq Co
Co A
Co B

DIVISION ARTILLERY
Hq & Hq Btry
Btry A (105mm) (Abn), 320th Arty
Btry B (105mm) (Abn), 320th Arty
Btry C (105mm) (Abn), 320th Arty
Btry D (105mm) (Abn), 321st Arty
Btry E (105mm) (Abn), 321st Arty
Btry I (Honest John) (Abn), 377th Arty

SUPPORT GROUP
Hq & Hq Co and Div Band
11th QM Prcht Sup Co (Abn)
11th Sup and Trans Co (Abn)
11th Med Co (Abn)
711th Maint Bn (Abn)
Co A (Main Spt)
Co B (Emerg Rep)

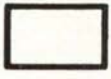
Several new terms have resulted from changes in tactical concepts. They include FEBA, RSL, and LCP. FEBA, the forward edge of the battle area, replaces the expression "main line of resistance." RSL signifies the reconnaissance and security line which is a series of lateral outposts, roadblocks, observation posts and reconnaissance elements located from 1000 to 4000 yards forward of the FEBA. LCP is the logistical control point, the coordinating point for all activities within the battle group supply and service area.



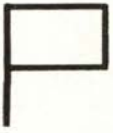
SCHOOL SYMBOLS

Since no specific symbols have been approved as yet by Department of the Army for new units of the pentomic Infantry division, the United States Army Infantry School has developed interim symbols for use in school problems and instructional material. These symbols are built up, as in the past, starting with the basic rectangle for a troop unit, a triangle for an observation post, etc.; then adding the branch symbol inside, and the size, identification and type weapon, if any, at the top, sides and bottom respectively. Squad, section, platoon and company symbols retain the same size designations as before. Three vertical lines are used to denote the battle group. Battalions, such as the Infantry division medical or transportation battalions, retain the two vertical line symbol. When any unit within the division consists entirely of personnel of a branch other than Infantry, the unit symbol is constructed with the appropriate branch symbol.

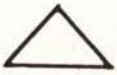
The basic symbols remain the same as those used in the past. Common basic symbols are:



A troop unit



A command post



An observation post

A medical installation

Common branch symbols are:

Infantry

Artillery

Engineer

Armor

Medical

Armored cavalry or recon unit

In some cases units can be identified only by the crew-served weapon they employ. Following are basic symbols for crew-served weapons, weapons characteristics and different roles in which weapons may be employed:

Basic symbol for Infantry crew-served weapon

Basic symbol for Artillery crew-served weapon

High angle of fire weapon (place at base of symbol)

Antitank weapon (place at base of symbol)

Antiaircraft weapon (place around symbol)

Self-propelled, tracked or half-tracked (place around symbol)

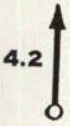
SP

Self-propelled, wheeled (place at right of symbol)

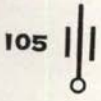
Following are some examples of completed weapons symbols:

Light machinegun

106mm recoilless rifle



4.2-inch mortar



105mm howitzer

90mm AT gun

Light gun tank

Medium gun tank

The following examples illustrate the method of "building-up" a military symbol using the basic, branch and weapon symbol along with the unit identification:

This is a troop unit.

This makes it an Infantry troop unit.

This makes it the 1st Battle Group, 87th Infantry.

This makes it Company A, 1st Battle Group, 87th Infantry.

This makes it the 1st Platoon, Company A, 1st Battle Group, 87th Infantry.

This makes it the 2d Squad, 1st Platoon, Company A, 1st Battle Group, 87th Infantry.

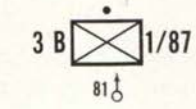
The following examples illustrate completed symbols for units of the pentomic Infantry and Airborne divisions, including samples of the new units:

2d Squad, 4th Platoon, Company D, 1st Battle Group, 87th Infantry

Weapons Squad, 4th Platoon, Company D, 1st Battle Group, 87th Infantry

Weapons Platoon, Company D, 1st Battle Group, 87th Infantry

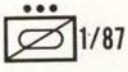
2d Antitank Squad, Weapons Platoon, Company C, 1st Battle Group, 87th Infantry



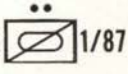
3d 81mm Mortar Squad, Weapons Platoon, Company B, 1st Battle Group, 87th Infantry

Communications Platoon, Headquarters Company, 1st Battle Group, 87th Infantry

Counterfire Squad, Headquarters Company, 1st Battle Group, 87th Infantry

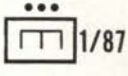


Reconnaissance Platoon, Headquarters Company, 1st Battle Group, 87th Infantry

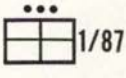


Tank Section, Reconnaissance Platoon, Headquarters Company, 1st Battle Group, 87th Infantry

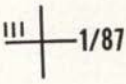
2d Assault Gun Section, Assault Gun Platoon, Headquarters Company, 1st Battle Group, 87th Infantry



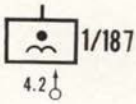
Engineer Platoon, Headquarters Company, 1st Battle Group, 87th Infantry



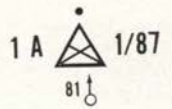
Medical Platoon, Headquarters Company, 1st Battle Group, 87th Infantry



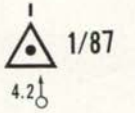
Aid Station, 1st Battle Group, 87th Infantry



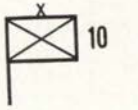
Mortar Battery, 1st Airborne Battle Group, 187th Infantry



Observation Post, 1st 81mm Mortar Squad, Weapons Platoon, Company A, 1st Battle Group, 87th Infantry

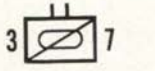


Observation Post, Mortar Battery, 1st Battle Group, 87th Infantry



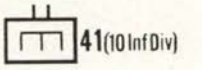
Brigade Command Post, 10th Infantry Division

2d Medium Tank Battalion (Patton), 69th Armor

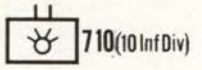


3d Recon Squadron, 7th Cavalry

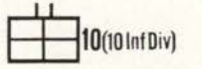
10th Signal Battalion (Inf Div)



41st Engineer Battalion (Inf Div)



710th Ordnance Battalion (Inf Div)

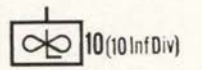


10th Medical Battalion (Inf Div)

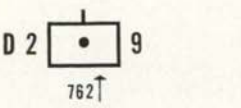
10th Transportation Battalion (Inf Div)

10th Quartermaster Company (Inf Div)

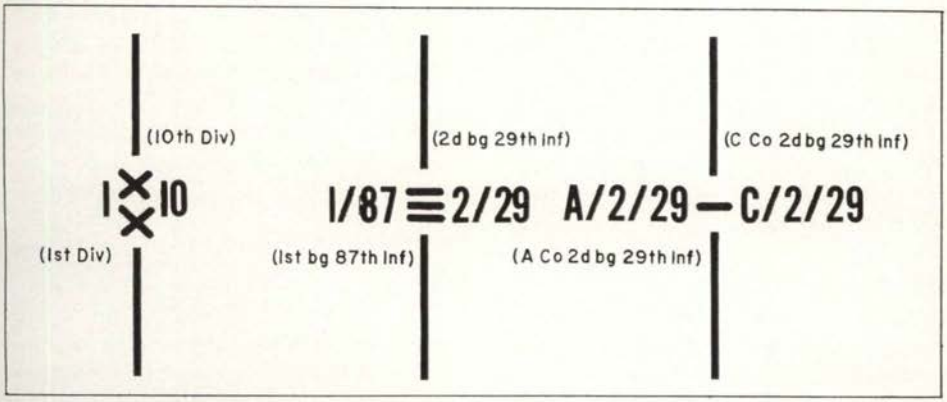
10th Administration Company (Inf Div)



10th Aviation Company (Inf Div)



Battery D (Honest John) (SP), 2d Field Artillery Battalion (Rkt/How), 9th Artillery



The above examples illustrate symbols used to denote unit boundaries.

LETTERS *(continued from page 5)*

grade officer in the ensuing complaint to the commander (if one is made at all). By virtue of rank, many of these staff officers forget their staff capacity and assume status as commanders by either issuing orders to personnel they deal with in the companies (thereby bypassing command channels) or they attempt to issue orders to the unit commanders themselves.

Although in actual practice the picture may not be so black, it is a distinct possibility in all units as well as an actuality in some. Thus it is conceivable that every company commander in the battle group has six bosses — the CO, Exec, S1, S2, S3 and S4. The most unfortunate result of this staff-command relationship is that the men entrusted with the welfare (as well as the operating efficiency) of the major components of the battle group cannot function even on an even basis with the chiefs of the staff sections whose only reason for existence is the service, administration, and coordination of the line companies. It is very possible that I constitute a minority of one in this regard. This opinion, however, is based upon my own experience as a ROCID rifle company commander and from observations during duty as a rifle company umpire during the five 11th Airborne Division Battle Group tests at Hohenfels, July and August 1957.

Another aspect of this command relationship is that of the rifle company commander (also the commanders of the headquarters and mortar battery) and the battle group commander. On one hand, the battle group staff officers serve as an effective buffer between the subordinate commanders and the battle group commander by virtue of their privileged position. The disparity in rank of the respective commanders, moreover, can't help but foster this condition. The rank spread from commander (colonel) to commander (captain) is just too great. And if this situation is to be rectified, two distinct possibilities present themselves: company commanders must be majors or the group commander must be a lieutenant colonel (with the staff down-graded to captain).

Climbing hills and long marches may not be a pleasant prospect for many majors who have graduated from that unpleasantness, but the British Army has done it for years and has found it quite practicable. In addition, the enlarged new rifle company, generally as excellent an organization that the Army has

ever devised, is worthy of a major's command. On the other hand, the lieutenant colonel of this man's Army is every bit as capable of commanding a battle group as a full colonel and perhaps has the advantage of youth to cope with the rigorous demands faced by these small Infantry units.

Perhaps the greatest objection to the command relationship in the battle group is the result caused by the great disparity in rank between company and group commander. Once the rifle company command is relinquished, the Infantry captain will have to wait from 10 to 20 years for his next command as a full colonel (or senior lieutenant colonel). This wait is far too long if the Army wants well qualified commanders throughout their service. Reducing the rank disparity from the top or bottom will alleviate this undesirable situation.

I believe that serious consideration should be given to the battle group staff-command relationships in the best interests of the operating efficiency of the pentomic organization. Although many will disagree with this statement, I feel that the rifle company commander has the hardest job in the United States Army. Assisting him to do that job as well as ensuring that he doesn't lose the command "touch" through lack of opportunity is the job of the high command.

Alvan C. Hadley, Jr.
Captain, Infantry
APO 696, New York

Your observations and thoughts on commander-staff relationships are timely and well conceived. Considerable attention has been given to an evaluation of these relationships by the Infantry School and along with other related subjects have been discussed in a communication from USAIS to Hq USCONARC.

Undoubtedly, serious consideration will be given to commander-staff relationship and command rank structure when the organization is reviewed after further testing.

Observations and thinking by Infantrymen in the field who are working with the new pentomic organization are not only welcomed but solicited by the Infantry School and Infantry.*—Editor.*

Keeping a "Hand In"

Sir:

At the time I forwarded my money order for $7.00 for a three-year renewal of my subscription to your fine magazine . . . your new subscription plan was mentioned, but not detailed. At any rate I am desirous of availing myself of the new plan, but you are a few pennies ahead of the game.

If this problem can be solved count me in as a charter member of your new plan. This is in keeping with my original wishes as I am also a charter subscriber of the original quarterly edition. In fact my graduation from OCS in July '47 was almost simultaneous with your new type of publication.

As I am not "working" in an Infantry job, *Infantry* magazine has proved a method of keeping my "hand in."

Seldon G. Becker
Capt, Infantry
Hq V Corps
APO 79, New York

We are pleased to change your subscription to the permanent plan. However, due to the mysteries of accounting we will remain "a few pennies ahead of the game," until the three-year subscription expires. At that time the "pennies" ($.25) will be deducted from your bill for the next year. Meanwhile, we'll make every endeavor to help you keep your "hand in."—Editor.

Evasion and Escape

Sir:

As Commandant of the Fifth Corps Escape and Evasion School, I have been following with great interest your ar-

ticles dealing with this subject in both the April 1957 and July 1957 issues of *Infantry*. It is indeed gratifying to see information on this most important subject being presented in a magazine which has such influence over a large number of service personnel, and is so widely circulated. Few people in the service realize the ever-increasing importance of this subject and its relation to the newly reorganized pentomic division and concept of the self-supporting battle group. In the fluid, rapidly changing action of the modern atomic battlefield, it is highly conceivable that individuals and units will become separated from their parent organizations. In this situation, it then becomes the responsibility of the individual to bring into play his evasion training and return successfully to friendly territory.

The other side of the coin, *escape,* must also be taken into consideration, regardless of how repugnant the idea of capture by the enemy is to every fighting man. Imprisonment by a Communist enemy brings to light many facets which must be made known to, and studied by our soldiers. A few of these are organization and administration within a prison compound, interrogation and indoctrination techniques which may be used against them, and outside aid through underground movements and "escape lines" which may well render them assistance not only in their initial prison break, but also in crossing enemy territory to friendly lines or neutral boundaries.

A prisoner's best defense against Communist indoctrination or interrogation is prior knowledge of the various techniques used by interrogators, and background information on the propaganda machine behind the indoctrination procedures. These and many other subjects must be taught our servicemen before they are again subjected to conflict, whether it be global war or police action.

Although I believe M/Sgt Quinn did an outstanding job with his article "Evasion and Escape" (April 1957), there are several points he mentioned with which I do not entirely concur.

One is his use of the word "brainwashing." The term itself was originated by author Edward Hunter in his book entitled "Brainwashing in Red China," and was made popular by newspapers which subsequently used the term to describe any act committed against an individual by the Communists. Actual "brainwashing" is a prolonged psychological process, designed to erase completely an individual's past beliefs and concepts and to substitute new ones. It requires among other things, that the individual be completely isolated from normal association and environment. In the process of "brainwashing," the efforts of many are directed against an individual over periods extending from five to ten years. In Korea, American prisoners of war were subjected to group indoctrination not "brainwashing." The exhaustive efforts of several government agencies failed to reveal even one conclusively documented case of the actual "brainwashing" of an American prisoner of war in Korea.

Another point in M/Sgt Quinn's article, with which he himself may or may not agree, is the statement by Dr. James Miller advocating some personal means of suicide for servicemen in the event of their capture. I have no printable comment for this suggestion other than violent disagreement.

Further, as for the statement, "So far as you are concerned there are no friendly natives," I cannot go along with M/Sgt Quinn. True, there is always risk involved while trying to obtain aid from civilians in hostile territory, but at times it is worthwhile for the evader to seek such assistance rather than starve or die of wounds or exposure. Our soldiers must be trained in the techniques of ob-

taining aid and shown the pitfalls of carelessness and lack of caution in seeking assistance on hostile ground, rather than be warned off completely from making the attempt.

My final argument with the article is the statement dealing with attempting to disguise oneself in native clothing, although I agree that to wear a uniform of the enemy is extremely hazardous. The question may arise, if you are captured in enemy uniform, whether or not you killed one of their men to obtain it. Native clothing, however, makes an excellent disguise providing the evadee goes all-out to act the part of one of the local inhabitants. Of course, in disguising yourself in this manner you must retain some means of identifying yourself as an American soldier such as dog-tags, ID card, or some distinctive part of your uniform.

In conclusion, let me again state that points which have been brought out in this letter are by no means derrogatory in nature nor sharp criticisms of the article as a whole, but are merely attempts at constructive comments. I believe that M/Sgt Quinn has done a fine job in presenting such a complete thesis on the techniques of escape, evasion and survival, and it is pleasing to see articles of this caliber being presented to the American footsoldier through the magazine of his profession, *Infantry*.

Raymond D. Barry
1st Lt, Infantry
V Corps
APO 26, New York

Your comments on this important subject are appreciated. They have been reviewed by both M/Sgt Quinn and the Staff Department of the Infantry School. Sgt Quinn confesses that he made no fine distinction between a strictly technical definition of "brainwashing" and the varying degrees of indoctrination to which our prisoners were subjected in Korea. He used the term as it has been commonly used to describe the acts committed by the Communists and which could be expected to more closely approach the techniques of actual brainwashing in the future. Neither the School nor Sgt Quinn subscribe to Dr. Miller's suggestion. This grim recommendation was mentioned in the article only to point up thinking on the importance of keeping out of enemy hands. Close reading of the Sergeant's article will reveal that he does not rule out seeking the aid of natives or the use of disguise. Furthermore, these suggestions certainly are valid for the majority of soldiers unless they have had considerable training and experience. Naturally, if the evader is faced with starvation or death from wounds or exposure, he will be forced to seek assistance.

A new field manual, FM 21-? (number not yet assigned), Evasion and Escape is being written and should be available later this year. The publication of this manual should further clarify the points on which you have commented.

—Editor.

Getting Around

Sir:

I wish to inform you of a change in my address. . . . I would like to tell you also how much I and my fellow officers enjoy this publication. When I returned to my home unit about a month ago I had three issues which I left at the armory for everyone to read. I haven't seen these issues since, as they are making the rounds. We are thinking very strongly of making the magazine compulsory reading material. This is one way for Guardsmen to keep informed.

Robert D. Grover
2nd Lt, IOWANG
Cedar Falls, Iowa

WHAT'S NEW FOR INFANTRYMEN

DEVELOPED

Hawk Radar Eye

The extreme accuracy of the Hawk surface-to-air missile[1] against low-flying attack is made possible by a new radar "eye."

A radically advanced radar guidance system, the "eye" permits the Hawk to seek out and destroy enemy aircraft even at treetop level. The guidance system ignores stationary objects, but directs the missile to a threatening, moving aerial target.

The radar system makes it possible for a missile to pick out the reflection of a moving target at low altitudes from a mass of signals rebounding from ground objects such as hills, buildings and trees.

Boasting a lethal warhead, the Hawk complements the Army's Nike missile system and is capable of long-range destruction of aircraft flying at the lowest altitudes.

The extreme mobility of the system permits it to be used tactically by fast-moving Army and Marine Corps assault forces. During tactical employment, the Hawk may be airlifted by helicopter.

Sites for Hawk installations are being selected near cities in the United States.

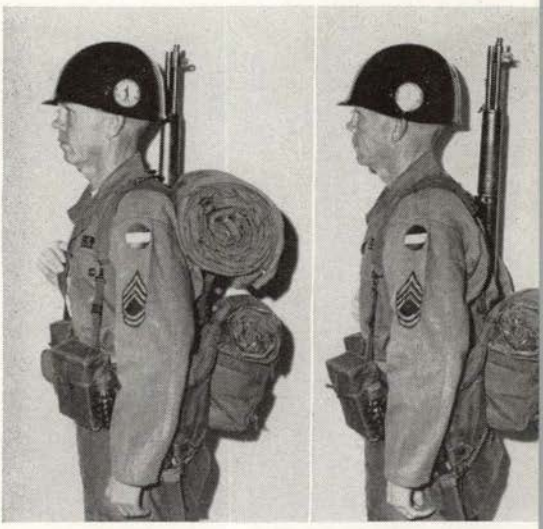
Individual Load Carrying System

A new Individual Load Carrying System has been adopted by the Department of the Army. The system, which consists of a general purpose belt and suspenders, was designed and tested at Fort Benning. It will be standard Army issue when existing stocks of the old belt and buckle device are exhausted.

Designed for soldiers of all the combat arms, the new equipment features comfort as well as practicality. It is lighter, more compact and neater than the present carrying system. It distributes the load better and minimizes interference with the soldier's movement. For comfort, padded H-type suspenders prevent the material from rubbing into the skin or slipping off the shoulders.

The general purpose belt eliminates the different type belts now required for

New individual load carrying system. The left photo shows complete equipment attached to the system. In the right photo the bedroll has been dropped.



[1]For additional information regarding the development and capability of the Hawk missile system, see "What's New For Infantrymen," page 105, October 1957 *Infantry*.

various weapons and features a simple clip system for attaching items of equipment.

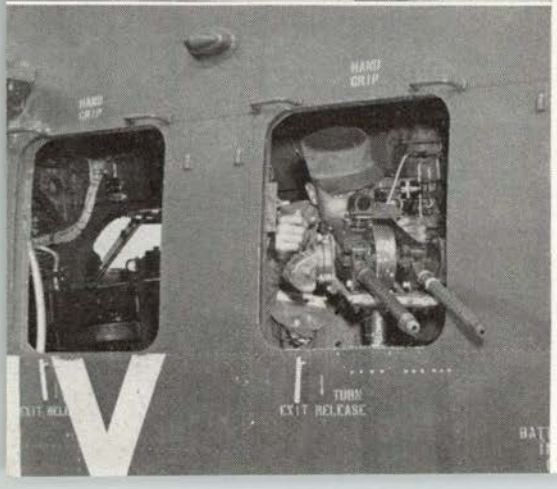
Clips and snap fasteners eliminate the cumbersome straps, buckles and hooks of the old system. They enable the soldier to put on or remove any part of the pack quickly and easily.

The new carrier system is so designed that the load is carried on the small of the back, the gravitational center of the body, instead of on the shoulders, the previously accepted method of carrying a pack.

The total weight the combat soldier will carry is 55 pounds. This load can be divided into three segments to meet his various needs: a 20-pound load consisting of survival items essential to the combat soldier, a 25-pound battle load of weapons and ammunition and a 10-pound full field load for protection and comfort such as a sleeping bag, extra clothing and personal gear. The bedroll can be released and dropped instantly by unsnapping a few fasteners.

The United States Army Infantry Board tested the carrier system for durability under all types of climatic conditions. The tests were conducted by board officers not only at Fort Benning, but also in Panama, Alaska, Fort Devens, Mass. and Yuma, Ariz.

Armed helicopter. The H-34 pictured is equipped with forty 2.75-inch rockets, two 5-inch rockets, nine machineguns and two 20mm cannons.



TESTED

Armed Helicopter

A helicopter believed to be the most heavily armed aircraft of its type in the free world is being tested at Fort Benning.

The armed helicopter, an H-34 Choctaw, mounts forty 2.75-inch rockets, two 5-inch rockets, nine machineguns and two 20mm cannons.

This is the first time a rotary-wing aircraft has been armed with 20mm cannon and 5-inch rockets. The rockets are mounted on the bottom and on the sides of the helicopter, aimed forward. The machineguns are located along the sides and on the front of the aircraft to repel attacks from all directions.

The armed helicopter is being tested for possible use in reconnaissance and patrol missions.[2]

Future War Techniques

Theories and techniques of future ground warfare, both atomic and nonatomic, were tested in a series of day and night practical exercises held in California during December.

[2]For additional information on armed helicopters see "What's New For Infantrymen," page 107, October 1957 *Infantry*.

Under the direction of the Army's Combat Development Experimentation Center, troops were formed into three rifle companies and operated under conditions of atomic and nonatomic warfare in which the threat of nuclear weapons was present.

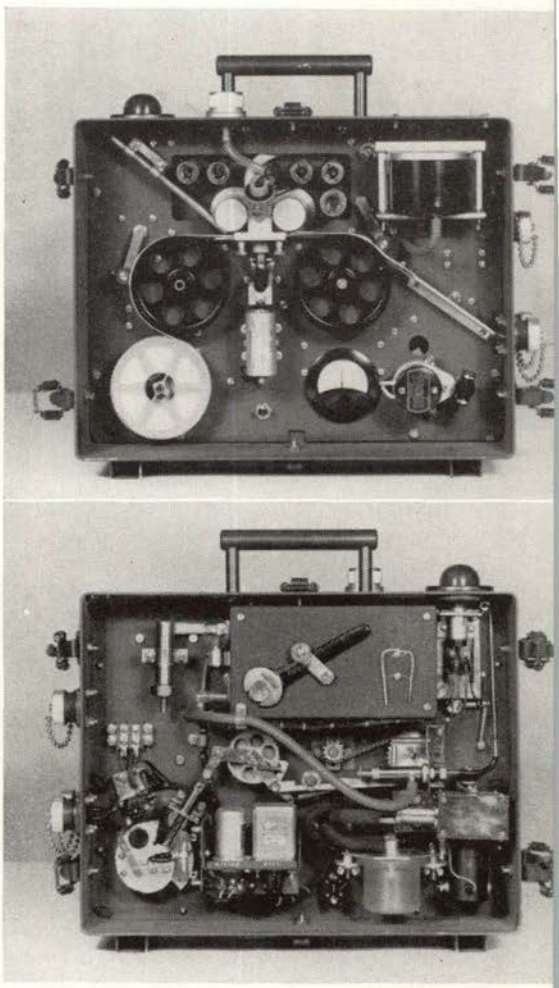
Among factors measured against future requirements of war were mobility, dispersion of men and equipment at platoon and squad levels, use of helicopter supply, and offensive and defensive actions.

Portable Gas Alarm

A portable nerve gas alarm recently developed by the Chemical Corps is currently being tested by the United States Army Infantry Board. Called the E21R1 Automatic Field Alarm, the small, lightweight instrument is designed to sound an alarm when the presence of a G-agent is detected in the air.

The alarm is based on the pink color that forms when a G-agent comes in contact with a chemically treated tape. An air pump contained in the alarm draws samples of outside air through a paper prefilter which removes particulate matter, permitting the air to move through to the tape. If a G-agent is present, it reacts with the chemical solution in the tape causing the wet section through which the air passes to turn pink while the adjacent sections remain white. Light from an illuminating lamp is reflected by the tape to photocells. Less light is reflected from the colored portion of the tape than from the white. This variation is detected by photocells which relay the imbalance through an electronic circuit thus triggering both an audible and a visual alarm.

The instrument operates on 24-volt direct current and with its carrying case weighs approximately 24 pounds. It has been operated successfully from the standard power outlet of a jeep and other electrical sources in the field.



Portable nerve gas alarm. The two sections pictured go together to form a carrying case.

CHANGED
Physical Fitness Evaluation

Extensive study and research at the United States Army Infantry School have resulted in changes in the methods of evaluating the physical fitness of troops. These changes are reflected in Department of the Army Training Circular 21-3, dated 18 April 1957. To implement the changes, the commander is encouraged to use several methods to determine the physical ability and fitness of his command.

Three general modes are recommended and outlined in the DA circular. The proposed methods are (1) inspection of troops during training and participation in Army training tests; (2) medical examination in case of temporary injuries, sickness and other causes which may prevent the increase or cause the decline of physical fitness, and (3) physical fitness and physical achievement testing of individuals to measure strength, endurance, coordination and skill.

To facilitate these methods, a new scoring table for the Physical Fitness Test has been adopted. In addition, mandatory semiannual administration of the Physical Fitness Test has been eliminated in favor of its prescribed use at the discretion of the commander. However, the test remains mandatory for the basic combat phase of training.

Battlefield Unit Replacement

Change 7 to FM 100-1, dated 2 July 1957, provides for the battlefield replacement of ineffective units by complete TOE units up to battalion and battle group size. TOE replacement units will normally remain under theater army control until attached or assigned to a corps to replace ineffective units.

An ineffective unit which can promptly regain its combat effectiveness through individual replacements will normally remain assigned to its parent organization. Should a unit require retraining to regain combat effectiveness, it should be replaced by a TOE replacement unit. If the relieved unit can be restored and recommitted within the theater, it will normally remain assigned to the parent corps. Otherwise the unit, less personnel and equipment, is returned to the theater army and thence to the Zone of Interior. According to the extent to which they can be utilized, residual personnel should be reassigned to other units within their parent corps.

To the maximum degree consistent with proper utilization, individual replacements from CONUS should be trained and initially employed as teams—squads or crews—and shipped in carrier companies.

Evasion and Escape

The United States Army Infantry School is now charged with the review and development of doctrine and the production of training literature and training aids for the United States Army Evasion and Escape Program.

This program includes the preparation of FM 21-( ), "Evasion and Escape," and FM 21-76, "Survival"; and the preparation of two training films: "Evasion and Escape in the Enemy Communication Zone" and "Unit and Individual Integrity in the Tactical Zone."

The consolidation of evasion and escape activities in the United States Army Infantry School facilitates coordination among trained personnel in the preparation and development of field manuals and training films. However, it is anticipated that several months will elapse prior to the completion of this training material.

Meanwhile, unit commanders, Infantry instructors and others who are interested in evasion and escape activities may find a wealth of vital information by reading articles which have been previously published in *Infantry* magazine. Among these are: "The Desert is No Obstacle," July 1953; "Survival and the Soldier," January 1956; "Evasion and Escape," April 1957; "Evasion and Escape—Part II," July 1957; and "Fit to be Untied," October 1957.

New Battle Group Radios

Two new radios, which have been added to the radio-visual section of the battle group communication platoon, greatly increase the control function between battle group and division.

These radios, the AN/GRC-19 and the AN/GRC-46, provide the battle group with continuous communication to division through the media of voice, continuous wave and radio-teletype emissions. The employment of these two new radios aids in filling the gap formed by extremely extended frontages peculiar to the atomic battlefield.

FIELD MANUALS

The following training literature is being written or rewritten. Publication cannot be expected until later this year:

FM 21-( ), Evasion and Escape (new)

FM 21-18, Foot Marches (revision)

FM 21-150, C1, Hand to Hand Combat (change)

FM 22-5, Drills and Ceremonies (revision)

FM 22-5A, Cadet Drill (new)

FM 22-100, Military Leadership (revision)

FM 23-5, U S Caliber .30, M1 (revision)

FM 23-25, C2, Bayonet (change)

FM 23-32, 3.5-inch Rocket Launcher (revision)

FM 23-82, 106mm Rifle, M40A1 (revision)

FM 23-90, 81mm Mortar, M1, M29 (revision)

FM 23-91, 81mm Mortar Mounted in Armored Personnel Carrier (revision)

FM 26-5, C1, Interior Guard (change)

FM 31-50, Combat in Fortified Areas and Towns (revision)

FM 57-21, Headquarters and Headquarters Company, Airborne Division Battle Group (new)

FM 57-40, Airborne Division Battle Group (new)

FM 60-10, Battle Group Landing Team (Amphibious) (U) (revision)

ROTCM 145-30, Individual Weapons and Marksmanship (revision)

ROTCM 145-60, Small Unit Tactics Including Communications (revision)

ROTCM 145-80, Logistics (revision)

ROTCM 145-100, Service Orientation (revision)

TM 57-220, C3, Technical Training of Parachutists (change)

The following manuals have been forwarded to USCONARC for approval:

FM 23-( ), Carbine Marksmanship Course Trainfire I (new)

FM 57-35, Army Tactical Transport Aviation Combat Operations (new)

ROTCM 145-41, Crew Served Weapons and Gunnery (revision)

ROTCM 145-90, Operations (revision)

The following manuals have been forwarded to Department of the Army for approval and publication:

FM 21-50, Ranger Training (new)

FM 21-76, Survival (new)

FM 23-70, Instructor's Guide, Rifle Marksmanship Course, Trainfire I (new)

TM 21-200, Physical Conditioning (new)

The following manuals have been published by Department of the Army and are available to instructors through normal supply channels:

FM 21-75, Combat Training of the Individual Soldier and Patrolling (revision)

ROTCM 145-10, Organization of the Army and ROTC (revision)

TM 57-220, C2, Technical Training of Parachutists (change)

TRAINING FILMS

The following training films have been approved for release to requesting units:

TF 6-2424, Artillery Orientation by Sun and Star—Part II—The Hour Angle Method, 12 minutes.

TF 8-2292, First Aid—Part I—Major Wounds and Fractures (in color), 33 minutes.

TF 9-2507, Transportation of Ammunition—Part I—By Motor Vehicle, 21 minutes.

TF 9-2508, Transportation of Ammunition—Part II—By Rail, 13 minutes.

TF 11-2525, Installation of Teletypewriter, AN/PGC-1, 20 minutes.

TF 11-2526, Radio Set, AN/GRC-9, 34 minutes.

TF 11-2527, Training Generator, AN/URA-T1, 25 minutes.

TF 17-2385, Safe Loading Procedures, 90mm Tank Gun, 5 minutes.

TF 17-2494, Medium Wrecker Truck M-62—Part I—Preparation for Lifting, 10 minutes.

TF 17-2496, Tank Recovery Vehicle, M-74—Part I—Preparing for Boom Operation, 7 minutes.

TF 17-2497, Tank Recovery Vehicle, M-74 — Part II — Rigging for Live Boom Operation, 7 minutes.

TF 17-2498, Tank Recovery Vehicle, M-74 — Part III — Power Plant Removal, 5 minutes.

TF 44-2173, Nike Ajax Battery, Emergency Energizing Checks and Adjustments—Part II—Missile Tracking Radar Unit, 26 minutes.

TF 55-2308, Helicopter Maintenance —Part I—Helicopter Power Plants, 13 minutes.

TF 55-2309, Helicopter Maintenance —Part II—Transmission and Free Wheeling Units, 16 minutes.

INSTRUCTIONAL MATERIAL

The following USAIS instructional material is suitable for resident as well as nonresident instruction and may be ordered from the Book Department, United States Army Infantry School, Fort Benning, Georgia, at the prices shown:

Ammunition and Marksmanship, 105-mm and 106mm Recoilless Rifle, 1736-USAR. 4 hours. Conference, demonstration and practical exercise. To familiarize the student with the 105mm and 106mm recoilless rifle, use of stadia sight and technique of bore sighting. 15¢.

Signal Orders, 3309-USAR, 1 hour. The SOI and SSI as an aid for commanders and staff officers. Emphasis is placed on message transmission security devices. 55¢.

Radio Field Nets, 3418-USAR, 3 hours. Practical exercise in the field in application of radiotelephone procedure using Infantry sets to include utilization and operation of remote control equipment and various antennas. 40¢.

Radiotelephone Procedure and Antijamming Measures, 3426-USAR, 1 hour. Conference covering the principles of radiotelephone procedure to include establishing radio communication, message forms and receiving and transmitting messages; conference and demonstration covering jamming procedures and techniques emphasizing antijamming measures and transmission security. 20¢.

Command Post, 3626-USAR, 1 hour. Conference and written practical exercise covering the organization, operation and displacement of a command post. 15¢.

Communication System of the Battle Group, 3635-USAR, 1 hour. Conference and practical exercise covering the communication systems in the battle group with emphasis on radio nets. 25¢.

Organization for Maintenance, 4932-USAR, 1 hour. Conference on the Army maintenance system as applied to vehicles of the Infantry division battle group; organization of the battle group vehicle maintenance personnel. 55¢.

Theory of Loading: Technique Computation, 5332-USAR, 2 hours. Techniques of loading and computation of center of gravity of equipment and aircraft. 15¢.

Theory of Lashing, 5351-USAR, 1 hour. Conference, demonstration and practical exercise covering the types of lashings and techniques applicable to the use of these lashings. 20¢.

Preparation and Conduct of a Field Exercise, Rifle Platoon in the Attack, 7251-USAR, 7 hours. The preparation of field exercises for small units; planning and preparing a field exercise, rifle platoon in the attack. 35¢.

Introduction to Military Instruction and Training, 7161-USAR, 1 hour. Conference to cover the fundamentals of learning to include their application to military instruction; introduction to the stages of instruction. 25¢.

Military Hygiene and Sanitation, 7727-USAR, 2 hours. Conference in which the principles of military hygiene and sanitation are discussed in detail, and the necessity to enforce these principles to prevent transmission of disease in a unit is presented. The measures necessary to control communicable disease are discussed. Command responsibility for the training of the unit personnel in military sanitation and for the provision of adequate sanitary facilities under field conditions is established. 15¢.

Annual Infantry Index

This index includes all articles that have appeared in Infantry during the past year. The articles are listed chronologically under U.S. Army Infantry School department headings and other appropriate subheadings according to areas of interest.

AIRBORNE-AIR MOBILITY DEPARTMENT

GROUND MOBILITY DEPARTMENT

PREVENTIVE MAINTENANCE INDICATORS — JUL 1957
By Ground Mobility Department, USAIS
Explains the use of preventive maintenance indicators to assist the unit commander in making vehicle inspections and in determining the condition of his vehicles.

RIDE TO WORK — OCT 1957
By Capt Paul J. Mueller, Jr.
Discusses the tactical employment of Infantry carriers (armored personnel carriers) in attack, defense and retrograde operations.

COMMUNICATIONS DEPARTMENT

COMMUNICATIONS-PENTOMIC INFANTRY DIVISION — OCT 1957
By Maj Oliver M. Smith & Capt James B. Hobson
Discusses the communications capabilities of the new pentomic Infantry division.

STAFF DEPARTMENT

Evasion and Escape

EVASION AND ESCAPE — APR 1957
By M/Sgt James F. Quinn
Discusses the treatment a soldier may expect if taken prisoner of war and explains some of the techniques which may be used by the individual soldier to evade and escape.

EVASION AND ESCAPE—PART II — JUL 1957
By Maj Marshall Whiting
Discusses evasion and escape problems facing the commander and the training of small units to evade and escape.

SURVIVAL — JUL 1957
By Mr John Gause & Capt Howard Kayner
Discusses techniques which may be used by individuals or small units to survive under adverse conditions.

FIT TO BE UNTIED — OCT 1957
By Maj Frank F. Rathbun
Discusses survival and escape techniques for the individual who is captured and held in a prisoner of war compound.

Leadership

SO YOU WANT A COMMAND — APR 1957
By Lt Gen Bruce C. Clarke
Lists a number of questions which any officer who seeks a command assignment should ask himself to determine his suitability and the sincerity of his desire for a command.

INFANTRYMAN! DO YOU KNOW YOUR JOB? — APR 1957
By Maj Gen Armistead D. Mead
Discusses the need for officers and noncommissioned officers to keep abreast of the many changes now occurring in the Infantry and the Army.

Medical

MEDICAL SUPPORT—
PENTOMIC INFANTRY DIVISION — OCT 1957
By Capt Roy L. Bates
Discusses medical support capabilities of the new pentomic Infantry division.

Organization

WHY FIVE? — APR 1957
By Staff Department, USAIS
Discusses the reasons for changes in Infantry division organization from the triangular concept to the new pentomic concept.

WHY FIVE? PART II — JUL 1957
A "package" of related articles which discusses various aspects of the organization, functions and capabilities of the pentomic Infantry division. The articles include:
- Tactics *by Lt Col James W. Hungate*
- Battle Group - Offense *by Lt Col James W. Hungate*
- Rifle Company - Offense *by Capt Thomas H. Jones*
- Firepower *by Weapons Dept., USAIS*
- Ground Mobility *by Capts Vernie G. Tosh & James B. Hobson*
- Air Mobility *by Maj. Lawrence L. Mowery*

WHY FIVE? PART III — OCT 1957
A continuation of the "package" of related articles on the pentomic Infantry division. The articles in this package include:
- Tactics-Defense *by Lt Col James W. Hungate*
- Battle Group-Defense *by Lt Col James W. Hungate*
- Rifle Company-Defense *by Capt Thomas H. Jones*
- Communications *by Maj. Oliver M. Smith & Capt James B. Hobson*
- Medical Support *by Capt Roy L. Bates*

Special Operations

GUERILLA WARFARE — APR 1957
By Capt Richard L. Gruenther
Discusses some of the guerilla warfare techniques employed in World War II and explains how the employment of partisan or guerilla forces may become more important in modern warfare.

Training

GROUND NAVIGATION — JUL 1957
By Capts Glen D. Belnap & Hampton Rowland, Jr.
Discusses a method of map reading instruction which provides a better transition from academic instruction to successful ground navigation in the field.

WE STILL MAY WALK — OCT 1957
By Capt Albert A. Rosner
Discusses the possibility that Infantrymen on the modern battlefield may at times be required to march faster and over greater distances than in the past in spite of increased ground and air mobility.

TACTICAL DEPARTMENT

Offense

BATTLE GROUP—TACTICS FOR OFFENSE
JUL 1957
By Lt Col James W. Hungate

Outlines the tactical concepts and doctrine for the battle group in mounted and dismounted offensive operations as a part of the pentomic Infantry division.

RIFLE COMPANY—TACTICS FOR OFFENSE
JUL 1957
By Capt Thomas H. Jones

Discusses tactical concepts and doctrine for the pentomic rifle company in mounted and dismounted offensive operations as a part of the battle group in the Infantry division.

PENTOMIC COMPANY IN THE ATTACK
OCT 1957
By Capt Thomas H. Jones

Discusses the offensive operations of the pentomic rifle company including an example of a mechanized pentomic rifle company in an attack situation.

Defense

ATOMIC DEFENSE RECONSIDERED JAN 1957
By Lt Col Seymour L. Goldberg

Outlines a concept of defensive tactics for the atomic battlefield which employs linear defensive positions in great depth with dispersion at all echelons.

TACTICS—DEFENSE OCT 1957
By Lt Col James W. Hungate

Discusses general tactical concepts and doctrine for elements of the pentomic Infantry division on the modern battlefield.

BATTLE GROUP—DEFENSE OCT 1957
By Lt Col James W. Hungate

Discusses tactical concepts and doctrine for the battle group in position and mobile defense as a part of the Infantry division.

RIFLE COMPANY—DEFENSE OCT 1957
By Capt Thomas H. Jones

Discusses tactical concepts and doctrine for the rifle company in position and mobile defense as part of the battle group of the pentomic Infantry division.

General Tactics

BATTLE DRILL JAN 1957
By Tactical Department, USAIS

Discusses formations, techniques and drills needed to train individual soldiers and small units in the teamwork needed to move over the last few yards of the assault to seize the objective.

SMALL UNIT TASK FORCES—COMPANY SIZE
JAN 1957
By Capt August J. Dielens, Jr.

Discusses the organization and employment of company-size task forces for specific combat missions on the modern battlefield including an example of a typical operation.

SMALL UNIT TASK FORCES—BATTALION SIZE
APR 1957
By Maj Charles D. Folsom

Discusses organization and employment of battalion-size task forces including an example of a typical operation.

DECISION JUL 1957
By Capt Robert T. Fallon

Tells a story which indicates the problems faced by a commander in making decisions on the atomic battlefield and highlights the need for skill and immediate reaction.

GET OUT OF TOWN OCT 1957
By Lt. David J. Daze

Discusses the danger to combat troops of towns which can be a deathtrap or a Godsend depending upon how they are used.

WEAPONS DEPARTMENT

MORE ABOUT TRAINFIRE I — APR 1957
By Weapons Department, USAIS
Discusses the Trainfire I method of basic marksmanship training.

MORTARS AND MIRRORS — APR 1957
By M/Sgt Charles L. Bryant
Discusses a new training device (The Bryant Mortar Training Device) which makes indoor mortar training effective and interesting.

FIREPOWER—PENTOMIC INFANTRY DIVISION — JUL 1957
By Weapons Department, USAIS
Discusses the firepower capabilities of the new pentomic Infantry division including the new rifle, the M-60 machinegun and organic atomic weapons.

THE M-60 MACHINEGUN — OCT 1957
By Maj Lincoln Landis
Provides a detailed look at the new general-purpose M-60 machinegun including its assembly, disassembly, functioning, sights, mounts and crew training.

MISCELLANEOUS

THE SOVIETS CLOSE THE GAP — JAN 1957
By Col T. C. Mataxis
Discusses the tremendous advances made by the Soviets in modernizing their weapons, vehicles and aircraft since the end of World War II.

INFANTRY WITHOUT CROSSED RIFLES — JAN 1957
By Lt Col Albert H. Smith, Jr.
Discusses the Infantrymen of the Marine Corps and the Marine Corps (Infantry) School at Quantico, Virginia.

FEET ON THE GROUND — JAN 1957
By Gen Willard G. Wyman
Discusses the continuing need for fighting men (Infantrymen) on the ground as the decisive instrument of military force in modern warfare.

TAX TIPS — JAN 1957
Outlines some of the special income tax deductions for military personnel and explains how military pay and allowances should be treated for income tax purposes.

CRACKING THE THOUGHT BARRIER — APR 1957
By Lt Col Percy South
Discusses procedures and a program which can be used by unit commanders to stimulate and increase the productive thinking capacity of their troops.

T.A.M. — APR 1957
Provides an exchange of ideas between Lt David E. Reeves, USAR, and Maj Gen Herbert B. Powell, Commandant, USAIS, concerning training, ability and money problems faced by the Infantry.

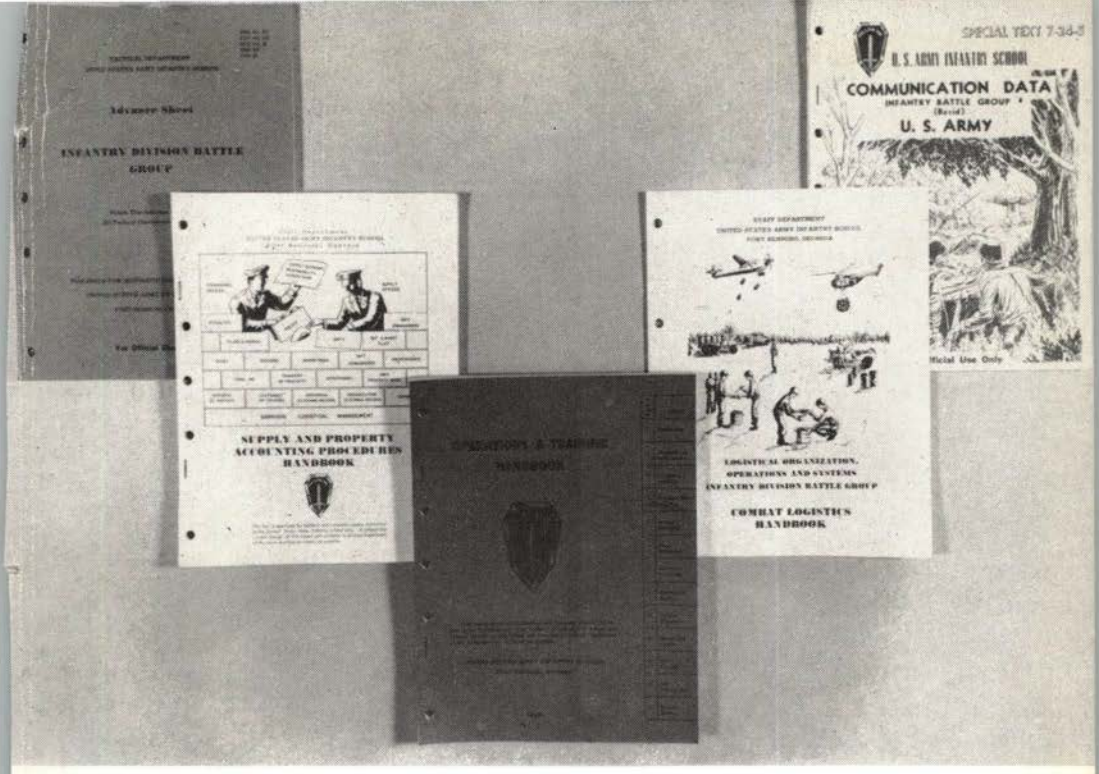
TIPS — JUL 1957
By Lt Bernard F. Agnelli
Offers advice and helpful tips for newly commissioned ROTC officers who are about to enter active military service.

THE CREATING OF SUPERIOR UNITS — OCT 1957
By Lt Gen Bruce C. Clarke
Discusses the technique of creating Army units which are considered Superior.

Checklists

CHECKLISTS FOR INFANTRY LEADERS:

Weapons Units in Attack	Jan 1957
Weapons Units in Defense	Apr 1957
Troop Leading Steps	Jul 1957
Patrol Leader	Jul 1957
Adjustment of Artillery Fire	Jul 1957



Pentomic Information

Training literature, handbooks and other publications on various aspects of the new pentomic Infantry division are now coming off press and are available from the Book Department. Here are a few of the most recent publications:

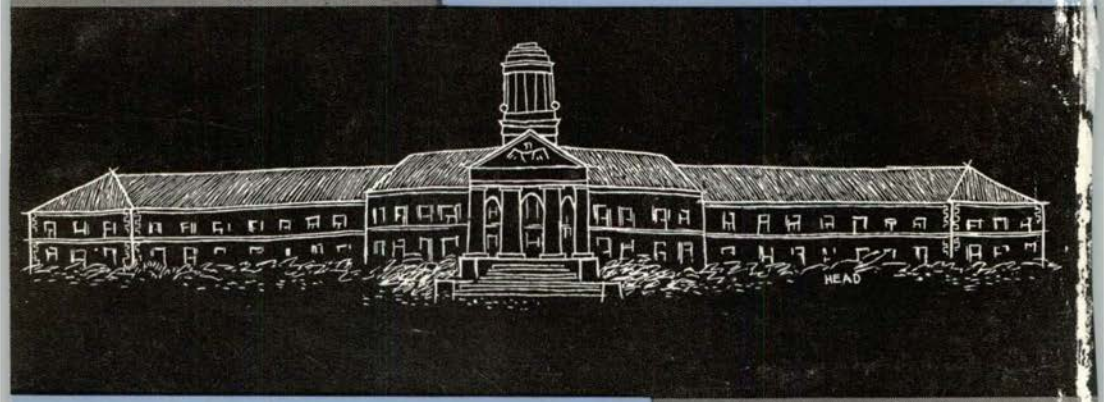
Advance Sheet, Infantry Division Battle Group (121 pages)	$ .50
Supply and Property Accounting Procedures, Handbook (130 pages)	.70
Operations and Training Handbook—ROCID (224 pages)	1.25
Combat Logistics Handbook (42 pages)	.15
Communications Data, Infantry Battle Group—ROCID (88 pages)	.35

These and numerous other special texts, training texts, pamphlets, problems, manuals and charts may be ordered by Infantrymen and those who work with Infantry. A catalog of available items will be sent upon request. If order is less than $5.00, add 25¢ to cover postage. For orders of more than $5.00, add five percent of the total amount of the order.

***Write:* The Book Department, U.S. Army Infantry School, Ft. Benning, Ga.**

In every issue:

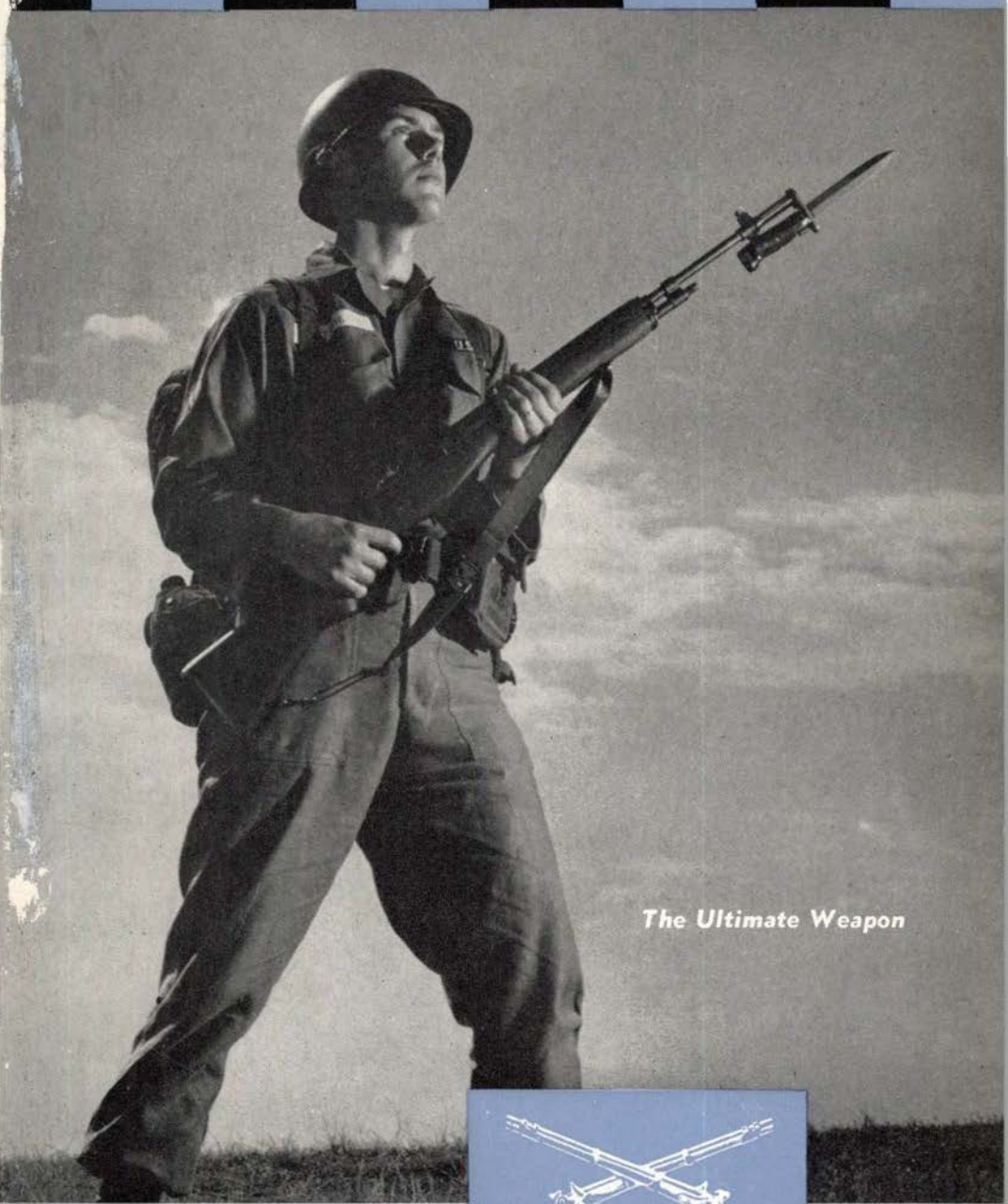
- *tactics*
- *doctrine*
- *techniques*



In this issue:

- **The Pentomic Infantry Division**
  Logistical Support. Staff Procedures
  The Brigade Headquarters
- **A New Look at Soviet Tactics**
- **Pentomic Company in the Defense**
- **Pentomic Terminology**
- **War of Words**
- **Noncommissioned Officer**
- **Stabilized Free Fall**
- **New Basic Weapon for the Infantry**

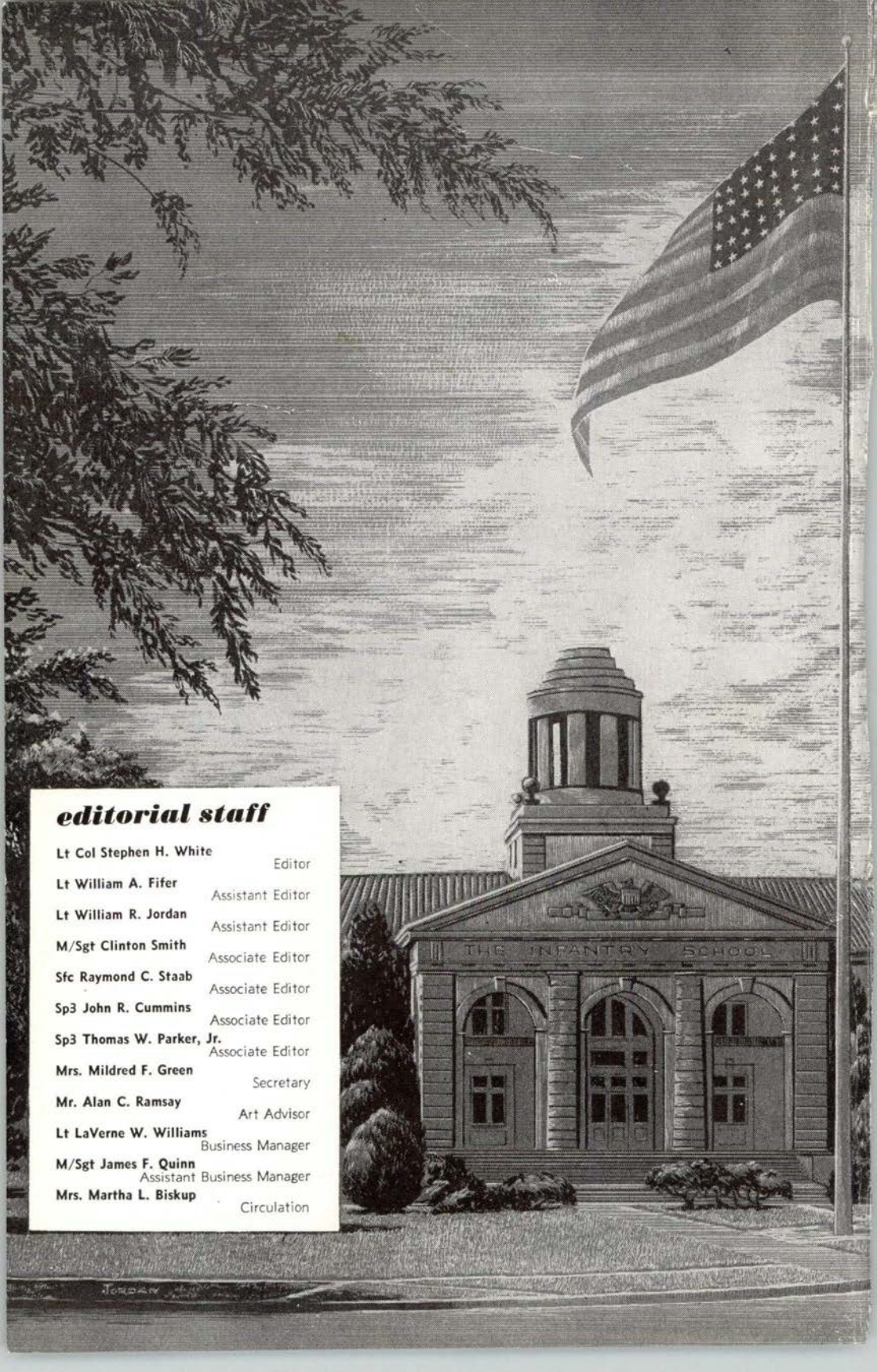
Infantry



The Ultimate Weapon

The Magazine for Infantrymen

April-June 195



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Infantry

OFFICIAL QUARTERLY PUBLICATION OF
THE U. S. ARMY INFANTRY SCHOOL

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articles

features

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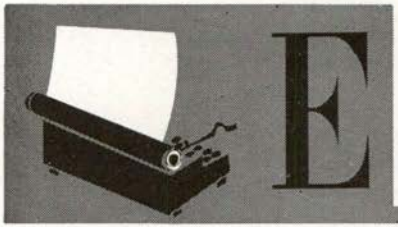


EDITOR'S PAGE

DEAR READER:

How does one put into words the emotions which sear the heart and spirit of the Infantryman as he watches further reductions in our ground forces while the Soviets maintain and modernize their huge land army? How does the Infantryman cope with the initial disbelief, then the fear, anger, and finally, the frustration that sweep successively through him with each reduction in the number of Infantry divisions? How is he expected to react when dedication, reason, honest expression and sacrifice of career do not alter this downward course? Is there any way in which he can, with propriety, reach the consciousness of the American people whom he is sworn to defend, to tell them of the danger he sees? What can he legitimately do to influence decisions which will provide the balanced forces needed for general or limited atomic or nonatomic warfare?

The fate of the nation and everything we stand for depend upon and demand adequate ground forces. This is no time for Infantrymen to despair or to think of leaving the service. Rather, it is a time for renewed dedication—for increased efforts to demonstrate, not so much by words as by example and results, that the man on the ground adjusts to any means of warfare and succeeds where others may fail. It is a time to demonstrate the inherent versatility, flexibility and mobility of the foot soldier in moving over land or sea and through or from the air to seize and hold land which is the decisive factor in any kind of war.

THE EDITOR

The Honest John free-flight missile, one of the pentomic Infantry division's tactical atomic weapons, is prepared for firing during a demonstration at the United States Army Infantry School.

LETTERS TO THE EDITOR

Strong Link

Sir:

Infantry is the most completely readable magazine I have encountered, not only in its field, but in the entire field of the magazine press. The articles not only are competently written, but are intelligently organized. Indeed it is a strong link between the rapid development of doctrine, tactics, and weapons and the Infantryman "in the boondocks," who has difficulty in keeping pace with these rapid developments.

Please enter my subscription . . . on the permanent plan. If possible, I desire the subscription to begin with the issue of October 1957. I have the previous 1957 issues and wish to preserve the continuity of my file.

Linn F. Brown
Capt, Infantry, USAR
Cody, Wyoming

Thanks for the subscription and your stimulating remarks. The editorial staff strives constantly to improve the usefulness and quality of your *magazine. Comments which indicate we are on the right track are encouraging; suggestions and constructive criticisms from Infantrymen and other readers which will help us make it even better are especially appreciated.—Editor.*

Information Wanted

Sir:

I have a great interest in mine warfare. I have studied your splendid magazine for a long time and it has solved many problems for me. I would be very grateful if you would send me a complete list of the articles which you have published on this subject. Also, please tell me how I can obtain copies of the articles. . . . Attached is a list of questions in which I am specially interested.

Kjell Widberg
Lieutenant
K. H. S. Stockholm 90
Sweden

Information that Infantry *is helpful to Infantrymen of other free nations is gratifying. A list of articles on mine warfare that have appeared in* Infantry *magazine and its predecessor,* The Infantry School Quarterly, *has been mailed to you. Available back issues of* Infantry *and* The Infantry School Quarterly *may be purchased for $ .50 per copy from the Book Department, U. S. Army Infantry School, Ft. Benning, Ga.—Editor.*

Wanted Monthly

Sir:

This particular letter is long overdue. I have subscribed to your marvelous magazine for nearly three years, and never so much as indicated how much I really enjoy it. So I want to tell you now . . . I have no criticism, except that I would like to see this publication become a monthly rather than a quarterly. However, I realize that this point has arisen many times before and the reasons for your not doing it must be both sound and plentiful. . . . I'd like to be added to

your permanent list. . . .

James P. Greenwalt
1st Lt, Infantry
Baltimore, Md.

Your name has been added to our expanding list of permanent subscribers. Since Infantry *must be financed entirely by the sale of subscriptions (we have no appropriation and no advertising) it simply has not been possible to undertake more frequent publication. However, a material increase in subscribers would make more issues possible. Current readers who find* Infantry *helpful can assist us in accomplishing this by encouraging their friends in the active Army, the National Guard and the Reserve to subscribe.—Editor*

Monkey Business

Sir:

The article titled, "Survival," July 1957 *Infantry,* held great interest for me because someday, even though a woman and a civilian, I might have to land and live in the mountains, jungle, Arctic or in whatever remote area a transport plane happened to develop engine trouble.

It was especially reassuring to learn that "locating food generally is not as big a problem as it may seem. . . . You don't have to be a botanist to identify many of the plant foods. You will take another step forward when you know how to determine the edibility of plants you cannot identify . . . 'do-like-the-monkeys-do'. . . . Simply eat what the birds or monkeys are eating. It may not be the most appetizing thing you ever ate but it won't hurt you."

I also took to heart another message pointed out by Mr. Gause and Capt. Kayner—"consider the many kinds of special information and skills which you can pick up through daily living, reading and study. Then make a conscientious effort to add to your knowledge."

Imagine my discomfort when looking through the New York *Daily News,* August 12, 1957, I came across Dr. Theodore Van Dellen's column entitled "Things You Must Not Touch, Chew, Swallow!" According to this column: "There are said to be 525 species of poisonous plants in the United States (alone!). Many are no farther away than our gardens. Poisoning occurs when they are mistaken for edible plants. Just because we see a bird or an animal eat the seed or fruit is no criterion that the substance is safe for human consumption."

In addition to mentioning poisonous plants such as calla lily, daffodil, narcissus, castor bean, columbine and four o'clock, Dr. Van Dellen describes their effects: "Most toxic plants irritate the skin of the mucous membrane of the mouth, stomach, or intestine . . . (some) poisonous plants may be handled with impunity but are so irritating to the mucous lining of the mouth they may never get to the stomach. Burning and swelling of the tongue and inner cheeks makes swallowing impossible. . . . Other plants get past the mouth but irritate the stomach producing vomiting. . . . A third group is able to pass the gastric barrier to reach the intestine (where it acts as a powerful cathartic). . . . Some plants contain poisons that affect the heart and nervous system."

All of which makes me feel like the *New Yorker's* feature "Which Paper Do You Read?" Perhaps the Surgeon General could advise us as to which survival techniques are "strictly for the birds." Or is all this just "monkey business"?

Miss Anne M. Stommel
USA Signal Publications Agency
Fort Monmouth, New Jersey

Your letter was referred to the authors of the article, "Survival." Their comments follow: In answer to Miss Stommel's question, the following statement

Continued on Page 102


THE

INFANTRYMAN
IN THE ATOMIC AGE

The Infantry combat soldier is the ultimate weapon in any kind of warfare. His experience, courage, intuition and ability to reason cannot be replaced by any other weapon.

At no time in the history of the American Army has the role of the Infantryman been more important than it is today in the atomic age. Never before has our foot soldier been supported by a wider variety of weapons or by weapons with more awesome capabilities. Never has he had greater mobility. He can strike the enemy anywhere in the world by rapid movement over land or water, through the air or by jumping from the sky. Never has he possessed better communications to control his operations.

Technological developments in recent years have advanced at such a rapid pace and have been so dramatic that they have all but overshadowed our historic purpose of seizing and holding ground so that the just will of our nation can be imposed upon the aggressor. No weapon has yet been produced or conceived which can do more than pave the way for the foot soldier without whose presence land could not be held.

In the atomic age the Infantryman is still the symbol of our nation's strength. He has not been replaced by anything that razes, radiates, flies, floats, buzzes, booms or bangs. Wherever he stands around the globe, with his rifle in hand and his feet planted firmly on the ground, he is visible evidence to any leader of communist conspiracy that we mean exactly what we say—that we intend to resist aggression in any form. He is the flesh and bone representative—on the spot—of our military might which includes the nuclear weapons, missiles, aircraft, tanks and all other tools in our mighty arsenal which back him up. He is an ever-present and effective deterrent to war. We know that the communist

By Lt Gen Herbert B. Powell

Carriers provide the protected ground mobility needed by Infantrymen in the atomic age.

bloc has never committed aggression in a country where the American combat Infantryman was physically present. But we know, also, that within months after our foot soldiers were pulled out of Korea the enemy crossed the 38th parallel. Powerful, but distant, weapons—which may or may not be used—do not appear to be as effective in deterring all forms of communist aggression as the presence of armed men on the ground.

Streams are no obstacle; the Infantryman gets into action fast.

The communist realizes that if he attacks the American combat soldier, reaction will be swift and positive. There can be no doubt that he has committed aggression and no doubt, in his own mind, as to what America will do about it. He knows that he cannot explain later that he misunderstood our position—that he didn't believe we would go to war or that he believed we would limit the means at our disposal. The communist may risk aggression in areas unprotected by the American foot soldier—in areas guarded by the threat or possibility of our intervention. He may gamble on our reaction to his aggression or on the speed with which he thinks we can act. But he will think long and hard, and be sure he is ready for all-out war, before he deliberately attacks the American soldier who stands physically and immediately in his path. In this re-

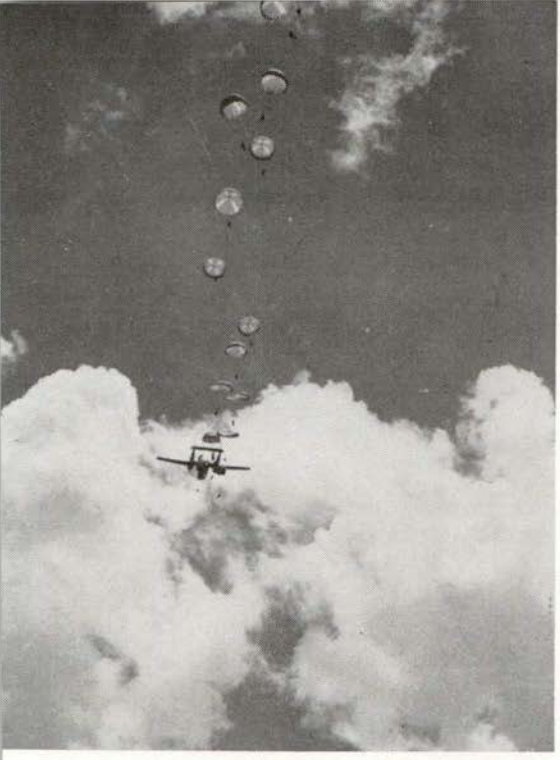
spect, the Infantryman, with his feet on the ground, is one of our greatest restraining forces in the atomic age.

Our ability to hold our present allies and to gain new ones in the future could depend, to a major degree, on our foot soldier who stands beside their own defenders. His presence is tangible assurance of American support with all of its implications. This undoubtedly does more to encourage the smaller nations to remain free than promises or remote, invisible tools of war. It gives them the courage and will to resist communist pressures and helps to keep the Soviets from eating up the free world bite by bite, thus acquiring additional resources for a final struggle. This physical presence of the Infantryman, plus the knowledge that airborne Infantry troops would be flown to any area of aggression, could delay or even prevent that struggle.

Man is a land animal. He spends most of his life on the ground. His home, his job and his resources are on the land surfaces of the earth. Control of land areas and the people who inhabit these areas is essential to victory in war. Control of the

When terrain, climate or weather stop air or ground vehicles, the Infantryman can always move—on foot.

The modern Infantryman can enter combat from fixed-wing aircraft or helicopters . . .



. . . or transport aircraft

air and the sea is important—to the extent that the air and the sea control the adjacent land and the people on that land. Although our air forces wage their battles in and from the air and our naval forces fight on or from the sea, these forces depend upon land bases and land resources for the means with which to fight. The loss or destruction of these land bases and resources can seriously limit or eliminate their ability to fight. Ground forces, including airborne Infantrymen, are the only forces really capable of seizing and holding the land essential to provide bases and the resources necessary for waging war and, in fact, for man's survival.

Of the ground forces, the Infantry always has been and still is the arm of ultimate decision. It is the Infantryman who must ultimately close with and destroy the enemy. And it is the Infantryman who must hold the ground and control the people who live on it. Weapons alone, regardless of their power, cannot do this job. Weapons alone did not destroy the German underground submarine pens along the French coast in World War II. They failed to locate and destroy the Nazi rocket sites in Northern France and Belgium. Not until these vital areas were overrun by the foot soldier were they put out of operation. Nor did our tremendous air effort against the Ruhr destroy German production capabilities. In spite of all we could do, Nazi armament output in 1944 was double that of 1942.

In atomic war the enemy may be expected to put more of his installations and resources underground to avoid destruction from missiles and nuclear blasts. The Infantryman, more than ever before, will be required—to dig him out of the ground and destroy him. General Willard G. Wyman pointed up this requirement recently when he said, "Until a B-52 can occupy a city or a submarine can take a hill, we will need men with their feet on the ground. . . . The Infantryman will continue to be the conclusive element in war."

To perform this role in the atomic age, the foot soldier must have increased capabilities. Changes in weapons, tactics and techniques become necessary. But change is not new to the Infantryman. Throughout history it has been necessary for him to adjust to each new development in the means for waging war. The invention of gunpowder, the machinegun, the tank and the airplane in turn brought claims that man could not face such weapons and survive to impose his will on the battlefield. But history itself proves that the Infantryman has always countered each innovation with a better weapon, with better organization and with revised tactics and techniques. He has maintained his decisive position in

war by pitting his brain and courage against each new weapon and evolving methods of defeating it.

Today, the Infantryman once again is faced with new and awesome weapons. He is in the process of adjusting to these conditions. Despite claims to the contrary —which he has heard repeatedly through the years and just as repeatedly disproved —his decisiveness in combat will continue. The Infantryman will be on the battlefield at the moment of decision, in nonatomic, limited atomic or all-out atomic war.

To appreciate the logic of this assertion it is necessary to look at what the Infantryman is doing today. With the skill and experience acquired as the dominant force in defending this country in every war he has had to fight since 1775, the Infantryman is now adjusting to requirements imposed by nuclear weapons. He is accomplishing this task quickly, calmly and thoroughly. You don't read too much about him in the press because he doesn't break individual records or pull off the dramatic "stunt." He makes no brash or sweeping claims that he can "go it alone" or that he is the sole answer to nuclear or any other kind of war. Probably more than any other soldier, the Infantryman understands the value of teamwork and the need for the combined efforts of all arms and all services for his success and, more important, for the successful defense of the nation. New developments and increased capabilities by the other branches of the Army and the other members of our defense forces are not only welcomed but are wholeheartedly encouraged by the Infantryman. When he faces the enemy on the battlefield he wants all the strategic and local assistance he can get. He gives full credit to his brothers-in-arms, but he does not "shout" for personal attention. For he is quietly confident that when the chips are really down, in any kind of war, he will have the decisive role and he will be ready.

No facet of combat in atomic or nonatomic war is being overlooked. The Infantryman is revamping his organization, his weapons and his tactics. He is developing the firepower, the mobility, the communications and the special techniques he must have to maintain his decisive role in combat.

Major changes have been made in Infantry organization. The triangular division of World War II and Korea did not meet the mobility and dispersion require-

He jumps into combat from the sky.

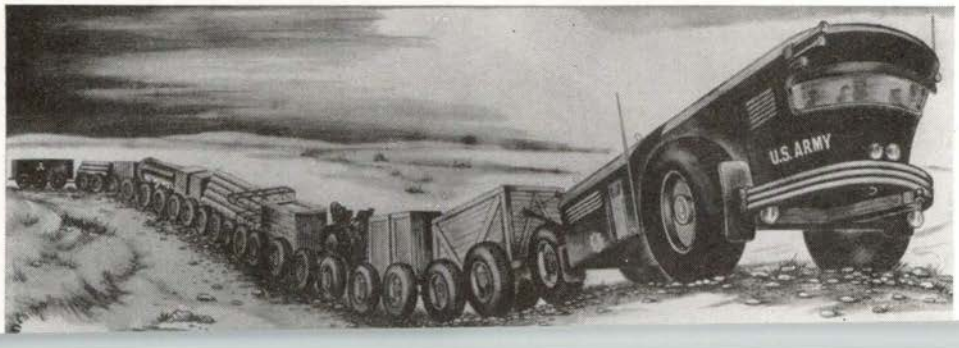
LT GEN HERBERT B. POWELL

ments imposed by nuclear weapons. It has been replaced with new pentomic Infantry and Airborne organizations which have been created specifically for the atomic age. With these new organizations, the Infantryman will be able to operate effectively in either atomic or nonatomic warfare. They give him increased air and ground mobility, greater firepower (including tactical atomic weapons) and better communications. They are streamlined organizations, stripped of nonessentials and reduced in size. Yet they have greater foxhole strength (more than 450 riflemen in squads) than their predecessors.

New weapons are being developed and procured. Recently, the Infantryman acquired a new, lighter rifle which will replace four of the small-arms weapons he used in World War II and Korea. He has approved and will soon get a new "all-purpose" machinegun which will replace the light and heavy guns he employed in three wars. He is getting improved recoilless weapons and mortars. These, however, are but minor innovations already accomplished. In the future the Infantryman will have new and unheard-of capabilities. He will have in his hands the means to penetrate the heaviest armor that can be thrown against him, and he will carry in the front lines atomic weapons to blast his way forward or to dig the enemy out of his atomic shelters. He is working closely with all branches of the Army in the development of missiles, tactical nuclear weapons and other tools of war which will support his advance on the atomic battlefield.

Equally significant are the changes that have been made and which will continue to be made in tactics and techniques. The Infantryman is learning to fight and survive in combat where both sides will use strategic and tactical atomic weapons. He is learning to concentrate rapidly from dispersed positions to seize objectives and then to disperse again, just as rapidly, to avoid destruction from enemy atomic blasts. To do this he requires great battlefield mobility. He is getting it now through the use of lightly armored Infantry carriers, helicopters and other Army aircraft. In the future he can be expected to move over the atomic battlefield in flying jeeps or individual flying platforms. He requires better communications to control his operations under ad-

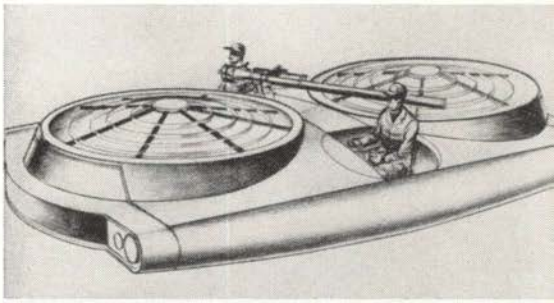
An atomic-powered land train is now under study.

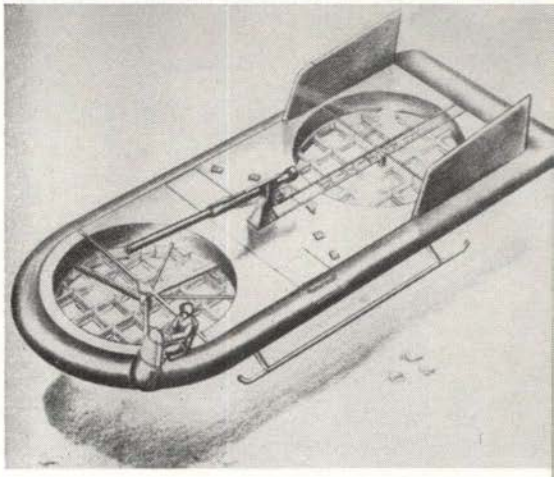


verse conditions and over great distances. Better radios, television and other signal means are now being put into his hands. Just around the corner are helmet radios and other devices which will virtually wire every Infantryman for sound.

As new technological developments occur and as new concepts are generated, the Infantryman will continue to adjust to the realities of modern warfare—atomic or nonatomic. He is ever conscious of his responsibilities and of the role he must play in any future conflict. He is not deterred by those who predict that his role will be lessened by new weapons. The Infantryman is a realist who has been matured by the many struggles in which he has met the enemy face to face, closed with him and destroyed him. He is no dreamer who visualizes a quick and easy defense of this country in a "push-button" war with weapons alone. He prepares for every eventuality. Realizing that we face an enemy with comparable nuclear capabilities and advantages in manpower and other means for conventional warfare, the Infantryman does not believe that the security of the nation can rest primarily on a possible superiority of strategic nuclear weapons. He cannot justify the logic of those who claim that the enemy will surrender or that the war will be "called off" in a few weeks, after mass destruction attacks and retaliation have reduced the relative potency of both sides. Hard, cold facts and dispassionate judgment, based on the nature of man and the history of war, dictate that the war will continue after nuclear destruction, and the ultimate decision will still be made by the man on the ground. Our advance and success in combat in the future, as in the past, will be measured only to the point where the Infantryman stands on the field of battle.

The Infantryman has no illusions about his job. He has spearheaded the





Contracts have been awarded for the design and construction of "Aerial Jeeps." *Top:* Chrysler prototype. *Bottom:* Piasecki prototype.

advance in all of our wars. He has always met the enemy head on and destroyed him. He sees no easy way of defeating a foe in the future. He accepts this role without the incentive of personal gain. No amount of money prompts him to stand in the frontline and close with the enemy in personal combat. He does it because this is his job—because the defense of his home and country demands it.

You may call him "doughboy," "trooper," "dogface," "mudslogger," "gravel cruncher" or what you will, but the American Infantryman has always been the backbone of our national defense. You can count on him to be a decisive factor in keeping the Hammer and Sickle off your front lawn in the atomic age.


THE

SOVIETS FORGE AHEAD

The Soviets are equipping their huge army with impressive new weapons and equipment. The latest Red Army parade included powerful and mobile tactical weapons which appear to match and possibly surpass those in the hands of our troops.

The second decade of the atomic era has witnessed a sudden surge in Soviet efforts to take technological supremacy from the West. The Soviets' recent development of an intercontinental ballistic missile, followed by the launching of earth satellites (Sputnik I and II), has goaded the United States to feverish activity in an effort to match and surpass these accomplishments as rapidly as possible. Unfortunately our effort seems confined to the field of missiles and nuclear weapons. We have not increased our attempts to match Soviet developments for their huge land army. Yet during the past few years it has become evident that the Soviets, in addition to their other activities, also have been rapidly re-equipping their army with new weapons and equipment which are designed to increase its firepower and mobility. This was openly demonstrated in the November 1957 parade in Moscow.

The development of impressive new weapons and equipment, however, is not the most dangerous aspect of Soviet progress. The United States and many of the Western allies have had under development and test prototypes of weapons which are equally as good and in many cases superior to those of the Soviets. The really dismaying thing about the new Soviet arsenal is its existence in the hands of troops. This disturbing accomplishment was pointed out by Secretary of the Army Wilber M. Brucker after the 1956 Red Army parade, when he stated, "These weapons are now at the disposal of Red Army units, not on the drawing board or in initial stages of development."

Before we discuss the new missiles and rockets revealed by the Soviets during their latest parade, we should reconsider the weapons displayed by the Red Army last year.[1] The weapons exhibited ranged

[1]For a detailed report of these weapons, see "Soviets Close the Gap" in the January 1957 *Infantry School Quarterly*.

By Col Theodore C. Mataxis

from a new pistol and a family of small arms designed to fire a new, short cartridge similar to our NATO round, to a 9-inch mortar and a 203mm gun-howitzer capable of delivering atomic missiles. They were accompanied by a series of modern trucks, tanks and armored personnel carriers which may equal or even surpass the West's finest. The Soviet modernization program also included a variety of rotary-wing aircraft. Light reconnaissance, medium cargo and heavy helicopters were a part of that exhibit.

Fortunately this display dispelled the rosy picture portrayed in the past by some of our more optimistic "experts." When faced with the vast numerical strength of the Red Army, these experts stated that there was no cause for worry since "quality is better than quantity." They went on to stress the superior weapons, mobility and communications of the Western armies. Their evaluation was based on the condition of the Soviet Army at the end of World War II when it was equipped with a rather hodgepodge collection of weapons, lend-lease equipment, obsolescent trucks, horses and wagons. But this was no more realistic than comparing our modern jet fighters with the Soviet World War II propeller-driven aircraft and saying, "We have nothing to worry about —see how much better our aircraft are!"

Some experts shrugged off the somber

New family of Soviet small arms all of which fire a 7.62mm round. *Top:* rifle. *Center:* light machinegun. *Bottom:* submachinegun.

Magnum

The largest tactical missile displayed in the Red Army parade. It has an estimated range of 400-500 miles and resembles the German V-2.

picture of Soviet progress demonstrated in the 1956 parade because "their equipment and organization was conventional and not tailored to utilize tactical atomic weapons." Atomic weapons were looked upon as the answer to the Soviets' superior numbers. Our divisions were given a "new look" to deal with this menace. It was felt that the streamlined pentomic divisions, with their organic atomic delivery means (the Honest John rocket, backed up by 280mm atomic artillery battalions and Corporal and Redstone guided missiles at corps and field army level) would be more than a match for the multitude of Soviet divisions. In fact it was even stated that the Soviet Army's large size was a liability because our tactical atomic firepower would "cut them down to size." Then our smaller, more mobile units would defeat them.

The 1957 parade surely dispelled the belief that we were comfortably ahead in the field of mobility and tactical atomic weapons. This latest Red Army show was highlighted by atomic weapons with tactical delivery capabilities that not only match but actually surpass those of our current field army.

Ominous new Soviet developments were emphasized by Lieutenant General James Gavin during his testimony before the Senate Preparedness Subcommittee's meeting in December 1957, when he stated that he believes the USSR is militarily superior to us. He specifically mentioned the following pieces of equipment which were displayed in the parade: a rocket of much longer range than anything we have in the Infantry division today, a midrange ballistic missile, a new heavy tank and a new twin-turbine helicopter much larger than any we now have. He went on to say that he was particularly disturbed about the midrange ballistic missile because our forces overseas do not have a missile that can

Magnum

Another large, full-track-mounted missile which is provided with hydraulic lifting devices and a platform for vertical launching.

counterengage the Soviet missile by firing at its site. Nor do our overseas troops have a missile that can defend against it. Consequently, our defense must be passive until we acquire a greater capability than we have at present. The Seventh U. S. Army, which is face to face with the Red Army in Europe, may be in a somewhat dangerous position. This danger was indicated by General Gavin when he stated that the displayed Soviet equipment is superior in a number of respects to equipment now in the hands of our overseas forces.

Lending support to General Gavin's testimony, Army Chief of Staff General Maxwell D. Taylor, in a recent issue of the *Army-Navy-Air Force Journal* stated, "In the midrange field it is quite apparent now that the Soviet forces are equipped with a rocket to which we have no direct response."

Obviously, the recent Red Army display gives rather convincing evidence that the Soviets are not satisfied with gaining a technological lead over the West solely in the field of space satellites and ICBMs. Apparently they were not content to match the Western Powers but have been making an effort to surpass us. This determination is reflected in the following statement regarding the West by a Soviet marshal: "We must study their principles, their methods of organization and the exploitation of their armed forces. We must do this not just out of idle curiosity but to discover their possibilities, to find their strong and weak points and their means and methods of battle. Only knowing this will we be able to oppose them with better, more modern and, for them, unexpected means of warfare."

The fact that the Soviets have re-

equipped their army for the atomic battlefield and that they are closely watching our developments in equipment and tactics should have a sobering influence. The point has now been reached where the Red Army must be regarded not only as the world's largest, but also one of the world's best-equipped armies. This increase in Soviet capabilities was highlighted in the August issue of *Army Information Digest* which stated, "The Soviet Army is the only major force in the world today that has a completely new post-war arsenal of weapons, in being, in the hands of trained troops, capable of fighting either a nuclear or non-nuclear war, big or small, in any kind of climate or terrain."

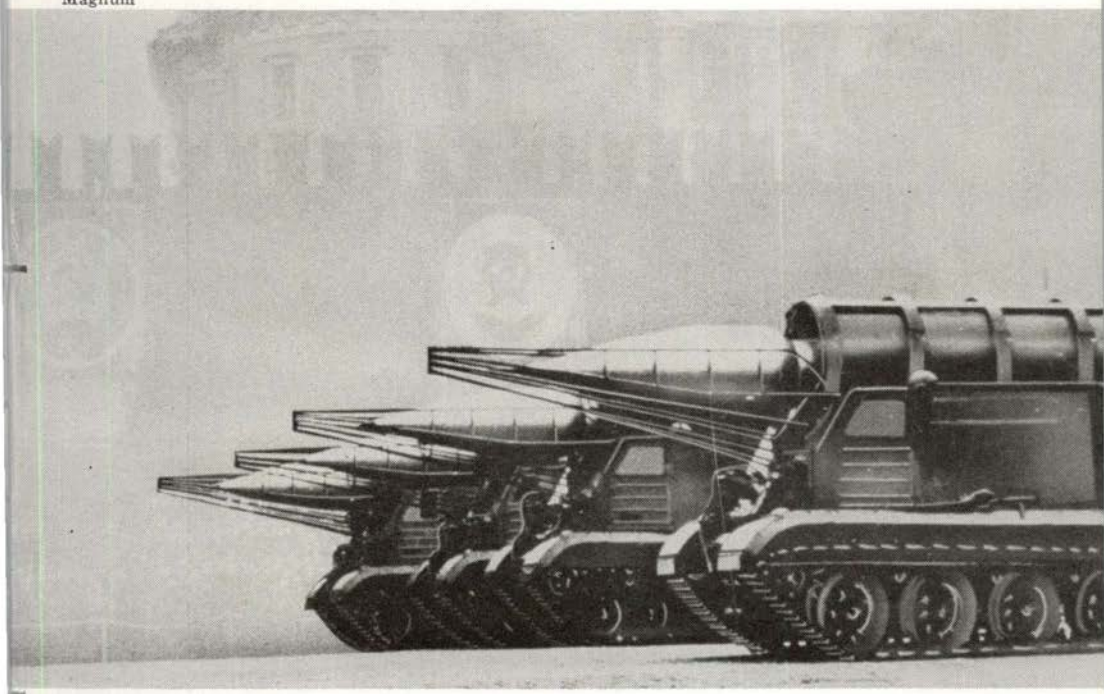
Soviet strength is extremely sobering to our country's planners. Since all-out nuclear warfare has been described by both Soviet and U. S. leaders as "unthinkable" and "mutual suicide," it is now felt that we are more likely to face limited or brushfire wars of the Korean and Indo-China type than total war. The feeling is growing among our country's leaders, both political and military, that unless we prepare to meet the Soviet threats of this type by maintaining strong conventional and tactical atomic forces, we are in great danger of being defeated in a series of peripheral wars.

Now let's take a look at the new weapons displayed by the Red Army during the November 1957 parade in Moscow.

The Soviets have made considerable advances in the field of tactical rockets and guided missiles which are capable of

This bulbous-nosed missile with a warming jacket for extreme cold is mounted on a full-tracked chassis. It has an estimated range of about 50 miles.

Magnum



providing atomic support to their land forces. Two large guided missiles were exhibited in the parade. The largest was a super-heavy missile about 70 feet long. This midrange weapon, about which Generals Taylor and Gavin expressed so much concern, has a range beyond anything we have in our current Army inventory. Wheeled carriers which are towed by a caterpillar tractor give it mobility. It is a single-stage weapon with an estimated range of 400-500 miles. The other large guided missile was considered to be in a class with our Army's Redstone missile.

The next item in the Soviet family of atomic weapons was an artillery ballistic rocket which may be compared in range and capability to our Corporal missile. This bulbous, conical-nosed weapon was mounted on a wide-tracked tank chassis. It possesses great mobility and uses solid fuel which makes it more adaptable for field use than our counterpart, the more complicated liquid-fueled Corporal. A cold-weather jacket protects the rocket motor from low temperatures.

Another artillery rocket exhibited was similar to our Honest John rocket. However, it has greater mobility since it is mounted on an amphibious tank chassis.

It is apparent that these extremely mobile weapons would be ideally suited as tactical atomic means to support fast-moving armored columns in breakthrough and pursuit operations.

The display also included a small group of ground-to-ground rockets which are comparable in size and mission to the American Little John and Lacrosse. Some of these were highly accurate rockets with multiple truck-mounted launchers which obviously are designed to provide close tactical fire support for

This missile, with an estimated range of about 15 miles, is mounted on a full-tracked amphibious vehicle which gives it great utility.

Magnum

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A two-stage surface-to-air missile which appears to have launching and servicing equipment on the wheeled carrier.

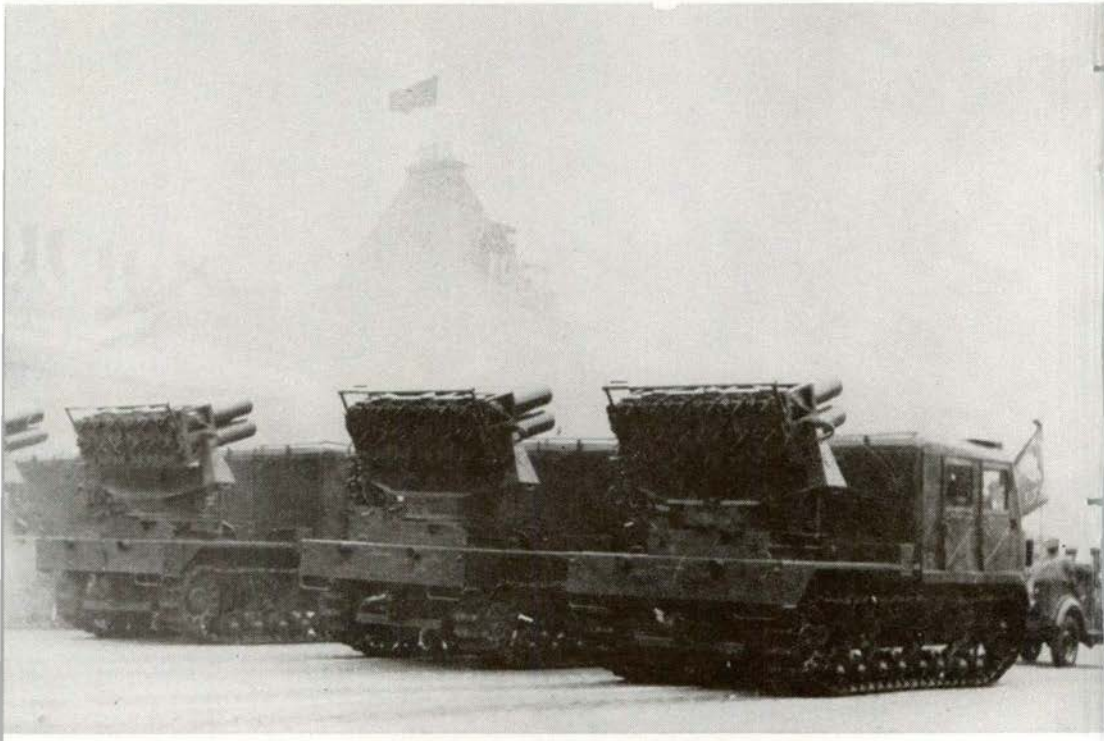
frontline Infantry or mechanized troops.

In addition to the surface-to-surface missiles, the Soviets also displayed a ground-to-air missile in the Nike class. This was a 2-stage rocket with each stage having four fins to provide stability. It appeared to have its own launcher and servicing equipment on its carrier.

In the field of super-heavy artillery, the Soviets demonstrated notable progress during the last year. The 1956 parade revealed the 203mm gun-howitzer as the Soviets' answer to our 280mm atomic artillery weapon; however, in this last parade the Soviets unveiled two gigantic artillery pieces of an estimated 300mm caliber. Both of these weapons were mounted on tank chassis, but their designs differed. One had a conventional recoil mechanism above its barrel. The other had no visible recoil mechanism and was evaluated by expert observers as a gun launcher for an extremely long-range, ram-jet, rocket-assisted projectile.

The remainder of the field artillery weapons mirrored the trend toward mobility. The combined display indicated a new, integrated artillery system that includes not only guns of impressive mobility and effectiveness but also a new series of tracked prime movers which are designed for rapid employment and dispersal.

Also included in the parade was an 85mm gun which is light enough to be towed by a motorcycle. This was one of several new, light antitank guns, some of which were recoilless and evidently designed to employ a shaped charge (ammunition of the Bazooka design). Em-



A twelve-tube rocket launcher which is mounted on a full-tracked chassis for improved ground mobility.

phasis on lightness was further evidenced by a new 57mm antitank gun that can be moved by helicopter.

In addition to modern artillery and light antitank weapons, the Soviets exhibited extremely large mortars. One of these, a 240mm mortar, is the largest weapon of its type and caliber in use by any army. Readily transportable by tractors or trucks, it incorporates design principles which give it far greater range than World War II models. It would be an extremely useful adjunct to normal artillery and is probably capable of firing atomic as well as conventional shells.

In the field of antiaircraft weapons, the Soviets have developed weapons ranging from 2- to 4-barreled 12.7mm antiaircraft machineguns (similar to our quad 50s) to highly mobile 100mm and 122mm antiaircraft artillery pieces equipped with radar-directed fire control. These are designed for protection against high-flying aircraft. However, the most impressive antiaircraft gun displayed was a fully automatic twin 57mm gun mounted on a modified T-54 tank chassis. This weapon gives the Red Army a highly mobile armored weapon that will be able to keep up with mechanized task forces.

Now let's take a brief look at the new Soviet tanks. The T-34, the standard Soviet tank of World War II that was used so effectively against the Germans, has been replaced by a new and improved weapon, the T-54. This new tank is now issued to Red armored divisions as a standard weapon. It combines the best

features of the T-34 but has a lower silhouette and improved slopes and surfaces to deflect enemy fire. To increase its firepower, the 85mm gun of the T-34 was replaced by a 100mm gun equipped with an excellent fire control system for rapid and accurate firing. It received its baptism in combat when it was used to crush the revolt in Budapest.

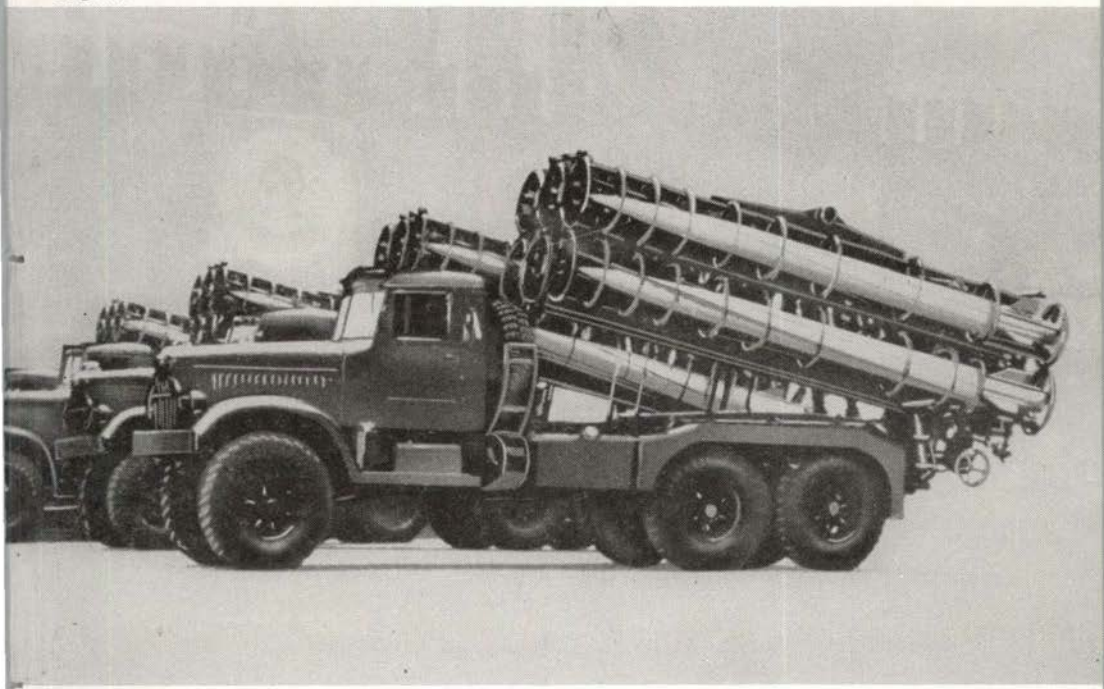
The 1957 parade also revealed a new version of the Joseph Stalin tank of World War II fame. This weapon has improvements over previous Soviet heavy tanks which are comparable to those of the T-54 over the T-34 series of medium tanks. It is wider, longer and more streamlined than its predecessor, but still is armed with the excellent 122mm gun. It undoubtedly has an improved communication and fire control system. These new tanks clearly reflect the Soviets' desire to maintain their acknowledged lead in the tank field.

Also noteworthy was a replacement for the Soviet wheeled personnel carrier, which had been criticized by military experts as being roadbound. Included in the 1957 parade was a full-tracked amphibious carrier, which is capable of speeds up to 50 miles per hour. It can carry an Infantry squad and mounts a 12.7mm antiaircraft weapon. This new full-tracked armored vehicle closes a significant gap in the Soviets' ability to conduct mobile warfare on a nuclear battlefield. The Red Army capability in this field probably now equals in quality anything the West has to offer.

We now turn from ground to air mobility. The Soviet modernization program, as mentioned earlier, has not overlooked the importance of the helicopter on the modern battlefield. Last year the Soviets displayed several rotary-wing

A multiple, truck-mounted rocket launcher which has increased range, accuracy and firepower over its predecessors. It fires a rocket 17 feet long.

Magnum



COLONEL THEODORE C. MATAXIS is a frequent contributor to *Infantry* magazine and other service publications (See "Defense on the Atomic Battlefield," July 1956; "Atomic Fire Support," October 1956; and "The Soviets Close the Gap," January 1957.) Several of his assignments have given Colonel Mataxis experience in evaluating Soviet developments. He came into contact with the Soviets when his battalion was stationed in Berlin in 1946, and a year later, while assigned to the EUCOM Historical Division, he supervised the writing of battle reports by German generals who were in charge of the 1941-45 operations on the Eastern Front. Colonel Mataxis attended the Strategic Intelligence School in 1950 and taught Soviet tactics at The Infantry School from 1953 to 1955. During the Korean conflict he commanded the 17th Infantry Regiment. He is now attending the U. S. Army War College.

aircraft which were considered equal to those developed by the Western Powers. They were categorized into three basic groups: the Hare, a light reconnaissance helicopter similar to our H-13 and H-23; the Hound, a cargo-type helicopter similar to our H-19; and the Horse, a heavy twin-rotor aircraft. The Horse has a clamshell door at the end of the fuselage for simplified loading of cargo and carries an estimated payload of 10,000 pounds.

The Soviets now have a new helicopter which is much larger than any possessed by the United States, and they may have established a world record with it. They claim that this aircraft lifted 26,400 pounds to an altitude of 8000 feet. Designed to carry 70 to 80 passengers, it has a 5-bladed main rotor powered by two turbine engines mounted on top of the cabin just ahead of the gear box. In

Two super-heavy artillery pieces which are mounted on full-tracked heavy tank chassis. They undoubtedly have long-range atomic capabilities.

Magnum

Life

The Soviets' new full-tracked, amphibious, armored personnel carrier which carries a squad and has an estimated speed up to 50 miles per hour.

contrast, the largest American helicopter, the Sikorsky S-56 (H-37), is capable of carrying 25 troops and is rated as having lifted 13,250 pounds to an altitude of 7000 feet. Again the Soviets appear to have forged ahead in a field where we once considered we were firmly in the lead.

Recent information indicates that the Soviets are interested, also, in bettering the capability of their airborne troops. They were the pioneers in airborne warfare, but they surrendered supremacy in this field first to the Germans and then to the British and Americans. A significant indication of the reawakening of Soviet interest in airborne troops is their development of an assault transport similar to our C-123. Considering the success they have had in modernizing their other military forces, there is no doubt that they will be able to develop this capability if they place sufficient emphasis on it.

The Soviets are determined to master this awesome list of new weapons. Soviet Minister of Defense, Marshal Rodion Y. Malinovsky, stated some time ago in a message printed in the *Red Star,* "The duty of the personnel of the Soviet armed forces is the complete mastery of new combat techniques and weapons, the strengthening of military discipline and organization and continuous increase of combat readiness of units and ships."

The Soviet goal to master new techniques includes the coordination of nuclear firepower with the impressive new weapons and mobility of the Red Army. A recent news release from TASS, describing Soviet training exercises in which

The new Soviet T-54 tank which combines a lower silhouette and improved slopes and surfaces with the best features of their T-34.

nuclear weapons were used, indicates that considerable progress has been made in this field.

Soviet publications have constantly stressed the importance of ground combat forces even on the atomic battlefield. In this country, many advocates of the "bigger bang for the buck" have discounted this stress as just a "smoke screen." It has been claimed that the Soviets were playing down the effects of nuclear weapons on ground forces because they didn't have the weapons and capability to engage in tactical atomic warfare. According to these claims, we had nothing to fear from the Soviets' vast ground army, because atomic firepower decreased the importance of numerical strength. A few thousand soldiers armed with tactical atomic weapons would more than match any number of divisions that could be placed against them. This bubble of optimism has burst. Now that the Soviets have an extensive family of longer-range tactical atomic weapons than we have, superiority in the number of ground forces becomes increasingly important. We should not overlook the recent statement by Defense Minister Malinovsky: "Push button war is an invention of writers, not of people who really know war—no war can be won without the foot soldier."

The cold war struggle and problems posed by nuclear weapons have been analyzed by both the Soviets and the United States. Army leaders of both countries have come up with similar conclusions. Balanced military forces are needed. They must include strategic striking forces (such as our SAC) and strong naval and ground forces which are suitable for general or peripheral wars.

The Soviets have faced up to their problem and are rapidly equipping their army to face any contingency from an all-out nuclear war to limited or brush-

The Soviets' new and greatly improved heavy tank which mounts a powerful 122mm gun and has steeply sloped armor.

Magnum

A huge, new helicopter, the HOOK is shown here with the Soviet HARE. It is powered by twin gas turbines.

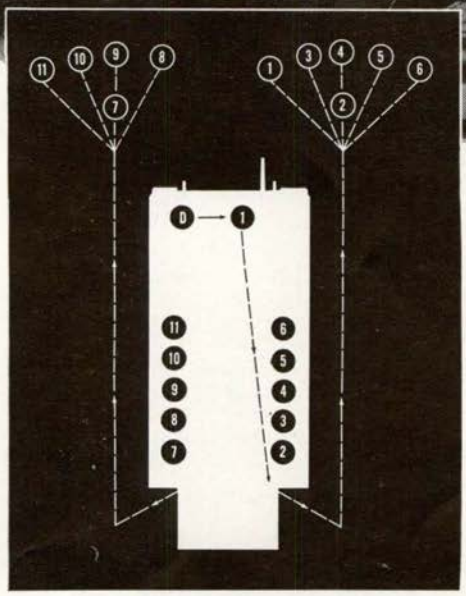
fire wars. We can do no less. We cannot afford to let our attention be so captivated by missiles and "sputniks" that we ignore our ground combat power. If we do, we are sure to play into the hands of the Soviets. As military men, we have our task cut out for us. We must make every possible effort to insure that we have the ground forces we need and that our units are well trained and indoctrinated to meet—not a second rate team—but one of the most powerful opponents in the world.

History abounds with examples in which small mobile forces have defeated an enemy vastly superior in numbers, *but inferior in weapons or mobility*. However, to risk matching an army against a numerically superior enemy, armed with first rate weapons and equal or superior mobility, would be gambling on a forlorn hope. The fate of our Army and our nation is too vital to be dealt with in such fashion, especially when we are faced with an implacable enemy who is bent on spreading Soviet imperialism throughout the world and whose head of state, Nikita Khrushchev, has publicly avowed, "We will bury you."

We must insure that the mobility and striking power of the American Army is second to none. We must give the American fighting man superior weapons, superior air and ground mobility and the best leadership in the world. We cannot afford to let the Soviets forge ahead.

The opinions expressed in this article are those of the author and do not necessarily reflect thinking of the Department of Defense or the United States Army Infantry School.

A twin 57mm antiaircraft gun mounted on a full-tracked medium tank chassis.



CARRIER

By Capt John T. Hodes

Tactical doctrine for Infantry units mounted in Infantry carriers states that the assault companies should move to the objective, or as close to the objective as possible, before dismounting. However, the prospect of dismounting safely and in an organized fashion is greatly reduced the closer a unit moves to

BATTLE DRILL

A drill which will enable a squad to leave the Infantry carrier in an organized manner and ready to engage in close combat.

the enemy. The problem which this presents will be readily understood by any combat commander who has struggled to control a unit as it moves forward from the assault line. But it will take actual experience inside a carrier for some Infantrymen to appreciate the feeling of helplessness and the control difficulties that face a squad about to dismount under fire near an objective.

The crucial period begins the moment the carrier stops, and it continues until the squad leader moves the squad in a conventional formation toward the enemy and away from the carrier. If the carrier stops within the range of enemy

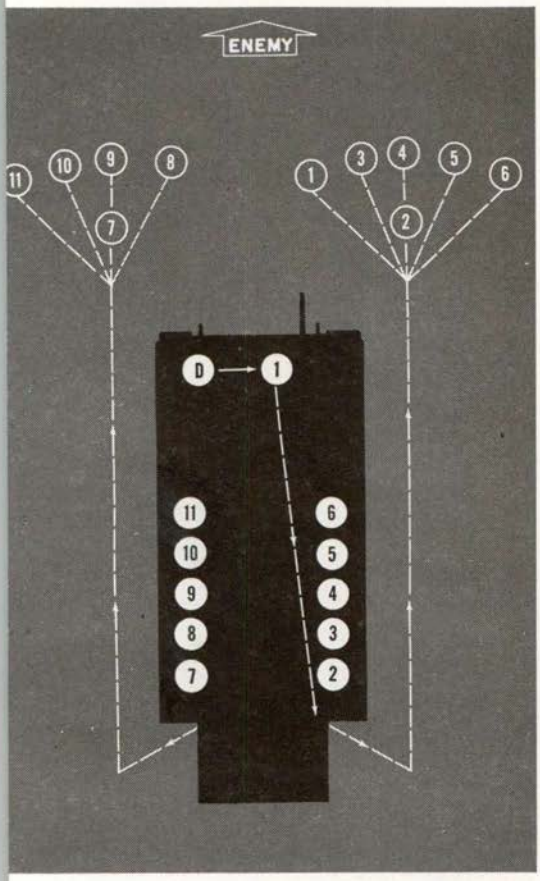


Figure 1. Action Front. If at all possible the carrier is faced toward the enemy to provide protection for the squad as it exits.

small-arms fire and the squad is permitted to dismount in a haphazard manner, there may be few troops left to continue the assault.

The purpose of this article is to suggest a type of "battle drill" for carrier-mounted Infantry units. Employment of such a drill will enable a squad to leave the carrier in an organized fashion ready to engage in close combat.

It is assumed that company commanders and platoon leaders will exercise normal mounted control measures in directing their carrierborne subordinate elements to the objective. And it is also assumed that, once dismounted, the elements will move toward their objectives using conventional fire and maneuver methods. Therefore, this "battle drill" is directed toward the squad leader and the action of his men during that brief but vital period when they are dismounting from the vehicle.

The key man in each squad is the squad leader, who normally rides in the commander's hatch of the carrier. From his position he can see the battlefield, the route to the objective and the signals of his platoon leader. When the platoon leader alerts the squad to dismount, the squad leader in turn alerts the members of his squad to secure equipment. This is done by turning on the carrier's white dome light. Before the carrier stops—on order of the squad leader—the dome light is switched to red, and the squad is given the direction toward which they will dismount. This can easily be done by the squad leader squatting down in the hatch and giving the standard arm signals for *Action Front, Right, Left* or *Rear* (FM 21-60).

The rifle squad is seated in the carrier as shown in Figure 1. The significance of this seating arrangement is to standardize loading and to facilitate dismounting. It should be noted that the senior fire team leader is one of the first to dismount, and the squad leader normally will be the last man off the back ramp. When the squad leader leaves the carrier, the driver moves over to the commander's hatch and operates the .50-caliber machinegun.

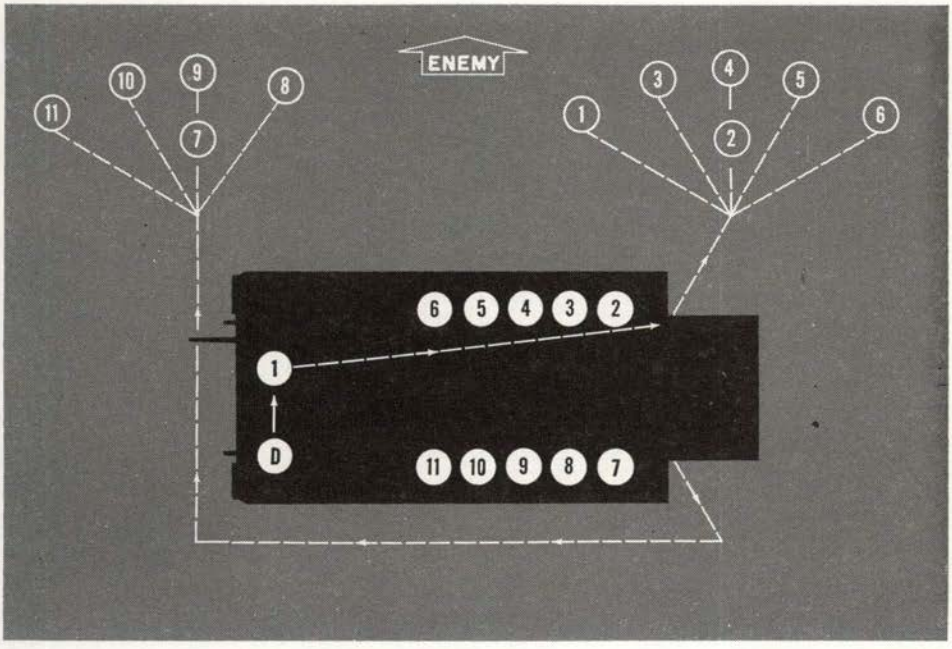
If the squad leader is to signal *Action Front,* he directs the driver to head the carrier directly toward the desired dis-

mount point. An experienced squad leader, if at all possible, will pick a dismount point which affords some degree of cover or concealment. Trained drivers also will know when to start lowering the back ramp so that the squad can dismount the moment the carrier stops.

In executing an *Action Front* maneuver the squad dismounts rapidly, each man going to a fixed position in front of the carrier via a fixed route so that there can be no danger of men colliding with one another. The squad members leave the carrier with their weapons ready for firing and with bayonets fixed. Upon arriving at their positions in front of the carrier, each squad member takes his place in the skirmish line and moves off with the squad in the direction previously indicated by the squad leader, until additional orders are received or enemy action forces other measures.

The theory for this movement is that the squad should spread out and move away from the vicinity of the carrier as soon as possible, since it is highly probable that the carrier will draw fire. If the squad should find that the enemy has the carrier under fire to such an extent that they cannot move, then the first elements out return the fire with the assistance of the .50-caliber turret machinegun, thus providing a base of fire to allow other squad members an opportunity to dismount. Since the .50-caliber machinegun provides the squad with considerable firepower, it should be used to cover the squad's deployment wherever

Figure 2. Action Right. When the carrier must be faced parallel to the enemy and the enemy is to the right of the carrier, the squad leader will employ Action Right. Note that one of the fire teams uses the carrier for protection.



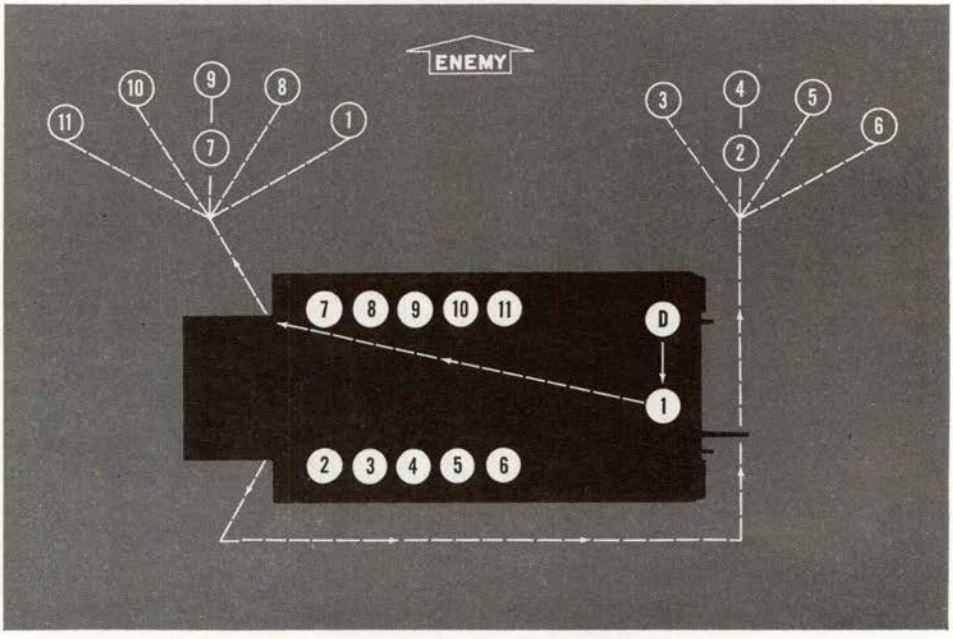
CAPT JOHN T. HODES, a 1949 graduate of the United States Military Academy, enlisted in the Army in 1945. Following graduation from West Point, he completed the basic officers course at Fort Benning and then went to Korea, where he was a platoon leader with the 8th Cavalry Regiment, 1st Cavalry Division. Upon his return to the United States, he was assigned to Fort Hood as a company commander with the 13th Tank Battalion, 1st Armored Division. Captain Hodes began his second overseas tour in 1953 when he joined the 370th Armored Infantry Battalion at Munich, Germany. He served in that unit as a reconnaissance platoon leader, company commander and assistant battalion S3. After completing the advanced armored officers course at Fort Knox last year, he was assigned to his present duties as a tactical officer, 1st Regiment, United States Corps of Cadets at West Point.

possible. After the squad leader dismounts he can join his squad and move them in the direction he desires them to go. Normally, the next move is for the squad to assume its position as a part of a platoon formation.

The significance of this drill is that it places each squad member on the ground ready to fight and in such a position that the squad leader will always know where his men are. Of course, if the squad dismounts on the objective and close to the enemy, squad members will have to assault immediately. This probably will be executed under the direction of the senior fire team leader, since it is anticipated that the squad leader would be either firing the .50-caliber machinegun or proceeding toward the back ramp.

Determining how far forward of the carrier the skirmish line is to be formed will depend on the situation. Under ideal

Figure 3. Action Left. When the carrier is halted parallel to the enemy and the enemy is to the left of the carrier the squad leader will employ Action Left. One of the fire teams is able to use the carrier as protection as it dismounts.



conditions the formation would not be more than 20 paces in front of the carrier, but this will vary depending on the nearest cover and concealment.

In some cases the squad leader will not be able to face the Infantry carrier in the direction of the enemy. In such situations the squad leader will employ *Action Right, Left* or *Rear* maneuvers. (Figures 2, 3, and 4)

Similar drills can be improvised for the weapons squad and even for the 81mm mortar squads, which are mounted on ¼-ton trucks. These drills can provide an excellent vehicle for training Infantrymen to have confidence in using the Infantry personnel carrier.

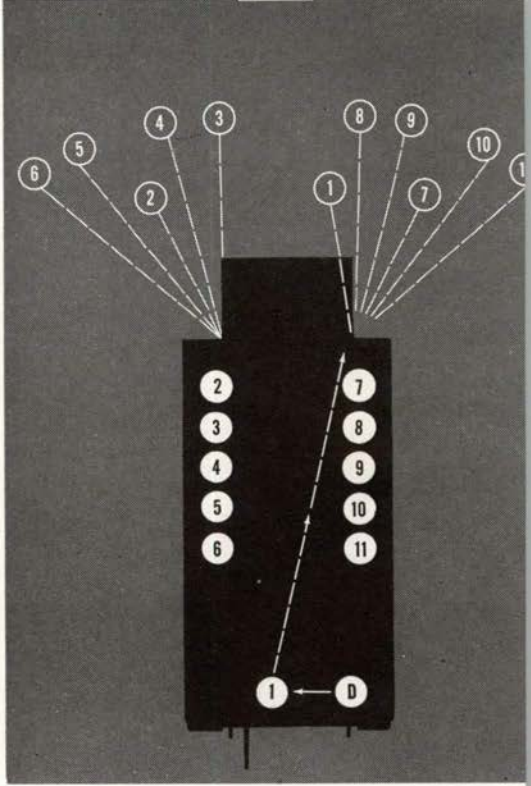


Figure 4. Action Rear. This is the least desirable type of exit. No protection is provided by the carrier.

INFANTRY—THE CORE OF THE ARMY

As I describe the Army mission, I describe the Infantry mission because the Infantry always will be at the core of the fighting capability of the Army, and in that sense, is the core around which are grouped the fighting capabilities of all our services . . . I often reflected, in Korea, that we had complete control of the air and of the sea. We had tremendous destructive power in all the weapons of the Air Force and the Navy and we had a great Artillery. Yet, when the cards were down, victory was measured by the taking of terrain objectives . . . The last 200 yards still had to be taken by a determined man on the ground with his rifle and hand grenade . . . There will always have to be an Infantryman in the final act of battle—the man who closes with the enemy on the ground.

GENERAL MAXWELL D. TAYLOR
Chief of Staff, U. S. Army

Easing

the load on the Infantryman's back!

The Army has adopted a new universal individual load-carrying system. While the weight of the load is only slightly reduced, it will be easier to carry.

The need for increased mobility on the modern battlefield has brought into focus again the load which the Infantryman must carry into combat on his back. Probably as much thought and attention have been given to this knotty problem over the years as have been given to any other single military requirement. Yet, in spite of astounding scientific breakthroughs and technological advances in weapons and equipment for warfare, progress in reducing the Infantryman's load has been minor.

Two years ago the Army introduced the "mechanical mule," which was designed to take part of the burden from the soldier's back.[1] This extremely versatile vehicle can go almost anywhere the foot soldier goes and can carry weapons, ammunition and other items into places where the soldier otherwise would be required to hand-carry them. While this vehicle is now organic to the airborne division, it is not yet in the TOE of the Infantry division. However, even if it were universally available, the Infantry soldier would still have a sizable load of immediately needed items on his back.

The Combat Developments Office of the United States Army Infantry School continues to carry the requirement for lighter and less bulky equipment for the individual soldier high on its list of problems to be solved.

For many years attempts have been made to reduce the weight, size and number of items the soldier must carry, and in a few instances some reductions have resulted. But no significant progress has been made because the changing nature

[1] See "The Mule Returns," *Infantry School Quarterly*, October 1956.

By MAJOR THEODORE K. HUDSON

Prone view of the new load-carrying system. Even with the sleeping bag attached the silhouette is low.

of combat and new developments have increased, rather than decreased, the items which the Infantryman must carry.

One recent development, however, will help to ease the foot soldier's burden — the adoption by the Army of a new universal individual load-carrying system. While this improvement will not reduce to any great extent the weight of the equipment, it will make the load easier to carry. This has been achieved through a better distribution of the items to be carried and elimination of the binding and chafing characteristic of the old harness and pack.

First conceived in 1951, the new universal carrier system has been developed as a joint effort by the Office of the Quartermaster General, the United States Army Infantry Board Number 3 at Fort Benning and the Infantry School's Combat Developments Office.

Much study and research has gone into this project, including study and evaluation of British and Canadian experimental carrier systems and other foreign equipment. Contributions have been made by design experts of the technical services and by experienced personnel throughout the Army.

The new equipment has been field-tested by the Infantry Board under varied climatic conditions. Combat veterans, familiar with the old pack and its cumbersome harness, put the new system through searching tests in Arizona, Georgia, Massachusetts and the Panama Canal Zone and found it superior to anything we have had in the past. Additional tests in Alaska and at Fort Benning proved its suitability for cold-dry climates and for airborne as well as ground combat use.

This recently adopted carrier system has many advantages. It has fewer components, is easier to assemble and disassemble, places ammunition and other needed equipment where they can be reached more easily and weighs three and one-half pounds less than the old equipment. It also has a lower silhouette, is easier to carry and gives the combat soldier greater freedom of body movement.

The system separates the full-field load —a maximum weight of 55 pounds—into three parts: a 20-pound "existence load" of items needed for survival, a 25-pound "battle load" and a 10-pound environmental "protection and comfort" load.

The existence load includes emergency rations, medical items, the canteen and

LOADS AND WEIGHTS

COMBAT LOAD	
Battle load	25 lbs.
Existence load	20 lbs.
FULL FIELD LOAD	
Battle load	25 lbs.
Existence load	20 lbs.
Protection and comfort load	10 lbs.

canteen cup, toilet articles, one pair of socks, poncho and bayonet or fighting knife. The battle load comprises the individual weapon and ammunition. The comfort load includes a sleeping bag, extra clothing and personal gear.

During combat the soldier normally will carry only the existence and battle loads which he will need to perform his combat mission. The 10-pound sleeping bag and comfort items can be dropped instantly by unsnapping a few fasteners. Before entering close combat the soldier can also jettison the 20-pound existence load except bayonet or fighting knife, first-aid pouch and other essential items.

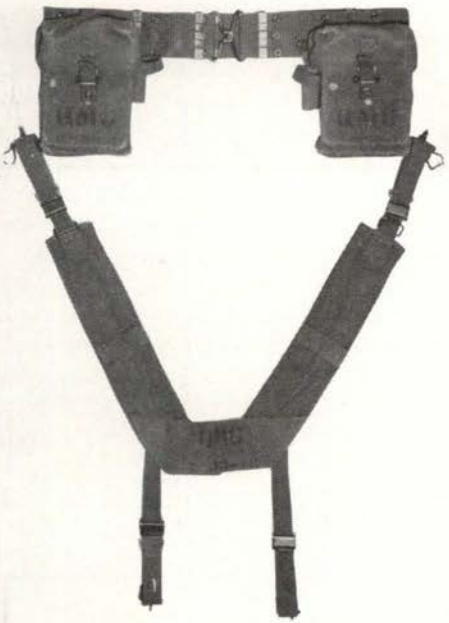


Figure 1. The belt and suspenders. Also shown are the ammunition pouches.

The heart of the carrier system is the harness, which consists of a belt and suspenders (Figure 1). Most of the equipment is attached to the belt, which is similar to the conventional pistol belt, except that it will be available in two sizes —large and regular—and can be adjusted from both ends. This belt has three rows of eyelets. The top row accommodates the hooks of the suspender straps; the center row permits adjustment of the belt length and the bottom row is used for the attachment of standard items of equipment by means of hook-type fasteners. The belt is buckled with the same type fastener found on the familiar pistol belt.

The belt and other components of the individual load are supported by the suspenders, which come in two sizes—regular and long. Shaped like the letter "H" they differ radically from the old M-1949 harness in that they do not cross in the back, but pass over the shoulders and drop straight down. Joined together by a cross strap and heavily padded at the shoulders, the suspenders have two back and two front straps which can be adjusted in length by means of cam-type buckles.

Side view of the new load-carrying system.

Each of the back straps has a hook for easy attachment to the pistol belt. The front straps, in addition to having hooks for fastening on the belt, also have rings to which the sleeping bag carrier is attached. The padded portions of the suspenders have web keepers through which the straps of the sleeping bag carrier are inserted. These keepers prevent the sleeping bag carrier straps from slipping off the padding.

On the front suspender straps, at the bottom edge of the padded portions, there are metal loops to which the carrier straps of the sleeping bag are attached.

The combat pack (Figure 2), which is provided to carry most of the existence items, weighs less than one pound when empty. It also may be used by the soldier as a handbag for personal items when he goes on recreational leave. The top of the pack, which is closed by an expansible flap and secured by two adjustable straps, has a web carrying handle and a plastic holder for a card to identify the owner.

Figure 2. The rear view of the new combat pack. Note the two clips by which it is attached to the belt.

ACCESSIBILITY OF ITEMS

Accessibility I: Instantly accessible to the wearer when standing, kneeling, crouching or in the prone position.
Accessibility II: Easily accessible to the wearer without assistance.
Accessibility III: When on the wearer, need not be accessible without assistance, but should be accessible with assistance.
Accessibility IV: When on the wearer, need not be accessible with or without assistance.

EXISTENCE LOAD

Accessibility I: First aid dressing, bayonet or bayonet knife.
Accessibility II: Canteen cup and canteen, medical items.
Accessibility III: Emergency rations, poncho.
Accessibility IV: Toilet articles, 1 pair socks.

BATTLE LOAD

Accessibility 1: Individual weapons and ammunition[1], crew-served weapons and ammunition, grenades.
Accessibility II: Entrenching tool, compass, wire cutter, hatchet, binoculars.
Accessibility II: Canteen cup and canteen, medical items.

PROTECTION AND COMFORT LOAD

Accessibility I, II and III: None.
Accessibility IV: All items of the protection and comfort load.[2]

[1]This is part of the Existence Load with Accessibility I for all soldiers except Infantry.
[2]Although no item of the protection and comfort load should be classified higher than Accessibility IV, it must be realized that there is a requirement for this item to be easily and quickly jettisoned.

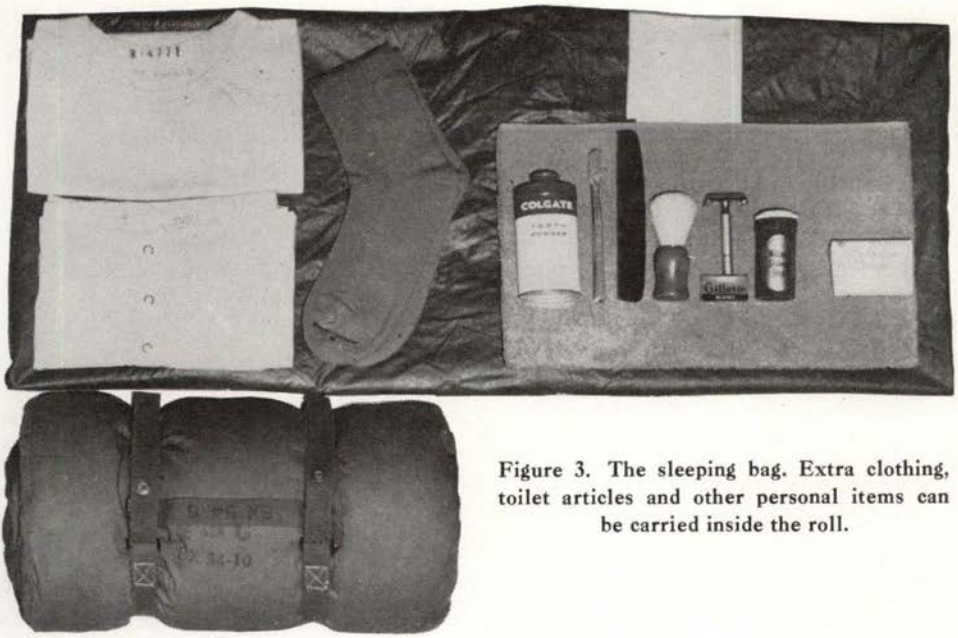


Figure 3. The sleeping bag. Extra clothing, toilet articles and other personal items can be carried inside the roll.

Two slots on each side of the pack accommodate the carrier clips of other pieces of equipment. Eyelets are also provided to permit the attachment of such items as the wire cutter and the machete. The pack is attached to the pistol belt by two clips located on the back (Figure 2).

A simple lightweight carrier for the sleeping bag (Figure 3) permits this item to be added or dropped without removing any other equipment. The carrier is attached to the bag by two adjustable straps after it has been tightly rolled.

Two lightweight ammunition pouches are carried on the belt to accommodate the various types of individual and crew-served weapons ammunition. These tough cotton-duck pouches have carrier clips on the back which attach to the belt, and straps which snap on the loops of the front suspender straps to provide stability. There is a slot on one side of each pouch to receive the carrier clips of other small items. The other side of the pouch has a web retaining strap for the hand grenade.

Each pouch will accommodate either six 8-round clips of rifle ammunition in a bandoleer or two 20-round BAR magazines. Thirty-round carbine magazines or 7-round pistol magazines may also be carried if desired.

Mechanized Infantrymen will find the new equipment a definite improvement. It is more suitable for fastening to the outside of the vehicle, and since there are fewer straps there will be less entanglement of the equipment on protruding objects. Also, the equipment will require less storage space within the vehicle. The soldier can mount and dismount faster and he can ride in the Infantry personnel carrier more comfortably.

Although the new equipment cannot be worn under the T-10 parachute harness in airborne operations, it is suitable for parachutists if carried as an equipment bundle or placed inside the para-

MAJ THEODORE K. HUDSON, Quartermaster advisor to the United States Army Infantry Board, helped to test the new load-carrying equipment recently adopted by Department of the Army. He received his commission in the Corps of Engineers in 1942, upon graduation from OCS at Fort Belvoir. During World War II he served in the European Theater as an engineer battalion S4 and executive officer. Transferring to the Quartermaster Corps, he served in the 11th Airborne Division as a company commander and as a staff officer of the Division Quartermaster. Following duty with the Quartermaster School, Major Hudson was assigned as a Quartermaster advisor to the Chinese Nationalist Army. He received his present assignment in 1954.

chutist's adjustable equipment bag. Used in this manner, the equipment does not interfere with exit from the aircraft or manipulation of the parachute during descent or landing. Tests have revealed that the airborne soldier, after a drop, can remove the parachute harness, take the equipment from the adjustable equipment bag and put it on in an average time of one minute and thirty seconds.

In every respect, this newly adopted universal load-carrying system surpasses previous equipment. It is a major step forward in easing the load on the Infantryman's back, but the problem of *reducing* the load still exists. Our next step must be a breakthrough in this area.

COMING - A LARGER INFANTRY MAGAZINE!

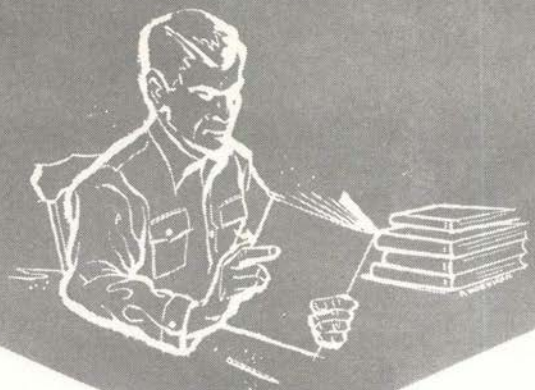
Infantry magazine is going to be bigger and better. Starting with the next issue, the page size of *Infantry* will increase to 8¼ x 11 inches—making it a full-size publication.

This should be welcome news for readers and authors alike. The larger format will permit the publication of more articles and at no increase in subscription rates. The larger size also will provide greater flexibility in the presentation of material and will permit better illustrations.

While the scope of the material published will be increased to include additional items of value and interest, *Infantry* will continue to be the official publication of the U. S. Army Infantry School and the professional journal for Infantrymen and those who work with the Infantry. As in the past, it will publish the latest doctrine and thinking on Infantry organization, tactics, weapons, equipment and techniques including Airborne Infantry and Ranger. Don't miss the first issue of the new *Infantry*.

100,000th

man enrolls in Army Extension Courses



In less than three years 100,000 men have invested in their military future by enrolling in the Infantry School's Army Extension Course program. Why don't *you* join these thousands of forward-looking individuals by signing up for an Army Extension Course *now* ? By increasing your professional knowledge through these free, study-at-home courses you will be prepared for positions of greater responsibility and future promotions. There is a course tailored to suit *your* needs.

Since August 1955, when the 10-series of Army Extension Courses was transferred from the Army General School to the Infantry School, more than 100,000 men have enrolled in the Army-wide Pre-commission and Infantry courses now being offered by the Infantry School.

Write to: The Commandant, United States Army Infantry School, Fort Benning, Georgia. Attention: Deputy Director for Extension Courses.

Still best for personal defense,

THE CALIBER .45

This article is recommended reading for anyone who feels he cannot hit the side of a barn with the pistol.

It is disturbing to hear officers, frequently senior officers, remark that they cannot "hit the side of a barn" with the caliber .45 pistol, or to listen to comments that they "could do better by throwing the pistol at the enemy than by firing it."

In combat we have seen officers and men, whose prescribed weapon is the pistol, arm themselves with a carbine, a submachinegun, grenades or some other weapon in which they had more confidence.

Such remarks and actions cause anyone who knows the outstanding quality and effectiveness of the U. S. Army pistol to see red. They represent thinking that a pistol instructor might be inclined to ignore and certainly would not be expected to mention. Yet, since these attitudes toward the pistol have existed in some minds in the past and still exist today, they cannot be ignored. They must be faced squarely and eradicated if the caliber .45 pistol is to be employed effectively in its proper role in our small-arms weapons system.

The first step in developing a proper attitude toward the pistol is to point out established facts about this weapon. The pistol was designed for close-range, individual protection. Extensive tests by the Army throughout its long history have proved that the pistol is not excelled by any other weapon for this purpose. These tests also prove that, for dependability and accuracy, our automatic pistol, caliber .45, compares with or exceeds any for-

PISTOL

By Captain John L. Eberhard

eign-made pistol. It has been so satisfactory that no major changes have been required for more than forty years. In spite of sweeping changes that have been made in the Army's organization, equipment and weaponry for atomic age combat, it has not been found necessary to introduce improvements or substitutes for this weapon. It is significant that there are 1848 of these pistols in the new pentomic Infantry division—one for approximately every seven men.

It is realized, of course, that these statements, however true, will not convince a person who lacks confidence in the pistol. No matter how superior a weapon may be, it is of little value if it cannot be fired effectively by the individual. The Army was convinced long ago that anyone can fire the pistol and can use it more effectively than any other weapon, in the role for which it was designed. However, even this knowledge will not convince the person who has failed to fire it successfully. It takes the personal experience of hitting what he aims at and positive evidence that he can really defend himself with this weapon to prove the value of the pistol to such an individual.

If the pistol is so dependable and so accurate, and if anyone is capable of firing it effectively, why do some people lack confidence in it? Why do they do so poorly when they try to fire it? The answer lies in errors made by the firer which have not been prevented or corrected by our pistol instruction.

Figure 1. Correct firing position. The right arm is fully extended with the elbow locked. The left hand is placed comfortably in the trouser pocket to avoid tension from holding it in a fixed position. With the shooting arm extended in the most natural direction, the firer shifts his feet until the weapon points naturally at the target.

We have constantly searched for a method of instruction which would enable every individual to fire the pistol in the manner in which we know it can be fired and which would result in the acclaim for this weapon that it should have.

During the past two years changes have been made in preparatory pistol marksmanship training at the U. S. Army Infantry School which appear to approach the desired goal. These changes, while actually minor, have produced gratifying results. Remarkable improvement has been noticed during the annual required firing of field grade officer personnel assigned to the Infantry Center and the Infantry School. Many officers who came to the range hesitantly and with recriminative attitudes toward the pistol, developed by years of struggling to qualify, left, after shooting high sharpshooter or expert, with newborn confidence and enthusiasm for the weapon. This improvement was particularly significant since these officers received only four hours of instruction and practice before shooting for record.

Three simple but vital changes in instruction have made the difference. They are: *great stress on sight alignment,* the *use of a covered bull's-eye* during preliminary instruction and practice firing and *a revision in the method of gripping the pistol.* All other steps in preparatory marksmanship training, such as proper position, trigger squeeze, etc., are presented in the usual manner and *with the usual emphasis* (Figure 1).

Sight alignment. Since the distance between the front sight and rear sight on the pistol is so short, perfect sight alignment is essential (Figure 2). The slight-

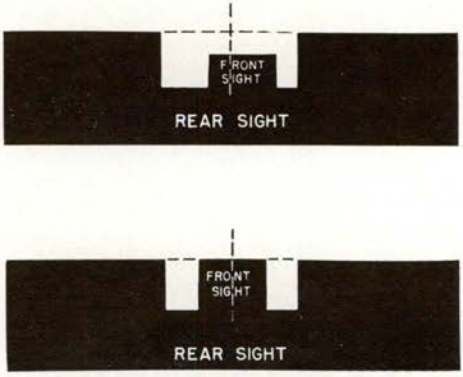
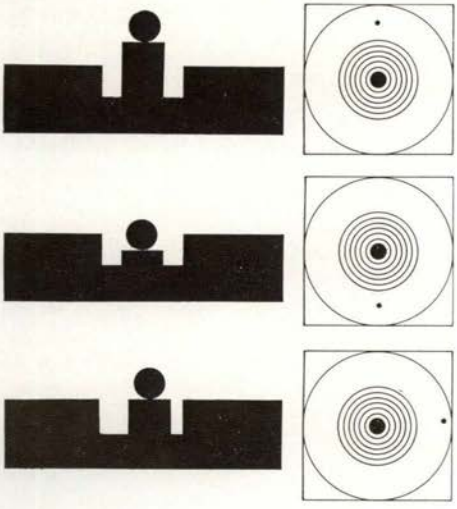


Figure 2. Sight alignment. In the top illustration the front sight blade is low and to the right. This improper alignment will be magnified 129 times at a range of 25 yards. An error of 1/10-inch will cause the bullet to strike approximately 13 inches from the point of aim. The bottom illustration shows correct sight alignment. The front sight blade is centered in the rear sight notch so that there is an equal amount of light showing on each side. The top of the front sight blade is level with the top of the rear sight. This alignment *must* be maintained if the pistol is to be fired accurately.

est deviation in alignment is magnified 129 times at the target. For example, when firing at 25 yards, an error of $\frac{1}{10}$ inch will move the strike of the bullet 13 inches on the target—enough to miss the bobbing target completely or to produce an unqualifying score on the bull's-eye target (study Figures 3 and 4). Unless perfect sight alignment is stressed and demonstrated until the firer clearly understands it, he cannot fire the pistol accurately. On the other hand, when he does recognize the importance of perfect alignment and concentrates on it, his shooting improves immediately.

To maintain proper sight alignment, it is necessary to keep the eye focused on the front sight blade. The distance is too great for the eye to focus simultaneously on both the target and the pistol sights.

Figure 3. Effects of incorrect sight alignment. In each of the three sight pictures the front sight is in perfect relation to the bull's-eye, but the firer has failed to concentrate on proper sight alignment. In each case the error, when magnified 129 times at the target, caused the bullet to strike far from the point of aim as illustrated in the targets shown on the right.



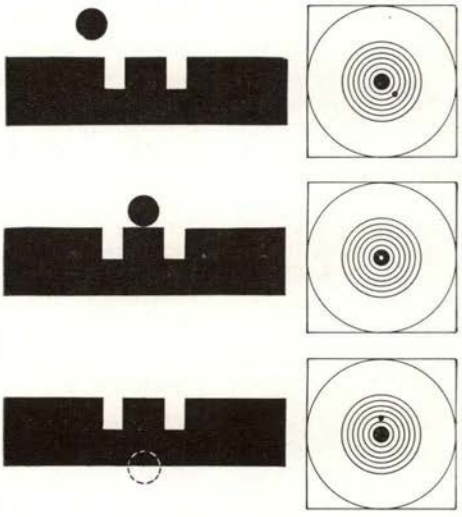


Figure 4. Importance of correct sight alignment. In each illustration the firer has concentrated on and maintained proper sight alignment. In the top and bottom illustrations the natural instability of the average firer has caused the point of aim to move off the bull's-eye. However, since no *angle of error* has been introduced, the bullet strikes precisely at the point of aim — or close to the bull's-eye. In the center illustration the point of aim was exact, resulting in a center bull's-eye.

Most new shooters, and many with considerable experience, find it difficult to focus on the front sight, particularly when they are firing at a bull's-eye target. They invariably focus on the bull's-eye, or they shift their focus back and forth from the bull's-eye to the front sight blade. Proper alignment cannot be obtained and maintained when this is done. Furthermore, the eye soon becomes strained and begins to water. Also, the firer frequently tries to pull or jerk a round off quickly, while the bull's-eye is sitting directly on top of or passing over the front sight. Sight alignment is forgotten and the shot is bad. The firer is licked and his confidence is gone.

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Covered bull's-eye. It has been found that these errors can be prevented or corrected by pasting a silhouette target over the regular bull's-eye target. When this is done the firer does not have a specific aiming point, which will cause the focus of his eye to shift from the sights or tempt him to get off a hasty shot. He can concentrate on perfect sight alignment and trigger squeeze with the pistol pointed generally at the center of mass of the silhouette target (Figure 5). When he has fired in this manner and the silhouette is removed, the firer is amazed at the number of bull's-eyes, nines and eights he has scored (Figure 6). He is still further amazed at how many hits he gets on the bobbing target when he concentrates on sight alignment while squeezing the trigger. His confidence in his ability to hit what he aims at, and his interest and confidence in the pistol are established immediately.

Gripping the pistol. Many firers probably recall the old method of gripping the pistol, in which the weapon was held loosely in the hand. This method was faulty because it allowed the pistol to turn in the hand every time it was fired. Another method was to hold the weapon tightly. This was faulty also, because a death grip causes the arm to shake. Both

Figure 5. Bull's-eye target covered with an E-type silhouette target. The firer aims at the center of mass while concentrating on proper sight alignment and trigger squeeze.

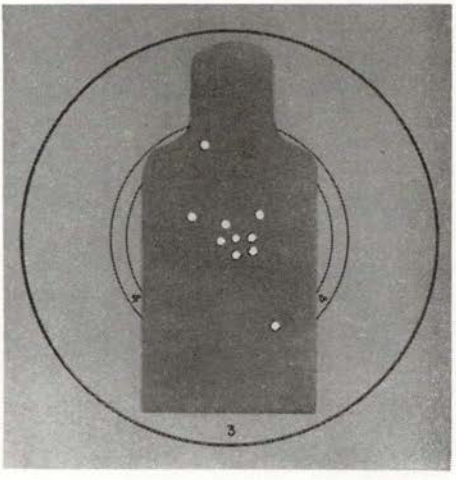
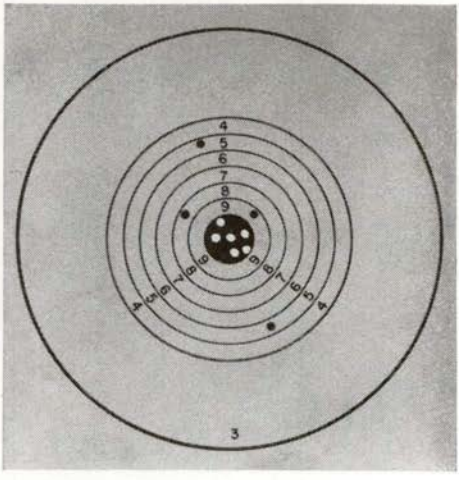


Figure 6. Results of this firing after the silhouette target is removed. The firer has dropped only 13 points. With comparable firing for record, he would qualify as expert.



of these methods should be disregarded. The pistol should be gripped "firmly" as shown in Figures 7 and 8. If this is done, the pistol will not move in the hand nor will it cause excessive shaking of the arm.

Proper grip can be checked by looking at the knuckles of the firing hand. If they are white, the grip is too tight. Again, if the weapon changes position when fired, and must be regripped, it is too loose. Regripping of the pistol will change the shot pattern.

Figure 8. Correct grip — side view. Note that the butt of the weapon rests firmly against the meaty portion of the heel of the hand. The last three fingers are firm against the metal of the receiver. The thumb is placed on top of, or even with, the safety lock applying pressure downward and to the right. As much of the trigger finger is placed on the trigger as possible while leaving a pinpoint of light between the inside of the finger and the receiver.

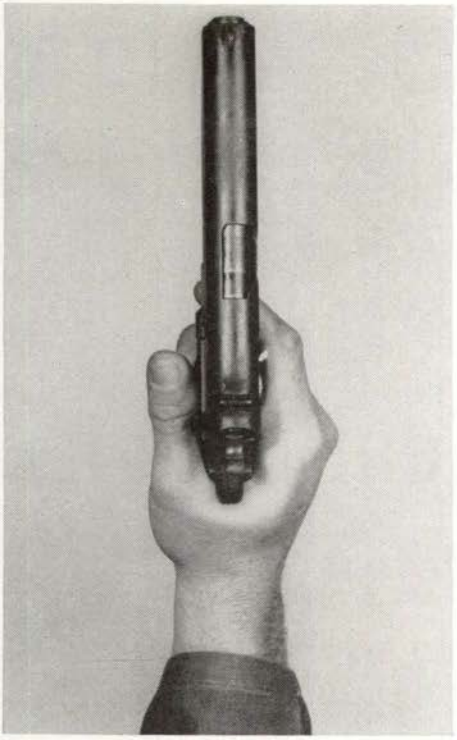
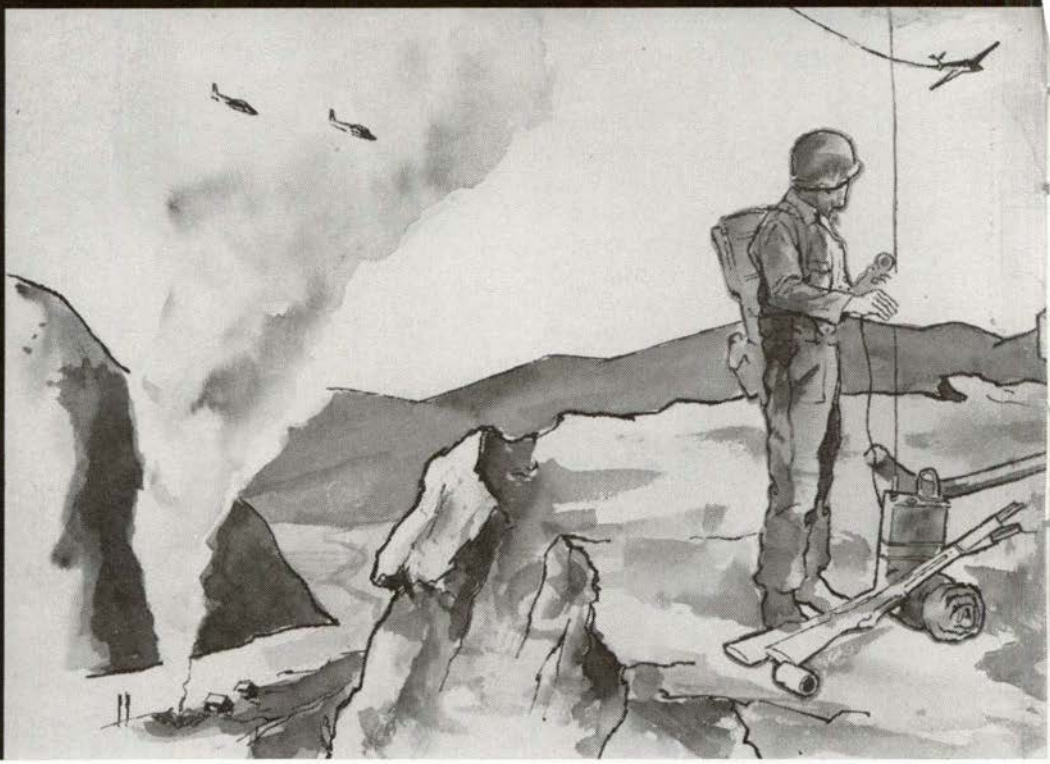


Figure 7. Correct grip — top view. The grip safety is wedged firmly into the V formed by the thumb and the forefinger of the firing hand. When the trigger finger is placed on the trigger, as described in figure 7, sufficient space is left between the side of the receiver and the inside of the trigger finger to allow the firer to squeeze the trigger straight to the rear without moving the pistol to the side.

Many firers who have failed to qualify under the normal method of firing at the bull's-eye target, shoot expert scores when the bull's-eye is covered by a silhouette. Some would prefer to fire the record course in this manner. However, once an individual has gained confidence in the weapon, has learned to focus his eye consistently on the front sight blade and to concentrate on perfect sight alignment, the silhouette should be removed. He can further improve his accuracy by using the bull's-eye. But if he slips back into faulty firing he should return to use of the silhouette until these errors are corrected.

If you lack confidence in the pistol, if you do not consistently fire a high expert score, try this method. You will be surprised at the results.



Medical Service

By LT COL ROBERT F. BELL

Adequate medical service for modern combat will require some modifications in medical support. The individual soldier must be trained in emergency life-saving techniques.

Considerations for modern warfare are based upon the use, or threat of the use, of mass-destruction weapons.

As tactics and equipment are revised or developed for this type of combat, similar reorganization of the Army Medical Service functions must occur if medical units are to be as effective as they have been in the past.

The basic principles of field medical service, first visualized and placed in effect by Major Jonathan Letterman in 1862, have proved their great value during times of war. Estimates of future

for Modern Combat

problems indicate that the basic principles will remain valid. However, the means by which the principles are implemented may require considerable modification. The necessity for the medical service to provide treatment to the injured soldier without delay, and the requirement for both active and passive protection against nuclear effects, represent our greatest problems. Reorganization and modifications of future medical elements must be based on these problems.

The use of wide dispersion and maximum mobility to avoid or reduce the damage of enemy nuclear weapons tends to increase the interval between the time of injury and treatment by the medical service. Some means must be devised to reduce this time lag if our casualties are to survive. However, there are certain operational problems of medical support which complicate efforts to save time.

The requirement to support small units which are widely separated laterally and in depth and the requirement for the medical elements themselves to disperse as a passive defense measure against

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mass-destruction weapons complicate medical operations and make control more difficult, particularly in forward areas.

Communication limitations, a complicated chain of evacuation, the number of units to be supported and the time required to get medical personnel where the support is needed are problems which must be considered and overcome.

These problems are not new to the Army Medical Service. During the change from the old "square" division to the "triangular" division, many similar problems were solved by reorganization of medical elements. Further internal rearrangement can accomplish similar results in future organizations, including the current pentomic organization.

Let's consider some of the specific problems which face us. During the Civil War excessive loss of life and failure to recover the wounded generated the requirement for medically trained personnel to provide emergency care and evacuation on the battlefield. As a result, the predecessors of our present company aid men were assigned to combat elements to perform on-the-spot emergency medical treatment. The wisdom of this decision and the effectiveness of company aid men have long been eulogized by the combat soldier.

Regardless of the nature of modern warfare, company aid men will remain indispensable and will perform a major emergency function. The only questions concerning aid men are how many will be required and what degree of capability must they have. These will be discussed later.

Evacuation of the wounded is another problem which demands attention, particularly with regard to time-distance factors. On a dispersed battlefield, channels of medical evacuation, as well as lines of communication, are subject to interruption by hostile action. When such interruption occurs, medical evacuation and treatment will suffer. Means must be found to counteract this. Every effort must be made to increase the flexibility and mobility of the medical units, to decrease reaction time to rapidly changing situations and to maintain absolute knowledge of the combat situation at all times.

Treatment and evacuation are so closely related and interdependent that there is difficulty in determining where one requirement begins and the other ends. Steps must be taken in the forward areas to minimize the load of medical treatment and evacuation. Greater effort must be made to return all combat effective individuals to their units during peak combat loads. This requires a very critical evaluation of the injured to determine who must be evacuated to the rear.

Such action will help to maintain maximum fighting strength, reduce the load on the replacement system and lessen evacuation requirements. It must be recognized, however, that many of the injured, who may be capable of carrying on their combat missions for short periods during the height of battle, may later require further treatment and possible evacuation. It is obvious, then, that the forward area medical personnel, especially aid men and litter bearers, in addition to performing necessary emergency treatment, must be better equipped and better trained to sort out and evaluate the wounded.

Although it would be desirable to place a qualified surgeon with each small unit to perform the function of sorting and treating, the medical corps potential to supply sufficient doctors makes this impracticable. Aid men and other medical service personnel must be trained to provide immediate and capable emergency treatment. Steps are continuously being taken to increase the capability and efficiency of these critical groups of personnel.

Since treatment must be continuous from the time the soldier is injured until he has recovered, every individual in the medical service should have, as a minimum, the training and efficiency of the company aid man in addition to any other specialty he may possess. This is an important consideration in the replacement of company aid men and litter bearer personnel.

Treatment or evacuation in combat cannot be discussed without considering the requirement for mobility. Armies have been increasingly dependent upon mobility to achieve success in the face of modernization of weapons. This will be even more important in wars of the future. Medical support must keep pace. The company aid man must keep up with the combat elements, administering aid to the injured as he finds them, then proceeding on with the unit to continue the process. The supporting elements—litter bearers, ambulances and aid stations—must follow up in the wake of the aid men to further evaluate, treat, evacuate or return the injured to duty. This same function must be performed at every level of medical evacuation and treatment.

The requirement for mobility poses the problem of preparing casualties for

evacuation in the shortest possible time. A medical facility heavily involved in the process of treating wounded is immobile and will be unable to fulfill its direct support mission. It must be able to pack up and move with the unit it supports.

In the forward areas casualties must be evacuated by every means possible, to clear the battlefield and maintain mobility. Injured personnel who do not require assistance must proceed under their own power to the nearest medical agency. Litter cases, depending on terrain conditions, must be evacuated by litter bearers, frontline ambulances or tactical vehicles which can be made available.

Helicopters and, in rare instances, fixed-wing liaison aircraft may be used to augment the evacuation capabilities. Helicopters were used successfully in Korea but mostly in isolated areas relatively free from enemy action. Improvements being made in helicopters and their increased use for resupply and other missions will permit greater use of these aircraft for evacuation. However, present maintenance and operation difficulties limit their use to an auxiliary evacuation service which will augment ground evacuation means.

Despite the great value of helicopters, it is not believed that they will supplant all ground means of evacuation, particularly in the forward combat areas. However, at division, corps and army level, both fixed- and rotary-wing aircraft undoubtedly will be used to a much greater extent to save time and life.

Control of treatment and evacuation by the Army Medical Service is another factor which cannot be disregarded. Once a wounded man is placed under treatment, the commander is relieved of further responsibility for his medical care. Technically, the casualty is the responsibility of the Army Medical Service from the time he is first treated by medical personnel until he is returned to duty. Since life is at stake, the Army Medical Service has always retained this responsibility because of the peculiar techniques and skills required. Department of the Army recently reaffirmed this position in an official directive.[1]

Responsibility for medical service implies command of all activities associated with the care of the sick and wounded. Command has the advantage of providing a direct line to all operational activities with minimum intervening agencies. This is a most important consideration in facilitating rapid reaction to emergencies. Recent recommendations to the Department of the Army reflect a change of doctrine. It has been recommended that the surgeon have control over nonmedical means of air evacuation to the extent that he can designate pick-up points for casualties, provide care for casualties enroute and control the destination of the evacuation. This control is essential to maintain maximum flexibility of all medical units and to prevent the overloading of installations.

The use of atomic weapons will present additional medical support problems. When a nuclear weapon strikes a combat unit, the greatest initial concern is for blast and thermal injuries. Prompt radiation casualties for the most part will be delayed in their appearance. They need not be considered as strictly emergency problems. And the problems arising from the fallout of fission products will be ones of more concern to tactical maneuver than to emergency medical treatment.

To better understand the effects of atomic weapons on medical service, let's consider the load which might be placed upon the unit medical service of a battle group if that unit were hit suddenly and without warning with a mass-destruction weapon. Our first concern is the number

[1]Pars. 5, 5b and 5c, AR 40–2, dated 9 July 1957.

of casualties that might be expected. In this area the best we can do is to make an intelligent guess, since there are no really valid statistics on which to base accurate calculations. Also there are many intangibles, such as the size of the weapon, the height of the burst and the accuracy with which the enemy uses his weapons. However, we do have some figures which have been obtained from exhaustive studies of weapons effects and correlated with the knowledge of damage criteria upon the human body and experimental animals. These figures have been developed largely through the efforts of Walter Reed Army Institute of Research and the Armed Forces Special Weapons Project. They can be used for planning purposes and, as experience factors are obtained, they can be adjusted.

If we assume that the battle group is hit with a nominal,[2] high-air-burst weapon and if we further assume a uniform distribution of personnel, estimates of maximal damage indicate that approximately 50 percent would be killed immediately. Of the survivors, an estimated 20 percent would receive minimal injuries and, if properly cared for, could continue on with the mission. Another estimated 10 percent would require immediate emergency medical assistance, while an additional 10 percent would require treatment ultimately, though some delay could be tolerated. The remaining 10 percent would not be expected to live, despite maximum treatment efforts.

Using a rough figure of 1500 men, 750 (the immediate dead) would not involve medical attention. Approximately 300 would receive injuries which would require only self-care or minimal treatment by aid men. The main effort of the company aid men would be centered on the 150 men who need emergency medical assistance. An additional 150 less seriously injured would receive second priority in treatment. The remaining group of 150 would be those critically injured individuals who could not be expected to survive without heroic measures. Treatment would be provided to this group as time and equipment could be made available.

Pertinent to these considerations is a well established factor that has been verified by past wars. The time during

[2]The term "nominal" is used to indicate weapons of the size used over Nagasaki and Hiroshima.

which seriously injured battle casualties can survive without assistance is measured in minutes rather than hours. Unless some immediate action is taken to control bleeding and to prevent shock, the casualty's chance of survival is practically nonexistent.

In atomic warfare there will be instantaneous production of casualties in contrast to the normal sporadic production of casualties experienced in nonatomic warfare. Accordingly, the problem of immediate emergency treatment is magnified.

If the battle group we have been discussing were hit by an atomic weapon, all of the casualties would occur at once and probably would include casualties among the company aid men. There would be 150-200 casualties who must be treated immediately if they are to survive.

With the present allocation of one aid man per rifle platoon, it is obvious that the 22 company aid men of the battle group could not treat such a large number of casualties within the few minutes during which there is a chance to save life.[3] The only course of action which appears feasible to meet this situation is to accelerate the training of combat soldiers in emergency life-saving techniques. They must be taught how to preserve their own lives and the lives of others for a reasonable period of time until medical assistance can be obtained. Self-aid training is now emphasized in all replacement and training centers, as well as in service schools and troop units. It is expected to increase in intensity, with frequent repetition of cycles, in the future.

Detailed study of World War II and Korean wounded-evaluation statistics has revealed that approximately 20 percent of the seriously wounded who might have been saved by prompt and proper first aid measures did not reach or were not reached by medical agencies. If these soldiers or their companions had known how to stop bleeding and prevent shock and had applied these relatively simple procedures, more casualties would have survived to receive treatment from medical personnel. The loss of life would have been substantially reduced.

The problems of evacuation also are magnified in atomic warfare. Obviously the damage produced by nuclear weapons will seriously interfere with methods of evacuation and routes into the damage zone. To further complicate the problem, minimum assistance may be expected from neighboring units which must continue on their combat mission. Furthermore, only limited support can be pro-

[3]The company aid men are located in the treatment section of the battle group medical platoon. They are habitually attached to the combat units on the basis of one per rifle platoon, one per mortar battery and one per battle group headquarters—a total of 22. The potential of the battle group treatment section would not be immediately available to frontline troops for emergency medical treatment.

vided to the disaster zone by division medical elements because of their commitment to support the remaining combat units.

The only solutions to this problem appear to be highly mobile medical teams, or units capable of being air transported. Along with air-transported or air-dropped medical supplies they could provide the most rapid and effective means of getting early medical treatment and evacuation support into the disaster area. How soon this could be accomplished depends upon the amount of enemy activity, the location of the treatment teams or units, the reliability of communications and availability of aircraft. Ideally, such supporting elements should be located either within the corps or forward army zone, adjacent to helicopter units, which may be either transportation-cargo or medical-ambulance units. The mobile medical elements should be operationally disposed to support the forward areas. For greater efficiency, they must be under the command of the army surgeon or his representative. As pointed out previously, some operational control of the aircraft, regardless of their source, must be retained by the medical service when the aircraft are used for evacuation. To accomplish this, a medical-group type of command appears desirable in the forward army area to maintain centralized control and to insure careful planning and rapid execution. Adequate communications and minimum delay by intervening headquarters must be present if this concept is to be effective.

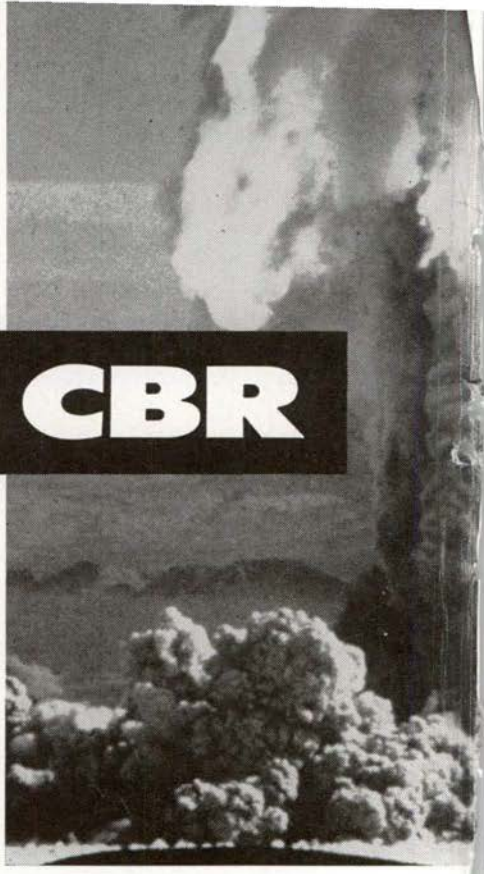
Solution of the problems of providing adequate medical service under conditions of both atomic and nonatomic warfare will require careful analysis of the situation and application of the basic principles of field medical service. Our resources are such that strict tailoring of available means must be employed to assure that the essentials necessary to preserve life and limb are provided for the greatest number of casualties. If responsibility for medical treatment or evacuation of casualties is to remain that of the Army Medical Service, control of medical elements is not only desirable but mandatory. Flexibility of operations involving high degrees of mobility must be incorporated in all medical service units if adequate support is to be maintained. Basic life-saving methods must have high priority in the training of all personnel, regardless of component or grade, to compensate for the loss of time in providing treatment and evacuation caused by the requirement to disperse.

Increased skill and a possible moderate increase in the number of company aid men are essential to the treatment of casualties in forward areas under atomic attack. Any increase of company aid men must be critically evaluated on the basis of essential needs and availability.

Finally, any medical support to be designed for the future must be developed in such a manner that it serves the dual function of treatment and evacuation in the most expeditious manner possible, with the greatest emphasis upon the conservation of manpower.

By Lt Col Walter L. Miller, Jr.

THE 'R' OF CBR



Commanders and troops alike must know as much as possible about radiation and its effects.

Warfare has been a continuous evolution of the means with which nations defend themselves or impose their will on others. It has progressed at an accelerating pace from the destructiveness of a club to the mass-destruction capabilities of thermonuclear weapons.

Most weapons of war achieve their effects through the destructiveness of explosives and steel on men and materials. But several weapons, of a quite different nature, have evolved which have awesome effects on man and other forms of life. These are the chemical, biological and radiological weapons which we have combined into a comprehensive classification known as CBR warfare.

While the incapacitating or lethal effects of chemical agents are fairly well understood and the various possibilities of biological agents are generally appreciated, there still remains considerable ignorance and confusion concerning radiological effects—the "R" of "CBR."

Radiation and its effects became a major consideration in warfare with the advent of atomic weapons. In addition to the devastating blast and the heat generated by atomic explosions, nuclear radiation is produced which is highly

lethal to troops. This radiation is of two types—prompt and residual. *Prompt radiation* is that which lasts approximately 60 seconds after the explosion. *Residual radiation* is that given off by radioactive materials after an atomic burst, primarily through downwind fallout or radiation "induced" in the ground in the vicinity of ground zero.

Three types of burst are used in ground operations: air, surface and subsurface. The type of burst has considerable effect on the kind and amount of radiation (Figure 1). Surface and subsurface bursts give smaller radii of effects for prompt radiation but they produce more residual radiation and downwind fallout. Soon after the detonation of a surface weapon a huge circle of residual radiation is formed. This area includes heavy "fission" particle fallout, throwout and soil which has been made radioactive by neutron bombardment. Within a short time this radiation displaces over a much greater area, depending on the velocity and direction of the wind, and is a long-time or residual hazard.

An air burst produces greater prompt radiation effects but lesser hazards from

LT COL WALTER LEROY MILLER, JR., received his commission upon graduation from the University of Maryland in 1939. He entered active duty the following year and two years later received a Regular Army commission. Although he is now a Chemical Corps officer, Colonel Miller was an Infantry officer until 1949. He landed in Normandy on D-day with the 327th Glider Infantry and participated in the airborne invasion of Holland and the battle of Bastogne. Following the war he was an airborne command and test officer at Fort Bragg, and Assistant Professor of Military Science and Tactics at the University of Maryland. Colonel Miller was graduated from the Chemical Corps advanced course in 1950 and, following duty with the Chemical Corps Board at the Army Chemical Center, went to Korea as chemical officer of I Corps. He then returned to the Army Chemical Center where he served with the Munitions and Technical Divisions. Two years ago he was named chairman of the Chemical Committee in the Tactical Department of the Infantry School.

residual radiation and fallout. However, the circle of neutron-induced gamma radiation produced around ground zero by a low air burst must be considered.

At this point we should mention that it is technically possible to manufacture radioactive material that can be spread on the battlefield.

It is perhaps difficult for a combat soldier, accustomed to the usual sounds of battle, to fully realize and appreciate that this unseen force can do serious damage to himself and to those for whom he is responsible. Since radiation cannot be detected by the physical senses, its presence may be unknown to troops moving into an area, and unaware of its presence they would become casualties. The use of radiac (radioactivity detection, indication and computation) equipment is necessary for units operating in this kind of warfare. It is, therefore, important that troops have an understanding of the source of radiation and its effects. They must have adequate training in detection and in measures which can be taken to reduce the effects.

Having discussed briefly the sources, we should consider radiation effects. Figure 2 shows the probable effect of an acute dosage (received all over the body within a short period of time) of prompt radiation. Small doses, over a period of time, do not give any immediate or noticeable effects. However, accumulation of doses will create serious adverse effects within the body. The first signs of radiation sickness—headache, nausea,

Figure 1. Radiation sources and their effects.

SOURCES OF RADIATION

SOURCE	RADIATION EFFECTS
High air burst	Considerable prompt; no significant residual.
Surface or subsurface burst	Reduced prompt; great residual.
Low air burst	Great prompt; induced residual area at GZ.
Radiological agent	Residual only.

EFFECT OF PROMPT RADIATION ON BODY	
600 roentgens	Lethal dose for 100% of personnel exposed.
450 roentgens	Lethal dose for 50% of personnel exposed.
300 roentgens	Sick dose for 100% of personnel exposed.
125 roentgens	First visible signs of radiation sickness.

Figure 2. Effect of prompt radiation on the body.

vomiting and possibly some diarrhea—usually are observed when an individual has received 125 roentgens of radiation.[1] Three hundred roentgens is considered a *sick dose* for all personnel receiving it. However, 20% of those receiving this amount can be expected to die, and the remainder should rest for three months if they are to recuperate fully. Four hundred fifty roentgens is lethal to 50% of all exposed personnel, and 600 roentgens is viewed as a *lethal dose* to all personnel, although a few may survive after receiving this amount.

An individual subjected to a lethal dose may not be incapacitated immediately. Some time may elapse before sickness occurs. A soldier receiving 125 roentgens may not show signs of illness for several hours. This is important in combat since he could stay and fight during the immediate combat situation and then recover from the effects by resting for several days away from further exposure. However, in terms of long-range effects, he will always retain some radiation although this may not affect him adversely.

According to one theory, the body eventually will throw off all but 10 to 20% of the radiation received. For example, if a soldier who has received 100 roentgens today is allowed to rest for five days or longer without additional exposure, he could be expected to throw off all but possibly 20 roentgens. However, when next exposed this soldier would start with 20 roentgens rather than zero. Hence, radiation effects will continue to accumulate with each additional exposure. If sufficient dosage is built up he will become a casualty.

These figures indicate to the troop commander that he should avoid unnecessary exposure of his troops to radiation if he wishes to keep an effective outfit for any period of time. Troops operating on an atomic battlefield can be expected to receive a little radiation every day.

To hold down radiation effects the commander will establish a command dosage (CD). This is the radiation dosage which should not be exceeded during an operation. The CD, however, is only a guide. The commander does not want his troops to get this amount—it is his attempt to hold radiation to a minimum.

The CD established by a commander will depend on a number of considerations, such as the unit's mission, the importance of the mission, the past radiation history of individuals in the unit, the contemplated future employment of the unit, the casualties expected among troops when exposed to that level of radiation and the psychological impact on both the individual and the unit. For example, if a unit has not been exposed

[1]The roentgen is the international unit of measurement of ionization produced by X-ray or gamma radiation.

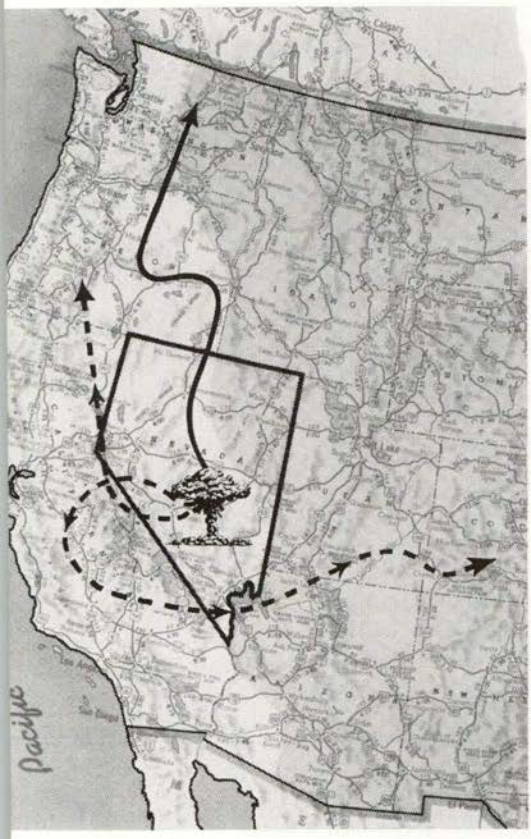


Figure 3. Fallout from an atomic test in Nevada. The solid line shows the predicted path; the dotted line traces the actual path.

to previous radiation, a CD of 50 roentgens might be set as the limit for initial exposure while carrying out a mission. (It is believed that an individual may take 25 roentgens of gamma radiation per week for eight weeks and still maintain operational efficiency.) Another unit which has been exposed to radiation several times might be directed by the commander not to exceed 10 roentgens in carrying out its mission, since any higher dosage might cause significant casualties. However, the combat situation may require the commander to increase the CD. If this happens, he must make plans to rotate these troops before serious adverse effects occur.

We have mentioned fallout radiation. While we always will try to predict the path of the fallout, this is a difficult thing to do for our own weapons, and even more so for enemy weapons. Figure 3 shows traces of fallout resulting from one of the test detonations in Nevada. The solid line shows the predicted path. The actual path could be determined only by radiac equipment.

Several detection and measuring devices are now organic to the pentomic Infantry division. Figure 4 shows an aerial monitoring team employing a dosimeter and a radiac set. The monitor is wearing the pencil dosimeter, known as the radiacmeter IM-93, on the jacket of his uniform. This dosimeter can be compared to the mileage indicator or odometer on a car—except that it measures total radiation received rather than miles traveled. It will measure up to 600 roentgens of accumulated radiation—a lethal dose.

The dosimeter can be read directly. The instrument is charged and its hairline indicator is adjusted visibly to zero on a 0 to 600 scale. Upon exposure to radiation, the instrument is discharged and the hairline moves across the face of the scale to measure the dosage received. Details on this type of instrument are given in TM 3-290, Individual Protective and Detection Equipment, and in Signal Corps TB 226-7, 6 June 1957. The dosimeter will be worn by selected personnel to measure the total radiation dosage (roentgens) received during an operation. It is authorized at platoon level.

To conduct radiological surveys and to determine the rate at which radiation is being received by personnel in a contaminated area, ion chamber dose rate meters (radiac sets) are available on the basis of one per rifle company. Again an

analogy can be made to the instruments on your car. The dose rate meter may be compared to the car speedometer since it measures the rate (or speed) at which radiation is being received in roentgens per hour.

Figures 4 and 5 both show the ion chamber AN/PDR-39 which measures up to 50 roentgens per hour. The AN/PDR-39 is battery operated, weighs approximately 11 pounds and has a 5-step variable scale which can be adjusted to obtain readings from 0 to 50 roentgens per hour. Details of operation of this type instrument are given in TM 3-290 and TM 11-5514-A. New instruments now under development will read up to 500 roentgens per hour.

The next consideration is the manner in which these instruments are used. Figure 6 shows a sketch map of an area in which an atomic surface burst has occurred. The commander of a unit operating in this area would send out trained monitoring teams to determine the actual fallout pattern.[2] Ground survey teams (Figure 5) in vehicles equipped with radios would be dispatched on

Figure 4. An aerial monitoring team. The monitor is wearing a pencil dosimeter (circled) and is holding a radiac set.

[2]The requirement is stated in DA TC 3-2, 1957.

Figure 5. A ground survey team.

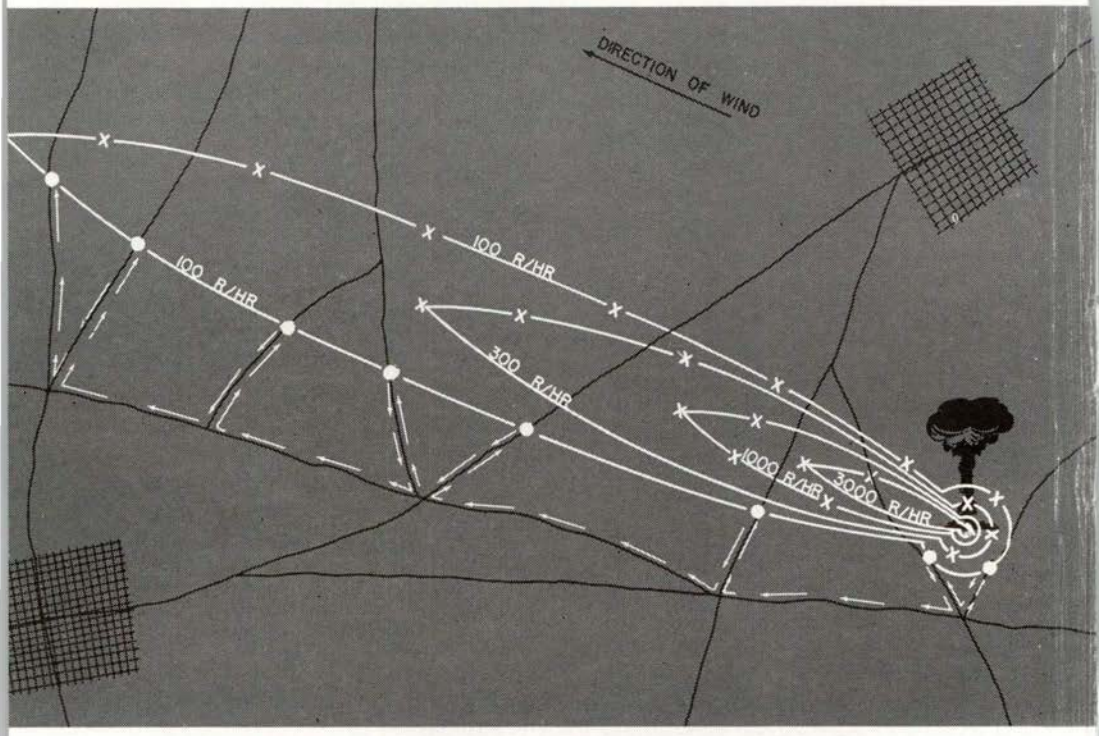


Figure 6. Schematic map of an area in which an atomic surface burst has occurred. The small arrows indicate the path followed by ground survey teams. The dots designate locations where the teams found 100-roentgen-per-hour readings. The X marks designate locations where the aerial survey teams found 100-roentgen-per-hour readings, to complete the picture of the fallout.

a prescribed route with a predetermined dose rate setting. For example, the commander may tell his teams to approach the area until they reach the 100-roentgens-per-hour dose rate reading. They would stop at this point and report its location and the time the reading was taken. The teams would then turn *and continue along* their route, reporting all other points where the dose rate readings are 100 roentgens per hour. These readings would be sent to a radiological survey control center, operating under the staff supervision of the G2 (S2), where they would be corrected to a common time (usually H+1) and plotted on a map to give the commander the 100-roentgens-per-hour line as shown in Figure 6. At the same time, aerial survey monitor teams (Figure 4) would be dispatched, also on a preselected route.

Figure 7. Radiation decay rates.

RADIATION DECAY RATES

TIME AFTER EXPLOSION	FALLOUT	INDUCED
1 hour	1.0	1.0
2 hours	.4	.9
4 hours	.2	.8
8 hours	.08	.7

These teams[3] would report their readings to the control center where they would be corrected to ground level readings and a common time, to give a more complete picture of the fallout area as shown in Figure 6.

The fallout pattern from a 20-KT surface-burst weapon (in a 15-knot scaling wind) at the 100-roentgen-per-hour line is approximately 11 miles long by three miles wide—a sizable hazard.

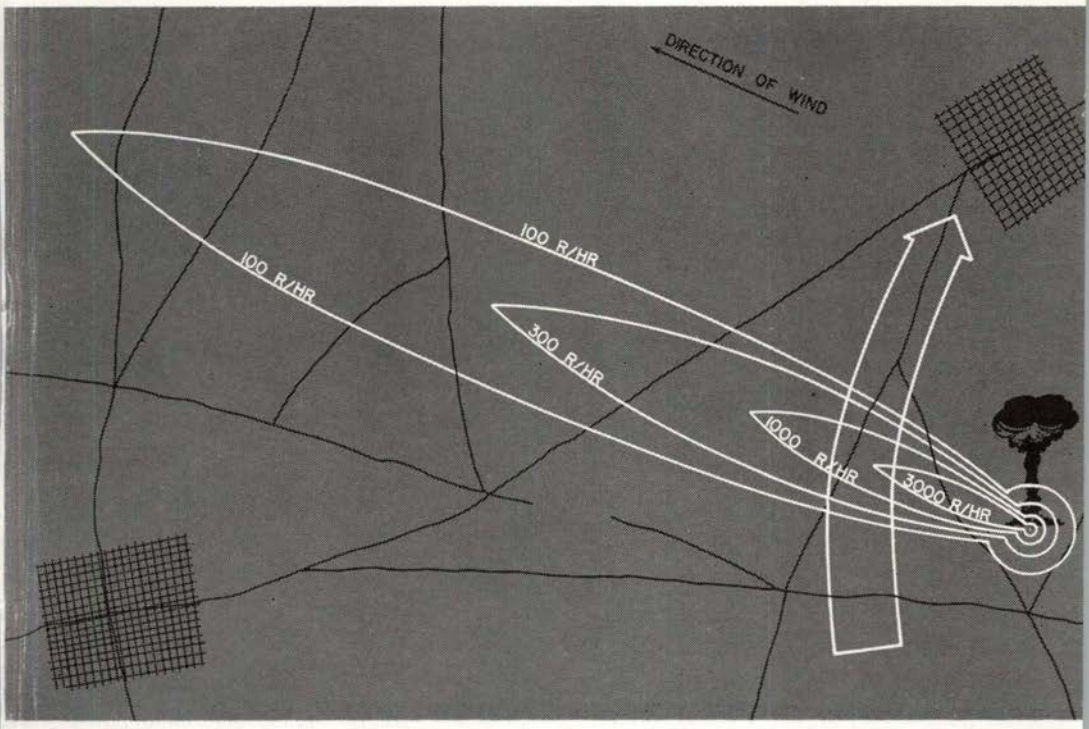
Once the commander has the survey picture, he can make possible airlift over it or bypass it. If he must enter and cross the area, the survey will enable him to make decisions as to time of entry, duration of stay and radiation effects he can expect on his troops. Figure 7 shows the decay rate of fallout radiation as compared to that of induced radiation.

Note that fallout radiation decays very rapidly. If the tactical situation permits a delay in entering the contaminated area, the radiation effects on individuals will be reduced. Induced radiation lasts much longer. If possible, this area (near ground zero) is best avoided.

If a unit must cross the contaminated area soon after the burst, the commander must take advantage of speed and the shielding effect of vehicles. Figure 8 shows a unit crossing a contaminated area two hours after an atomic detonation. The distance is 2½ miles and the troops move in Infantry carriers at a rate of 25 mph. In this crossing the

[3]The Chemical Corps is now forming a new unit at corps level, the Chemical Combat Support Company which will send a platoon to the Infantry division to assist the commander in conducting radiological surveys and other CBR matters.

Figure 8. Route taken by a tactical unit across the contaminated area two hours after the surface burst.



troops would receive relatively minor radiation dosage, approximately 19 roentgens. Decay of the radiation, shielding provided by the carriers and the speed of movement combine to reduce the dosage. Troops marching at 2½ mph would receive approximately 770 roentgens—a fatal dose. However, traveling in 2½-ton trucks, they would receive only 46 roentgens (approximate).

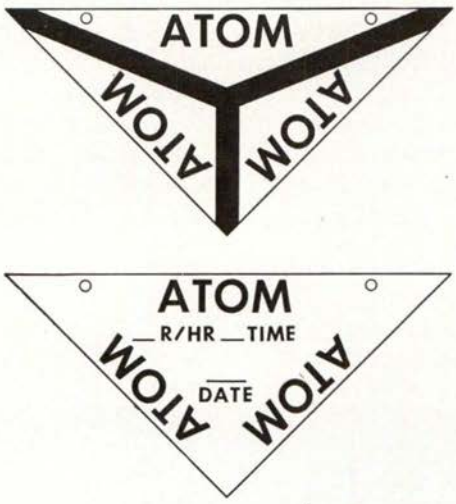


Figure 9. Radiation contamination marker. The top illustration shows the front side (faces out from contaminated area), and the bottom illustration shows the back side (faces in towards contaminated area).

By using charts and the survey pattern, the commander can determine the reading at any given spot at any time. Or he can take monitor reports and convert them to determine how long his troops could stay in the area without exceeding the command dosage. He would confirm the chart data with ion chamber dose rate readings obtained by troops in the area.

Also, he can calculate how much radiation dosage the troops will receive. Again the calculations would be checked against the dosimeters worn by personnel in the area to determine the actual dosage received while crossing the area. Speed in crossing a contaminated area is essential, and troops must take personal protective measures, such as buttoning up their clothing and staying in their Infantry carriers or other vehicles, to minimize exposure. If heavy dust is present, they should wear the mask.

After a unit has been exposed to radiation, decontamination of personnel and equipment is necessary. Troops can clean themselves and their personal equipment by brushing off the particles or by washing. Vehicles can be decontaminated by washing. Special precautions must be taken to remove the radiation particles that may have been trapped (similarly to persistent gas) in grease and oil. As a guide, personnel or equipment showing a reading on the survey instrument of 250 milliroentgens[4] an hour or more, should be decontaminated as soon as possible.

Decontamination should be checked by the use of the survey meter; the contamination must be entirely removed. Since the radiation thus removed will remain dangerous, the area in which decontamination is accomplished should be monitored. If dangerous, it should be marked with black and white atomic radiation contamination signs (Figure 9) so that the hazard can be avoided by other troops.

Commanders will have difficulty in conducting realistic training in radiological survey and monitoring due to the limited size of available radiation sources. Some units on the west coast of the United States have sent teams to Camp Desert Rock for training during atomic weapon tests. They have also used old radioactive craters created by test explosions. The Chemical Corps School at Fort McClellan, Alabama, has a radia-

[4]One thousand milliroentgens equal one roentgen.

tion field made up of radiological isotopes, which it uses for instruction. Since these areas employ actual radiation, the maintenance of individual records on radiation received is necessary.

A new device which should greatly improve training is the Radiation Survey Training Set Device 48E1A. This is a radio transmitter which emits a signal to 10 radio receivers. The receivers are constructed to look like the ion chamber. With this device the unit commander can establish a simulated radiation field and train his survey teams without the hazards associated with exposure to actual radiation. Details of this training set are contained in DA Pamphlet 310-5, 1 May 1956. These sets should be available in the near future through Army training aid subcenters.

The best protection against radiation (also against blast and heat), immediately available to the Infantryman, is his fighting hole in the ground. The prompt radiation received in the familiar open foxhole will be approximately one-tenth of the outside dosage. For example, 100 roentgens in the open will be reduced to 10 roentgens in the hole. However, the individual should be well below the lip of the foxhole for maximum protection.

A foxhole with 1½ feet of overhead earth cover will reduce prompt radiation to approximately three one-hundredths of that received on the outside. A 100-roentgen outside dosage will be reduced to 3 roentgens within a covered hole. There is an even greater reduction in residual radiation. In the covered foxhole residual radiation will be three one-thousandths of the outside dosage. One hundred roentgens in the open will be reduced to three-tenths of a roentgen.

If troops must remain in a contaminated area, they should dig in to reduce radiation effects. Earth provides an excellent shield—it is the commander's responsibility to see that his men use it.

We have no way of knowing whether chemical and bacteriological agents will be used in future warfare. They were not used in World War II and Korea. However, it is known that thermonuclear weapons are likely to be employed. Our defense forces are being organized and equipped for warfare in which they will be used. And if they are, we will need to know as much as possible about the "R" of "CBR."

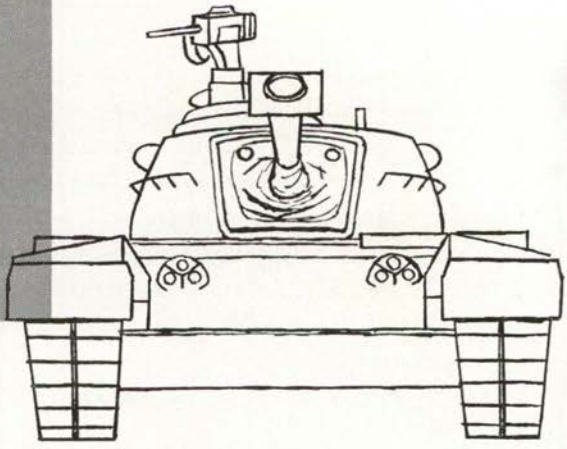
CBR weapons may well appeal to an aggressor. The use of nuclear weapons on an indiscriminate basis would undoubtedly destroy facilities which were the object of an enemy's aggression, or at least render them worthless for postwar use. To make his aggression worthwhile, these highly coveted productive facilities would have to be reasonably intact at the end of hostilities.

To achieve this result, the enemy could use CBR munitions which would attack only people. By causing death or merely debilitating illnesses among industrial workers, their productive capacity would be lost or severely limited. And with this decrease in production, the Free World's armed forces would soon become seriously weakened through the lack of munitions, equipment, food, medical supplies.

MAJ GEN WILLIAM M. CREASY
Chief Chemical Officer, Department of the Army

BATTLE

The past two issues of INFANTRY *described the actions of the pentomic rifle company in the attack and the defense. In this article we will observe a battle group, mounted in Infantry carriers and supported by tanks, in the planning and conduct of an offensive operation. We will see how detailed planning, prompt decisions and vigorous execution of the attack will promote success on the atomic battlefield. In the next issue we will look at the battle group in a defensive situation.—Editor*



By Lt Col Albert H. Smith, Jr.

GROUP IN THE ATTACK

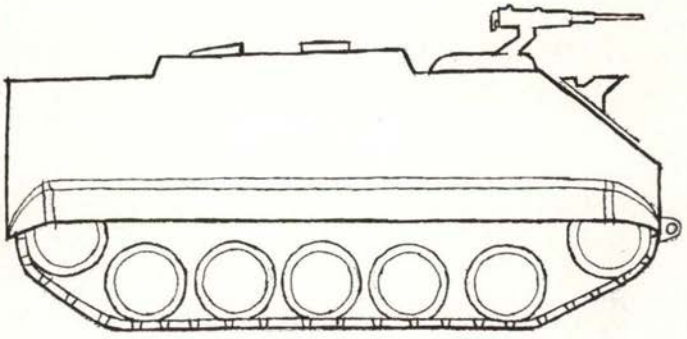
We take a look at the actions of the battle group in the offense

By this time we should be familiar with the major revisions in tactical doctrine which have resulted from the expected requirements of atomic warfare. Of great importance are the ways in which these new techniques are applied—the methods Infantry commanders will use to employ their units on a battlefield of the future. Before taking a look at the battle group in an attack situation, it would be well to review briefly some basic offensive principles.

Although the organizational structure, armament and tactical employment of the battle group are new, and in some respects revolutionary, the mission of this unit is the same as that of the old Infantry regiment: *to close with and destroy or capture the enemy*. To perform this mission, the battle group uses a combination of firepower, maneuver and shock action. On the atomic battlefield it conducts mounted or dismounted operations, depending on the mission, the terrain and the availability of Infantry carriers. Since we are probably more familiar with dismounted operations, this discussion will concentrate on the factors involved in the conduct of a mounted attack.[1]

Because of the large circular effects area of atomic fires and the resultant need for presenting the least profitable target, battlefield posture generally is based on a column formation. The battle

[1]A discussion of mounted and dismounted operations for the battle group may be found in the July, 1957, issue of *Infantry*.



group may attack on a single axis or on multiple axes. However, if more than one axis of advance is employed, the axes must be far enough apart to prevent massing; and yet they must be close enough together to prevent defeat in detail. Seldom should more than two axes be used, since such a formation will tend to reduce flexibility, disperse fire support and present problems of command and control. To provide maximum freedom of action for company commanders and to avoid the formation of lucrative atomic targets, intermediate objectives are kept to a minimum and are used only when necessary to coordinate and control the attack or to seize vital terrain. The rifle companies move as close as possible to the objective before beginning the assault. Following the engagement and destruction of the enemy forces, the companies quickly disperse and secure the objective or move forward rapidly to continue the advance. Great emphasis must be placed on maintaining the momentum of the attack. Specific halts for reorganization are avoided, since such action would tend to form ideal targets for enemy atomic weapons.

Terrain permitting, one or more tank companies normally will be attached to the attacking battle group. The tanks are used to spearhead the advance and generally are employed in the assault echelon. The assault gun platoon, equipped with four M-48 tanks which mount 90mm guns, is used primarily for antitank action. Screening missions for the battle group are conducted by the reconnaissance platoon.

Another addition to the tactical strength of the battle group is the mortar battery. The battery has two platoons, each with four 4.2-inch mortars. Forward observers are furnished to the four rifle companies by the battery, and the battery commander acts as fire support coordinator for the battle group. While usually held in general support, firing platoons of the battery may operate in a direct support role when the battle group is attacking on multiple axes. The fires of the mortar battery and the fires of all supporting weapons are planned and integrated with the available atomic fires, which may range from 2 KT to 100 KT. The battle group fire support plan, including atomic and nonatomic fires, is developed concurrently with the plan of maneuver. We are now ready to take a look at the battle group in the planning and conduct of a mounted attack.

Following atomic preparation, the division is to attack at 0700 hours, D-day, to seize communication center Lima and the high ground to the north and south of town (Figure 1). The division is to be prepared, on order, to continue the attack to the east or to assist the passage of an armored division. Enemy dispositions are as shown. An aggressor mechanized regiment can reinforce defending troops at Lima four hours after initiation of its movement. The weather is clear. During the past week frequent light rains have dampened the area of operation; however, no precipitation is forecast for D-day. An excellent road net exists throughout the zone. The use of atomic weapons in forested areas will cause considerable obstacle to movement. Otherwise, there should be little restriction to cross-country operation. The division preliminary plan of operation is as shown, with two mechanized attacks on Axes November and Sierra and the dismounted attacks by battle groups between these axes. The battle group on Axis Sierra is making the main attack.

In addition to this, the commander attacking on Axis Sierra receives the following directives, information and support.

1. *Mission:* Following atomic preparation, attack 0700, D-day, on Axis Sierra and seize high ground south of

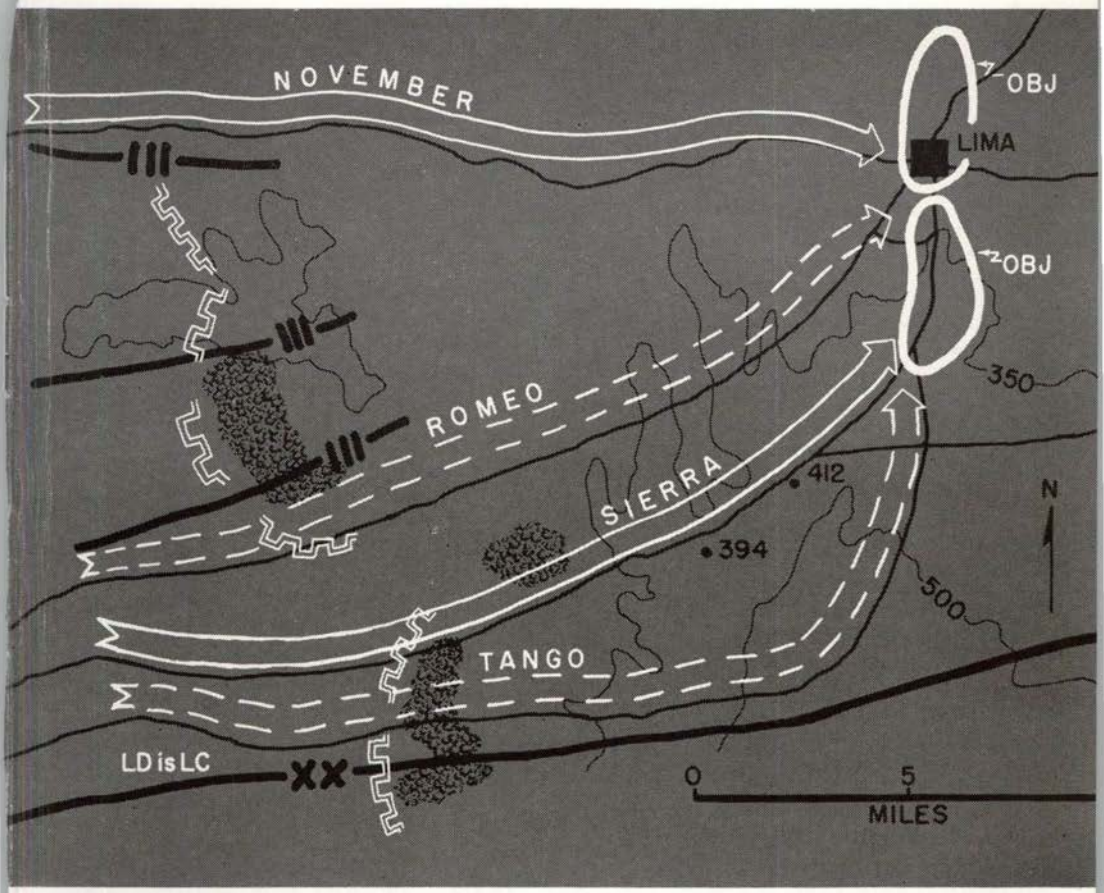


Figure 1. Schematic situation map. Axis Sierra has been assigned by the division commander. Axis Romeo and Axis Tango are being contemplated by the battle group as additional axes of advance to the objective.

Lima. Be prepared, on order, to continue the attack to the east or to assist passage of armored division.

2. *Attached:* Companies D and E, Medium Tank Battalion; Troop A, Reconnaissance Squadron; Companies B and C (Armored Carrier), Transportation Battalion; combat support flight (augmented by three observation airplanes and three reconnaissance helicopters).

3. *In Support:* Company E, Engineer Battalion. Armored FA battalion is in general support in the zone. One 105mm howitzer battery reinforces the mortar battery.

4. *Atomic Weapons:* A maximum of two atomic weapons may be made available for scheduled fires in the zone. Yields from 2 to 100 KT are available. Also two 2-KT, cannon-delivered, on-call atomic weapons are allocated to support the attack. Authority to fire is delegated to the battle group commander. These allocated weapons are available—on call —after initiation of the attack. Minimum delivery time is 15 minutes after request for delivery is made.

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After receiving the division plan, the battle group commander analyzed his mission, formulated a preliminary plan, issued a warning order, completed as much preliminary coordination as possible, and then made a reconnaissance by helicopter, accompanied by selected members of his staff. It is now 1100 hours, D minus 1. The reconnaissance party has returned to the command post and staff members are completing their estimates and recommendations.

The battle group S3 has decided (1) to select company-size objectives in the final objective area; (2) to list the practical courses of action; (3) to determine the number of scheduled atomic weapons required to support each course of action; (4) to analyze these courses of action, considering the mission, enemy, terrain, available means and the atomic support required in order to arrive at sound recommendations for the battle group commander. Here is a summary of the S3's thought processes:

Final Objectives: From his analysis, S3 concludes that four company objectives should be designated to insure seizure and control of the objective which has been designated by division. These objectives are dominant terrain features.

Practical Courses of Action: Division assigned Axis Sierra, since this is an excellent avenue of approach to the objective area. There are also acceptable avenues of approach in the northern and southern portions of the zone. Six combat units are available to participate in the attack: four rifle companies and two tank companies. With atomic support available to open holes in enemy forward defenses, the four courses of action listed below appear practical. They are certainly worthy of more detailed analysis.

Course of Action 1: attack in a column of companies along Axis Sierra. Course of Action 2: attack with two companies, right company along Axis Sierra and left company along Axis Romeo. Course of Action 3: attack with two companies, left company along Axis Sierra and right company along Axis Tango. Course of Action 4: attack with three companies, center company along Axis Sierra, left company along Axis Romeo, right company along Axis Tango.

Number of Scheduled Atomic Weapons Required: Course of Action 1 will require one atomic weapon. Course of Action 2 and Course of Action 3 each require two atomic weapons. Course of Action 4 requires three atomic weapons. Each course of action calls for the breaching of enemy forward defenses by scheduled atomic fires. Additional atomic weapons must be expended for the additional holes which must be opened.

Analysis: An analysis of the practical courses of action boils down to this: Should the battle group attack along a single axis, along two axes, or along

three axes? It does not appear to S3 that factors favoring an attack along one axis are present in this situation. On the other hand, in analyzing Courses of Action 2 and 3, it appears that all conditions favoring an attack along two axes are present. Favorable factors are as follows: width of zone and road net are adequate; rapid movement is accomplished; enemy situation is reasonably clear; adequate atomic and nonatomic fires are available; axes are far enough apart to provide a degree of passive protection against enemy atomic fires; and axes are close enough for reinforcing one column with the other to prevent defeat in detail. S3 next considers Course of Action 4. Immediately obvious is the fact that the battle group will be vulnerable to defeat in detail. Spread out along three axes, both the attacking and supporting units will lack sufficient combat power to reduce enemy resistance. Furthermore, such a formation requires the use of an additional atomic weapon to breach the enemy defenses. S3 concludes that this is the least desirable course of action.

Having decided that a two-axis attack is the most desirable course of action, S3 compares the potential northern axis (Romeo) with the potential southern axis (Tango). Use of the northern axis (Romeo) in conjunction with Axis Sierra is favored because it is 2.5 miles shorter than the southern axis; the northern axis provides more maneuver room; a greater degree of mutual support between division axes is possible; and terrain favors the enemy defenses less in the north than in the south. Everything considered, S3 concludes (and recommends) the best course of action is to attack with two companies, the right company along Axis Sierra and the left company along Axis Romeo. On the other hand, S3 recognizes that Course of Action 1 (attack in a column of companies) may have to be adopted if the scheduled atomic fires in the zone of the battle group are reduced in number.[2] S3 then checks his recommended plan of maneuver with a tentative fire support plan (Figure 2). Scheduled atomic weapons fired to breach enemy defenses along the southern axis will present a considerable obstacle to movement as a result of blowdown and forest fires. At the same time, a quick look reveals that atomic weapons may be detonated to open holes along axes Romeo and Sierra without restricting movement. Nonatomic fires would be placed on all known enemy dispositions not covered by atomic effects. In other words, plans of maneuver and fire support must be integrated and developed concurrently.

The battle group commander approves the recommendations of his S3. Subsequently a message is received from division confirming the availability of two scheduled atomic weapons to support the battle group plan of maneuver. The commander and his staff continue to work out details of the attack plan. The battle group commander instructs his S3 to work with the fire support coordinator and develop detailed recommendations with regard to scheduled atomic weapons. In addition to analyzing the possible courses of action, the planning group must make recommendations concerning the DGZ, yield, delivery means and height of burst for each of two scheduled atomic weapons. Other planning considerations include control measures during the attack; organization for combat; order of movement on each axis; missions for Troop A, Reconnaissance Squadron and the battle group reconnaissance platoon; and security missions, if any, to be assigned to other units.

[2]Battle groups may often be required to attack without atomic support or with the support of one atomic weapon only.

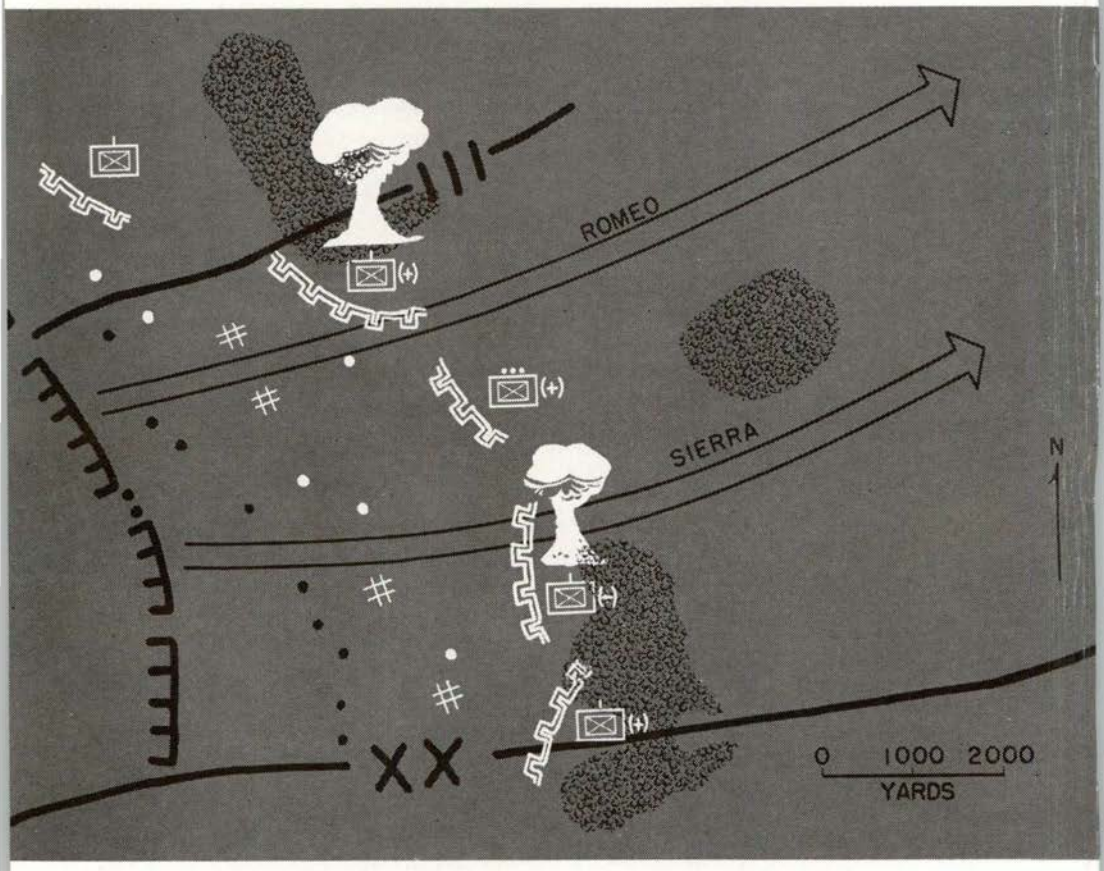


Figure 2. Atomic Fire Plan. Having decided to attack along axes Sierra and Romeo, the battle group commander plans two low air bursts to eliminate initial enemy resistance.

Scheduled Atomic Fires (Figure 2): Troop safety considerations limit the size of weapon A (Axis Sierra) to a 2-KT or 10-KT yield, cannon delivered. The latter is selected because maximum casualties are desired. From the standpoint of troop safety either a 20-KT yield or a 50-KT yield could be selected for weapon B (on Axis Romeo). Again, considering neutralization of the enemy company position dominating Axis Romeo, the additional casualty-producing effects of the larger weapon are not required. The 20-KT yield is chosen to reduce blowdown and residual contamination. A low air burst will be used for all weapons. Casualty radii against troops in covered foxholes and damage radii against heavy equipment are greater with a low air burst than with a high air burst. Cannon delivery is preferred because of its inherent accuracy, but rocket delivery could be used for weapon B.

Control Measures: S3 recommends minimum control measures consistent with coordination requirements. His objective is maximum freedom of action for the attacking company commanders. The designated line of departure and time of attack will insure that the various maneuver and fire support elements of the battle group are committed at the

desired time and place. S3 also concludes that recognizable terrain features crossing both axes should be designated as phase lines. These will then be available as ready references, to control and coordinate the rate of advance, if required. Unless otherwise prescribed, these control measures will serve as nonstop reporting locations. Check points are designated along general routes which are to be followed by reconnaissance units. These points will be used to report locations or to control movement. Contact points are designated between each reconnaissance route and the adjacent axis of advance. Attacking companies and reconnaissance elements must make physical contact at these points. A battle group forward assembly area and/or company attack positions are not prescribed. Movement directly from dispersal areas to and across the line of departure will reduce vulnerability to enemy atomic fires. Intermediate company objectives are not recommended as initial control measures, because they tend to restrict freedom of maneuver of subordinate units and tend to cause massing.

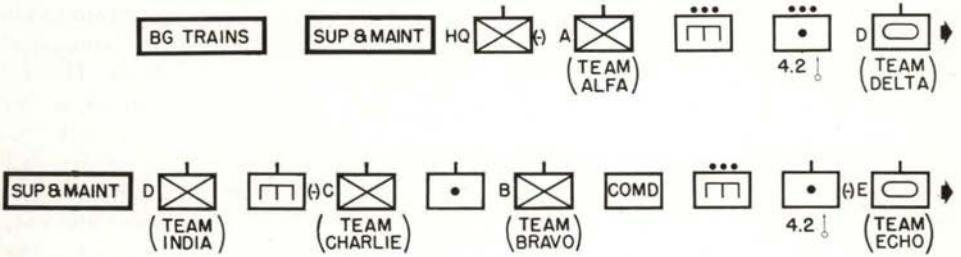
Organization for Combat: Companies D and E of the Medium Tank Battalion, when employed as units, constitute powerful additional attacking forces. S3 therefore recommends the formation of six company-size teams. This solution—as opposed to attaching all tank platoons to rifle companies—affords greater flexibility. S3 also believes that lead elements on each axis should be strong in tanks. However, because of the possibility of early commitment, the second company on each axis should have some tanks attached. In recognition of the length of the column on Axis Sierra and the need for antitank defense in depth, one section of the assault gun platoon is attached to each reserve company not receiving other armor attachments. To provide for speedy seizure of the objective area, S3 recommends that the attack along Axis Sierra be weighted, since this axis provides the most favorable approach to the dominant terrain in the objective area. With these considerations in mind, S3 recommends that the following organization for combat be adopted.

Axis Romeo (two teams): *Team Delta*—a company of tanks (less one platoon) and a platoon of Infantry; *Team Alfa*—a company of Infantry (less one platoon) and a platoon of tanks.

Axis Sierra (four teams): *Team Echo*—a company of tanks (less one platoon) and a platoon of Infantry; *Team Bravo*—a company of Infantry and a platoon of tanks; *Team Charlie*—a company of Infantry and the assault gun platoon (less one section); *Team India*—a company of Infantry (less one platoon) and a section of the assault gun platoon.

Order of Movement (Figure 3): As previously mentioned, leading off with

Figure 3. Order of march. *Top:* Axis Romeo. *Bottom:* Axis Sierra.



the two tank-heavy teams will provide a greater degree of combat power forward and should promote a more rapid movement toward the objective area. Indirect fire support can be provided rapidly and effectively only when artillery is well forward. This accounts for the placement of mortar elements immediately following the lead companies. Progress of tanks and mechanized Infantry very often depends on the availability of engineers to assist in breaching obstacles. An engineer reconnaissance party will move with the lead company on each axis, followed closely (after the mortar platoons) by parent engineer platoons. The march command post, with both carrier and helicopter lift available, is located well forward. This enables the battle group commander to keep abreast of the immediate situation, while at the same time placing him where he can expeditiously commit his reserve(s). He is located on the main attack axis. Headquarters Company (-) is placed on Axis Romeo to provide additional control over this column if required. This disposition of the headquarters elements also provides an alternate command organization to replace the command group, should the latter be lost to enemy action. Other units are integrated into the column based on their mission, contemplated employment and security considerations.

Security Missions: Of the two open flanks, enemy forces in the south would pose the greatest threat to the accomplishment of the mission. For this reason, S3 recommends that Troop A protect the right flank. The reconnaissance platoon is capable of operating on the battle group left flank between the division axes. It also appears advisable to place a unit between Axis Sierra and Axis Romeo to provide warning in the case of enemy forces positioned or moving between the battle group axes. S3 concludes that a reinforced platoon from the third company in column is adequate to perform this task. The combat support flight will fly observation missions over each axis, and observers will be provided by battle group headquarters. In addition, the flight will support each of the following with one reconnaissance helicopter and will coordinate with the commanders concerned: command group; headquarters; reconnaissance platoon; and Troop A, Reconnaissance Squadron.

Deliberate planning has set the scene for a successful attack. Vigorous execution will insure seizure of the objectives.

Time is D-day. The atomic preparation is accurately and effectively delivered in the zone. Thereafter, nonatomic fires maintain a neutralization of enemy forward defenses. Attacking companies cross the line of departure at 0700 and advance rapidly through dazed and disorganized defenders. At 0800 lead elements of Team Delta are halted by a minefield covered by antitank and automatic weapons fire from high ground to the northeast (Figure 4). Aerial Observer Romeo reports an estimated 20 riflemen, supported by two tanks and several machineguns. The mortar battery commander reports the mortar platoon following Team Delta has left the road and is going into firing position. The battle group commander monitors these reports. At 0815 lead elements of Team Echo come under heavy direct and indirect fire from enemy forces located on Hill 394. One tank is destroyed and one loses a track as a result of enemy antitank fire. Captain, Company E, reports he is fully deployed and is returning the fire, but is unable to advance. He requests additional fire support. Aerial Observer Sierra reports to Captain, Company E, and the battle group commander that approximately one reinforced enemy company is occupying defensive positions on Hill 394 and has four dug-in antitank guns. Figure 4

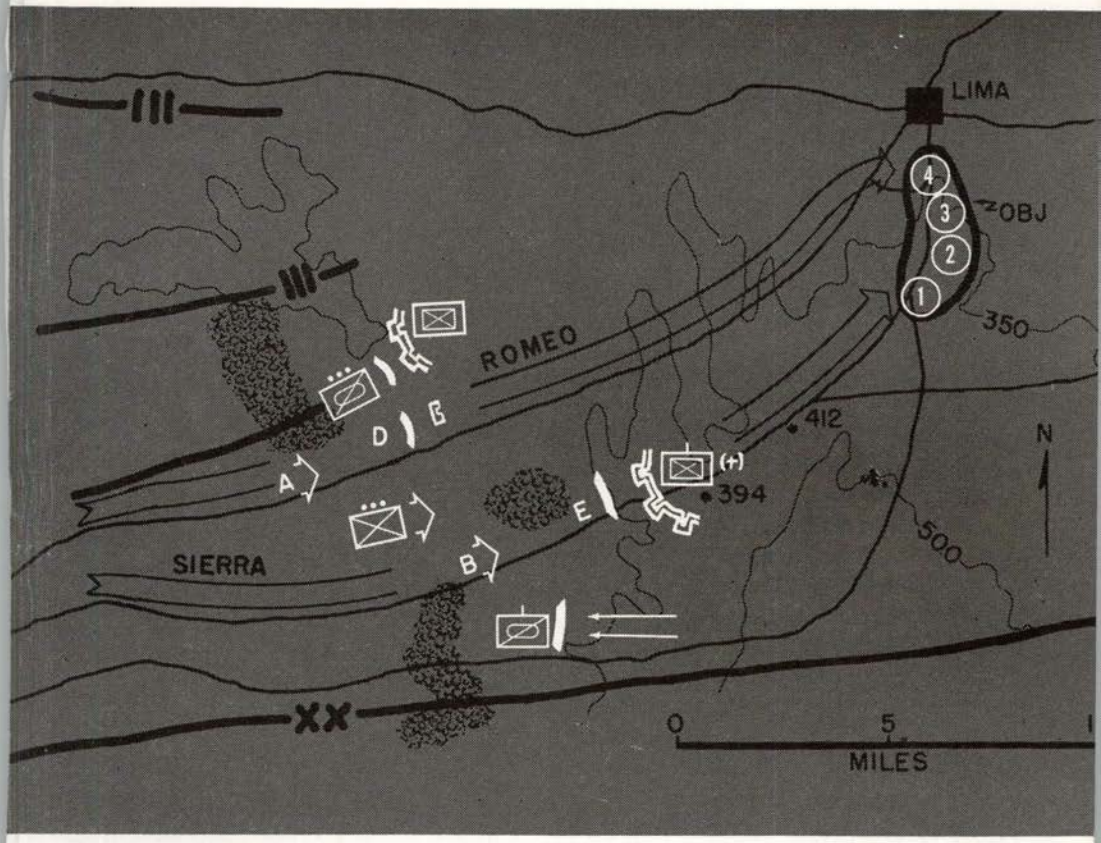


Figure 4. Conduct of the attack. The battle group commander finds his attack stopped on both Axis Sierra and Axis Romeo.

reflects the situation as of 0830, including dispositions of reconnaissance units.

The battle group commander finds his attack along both axes temporarily halted. Speed of movement forward is essential both to the accomplishment of the mission and to survival. Several feasible courses of action are open: bypass the enemy on Hill 394 and continue the attack with Team Bravo; eliminate the enemy resistance by a coordinated attack of Teams Echo and Bravo against Hill 394; or eliminate enemy resistance by using atomic fire and continue the attack with Team Echo.

Since Hill 394 dominates the zone, its retention by the enemy jeopardizes any maneuver to bypass to the north or south. There is no friendly progress on either flank of advance elements on Axis Sierra, and enemy capabilities in these areas are in doubt at this time. A coordinated attack by Teams Echo and Bravo against enemy forces on the hill should succeed. However, it will take 40 to 60 minutes to get Team Bravo into position to assault either the north or south enemy flank. The additional time and concentration involved make this course of action vulnerable to hostile atomic reaction. The use of one of the two allocated on-call 2-KT atomic weapons offers a

more rapid means of restoring the momentum of the attack. With the authority to fire and the planned firing data, the enemy force can be hit within 15 minutes following the request for delivery. A flash message must effectively warn the troops, and the safety requirements must be met. A rapid exploitation by Team Echo will breach the enemy position shortly after 0900. The mission and situation dictate a rapid sweep through the target area—as opposed to the seizure of Hill 394. The battle group commander requests delivery of a low air-burst, 2-KT atomic weapon on the enemy force which is holding up Team Echo. He decides that the enemy situation facing Team Delta is within that unit's capability. A personal urging should get the attack along Axis Romeo rolling again.

The atomic weapon is delivered at 0850 hours. Team Echo advances rapidly through the gap created in the enemy defenses, followed by Team Bravo and other Axis Sierra units. With mortar support, Team Delta breaches the minefield and assaults and destroys the small delaying detachment which was blocking Axis Romeo. The battle group continues its advance along both axes. By 0915 the colonel is beginning to feel optimistic about the situation when an explosion knocks him down. He is bruised and dazed, but otherwise unhurt. Reports from all sources within the next few minutes indicate that an estimated 10-KT yield weapon has been exploded as an air burst near the center of Team Bravo's column. The battle group commander dispatches the executive officer to determine the extent of damage, organize rescue operations and reorganize survivors; directs the S3 to reroute Team Charlie and the remainder of Axis Sierra units around the atomic effects area without delay; notifies the commanding general; and requests that division evacuate the casualties.

Following an atomic attack on friendly units, top priority is given to reuniting survivors with serviceable weapons to form a fighting force. This normally requires the presence of a senior leader, sent in from an unaffected area. The logical person, in this case, is the battle group executive officer. He can make decisions and take necessary action. He can also give the colonel a balanced appraisal of the situation. There are several reasons why the column should bypass the atomic effects area and continue forward without delay. First and most important, the mission dictates the presence of a ready reserve to maintain the momentum of the attack. Secondly, speed of movement and morale will be helped by going around the devastated area on clear routes. Finally, rescue and reorganization operations will be facilitated if no additional forces are moved through the area. The division commander needs to know what happened and how the atomic explosion affected the capabilities of the battle group. Mass evacuation of casualties following an atomic attack is division's responsibility. Elements of the medical platoon, headquarters company, will be fully occupied by evacuation of other battlefield casualties.

The dispersed columnar formations and the armor protection afforded by the carriers reduce to a minimum the casualties resulting from the enemy weapon. Nevertheless, the equivalent of a company is lost.

The 1st Platoon of Company B is found to be operational, and it is attached to Team Echo and directed to join that unit without delay. The tank platoon formerly leading the Team Bravo column is attached to Team Charlie.

At 0930 Team Echo attacks what appears to be a weak enemy delaying force on the slope of Hill 412 (Figure 5). Once in close contact, the company commander reports he is fighting a strong

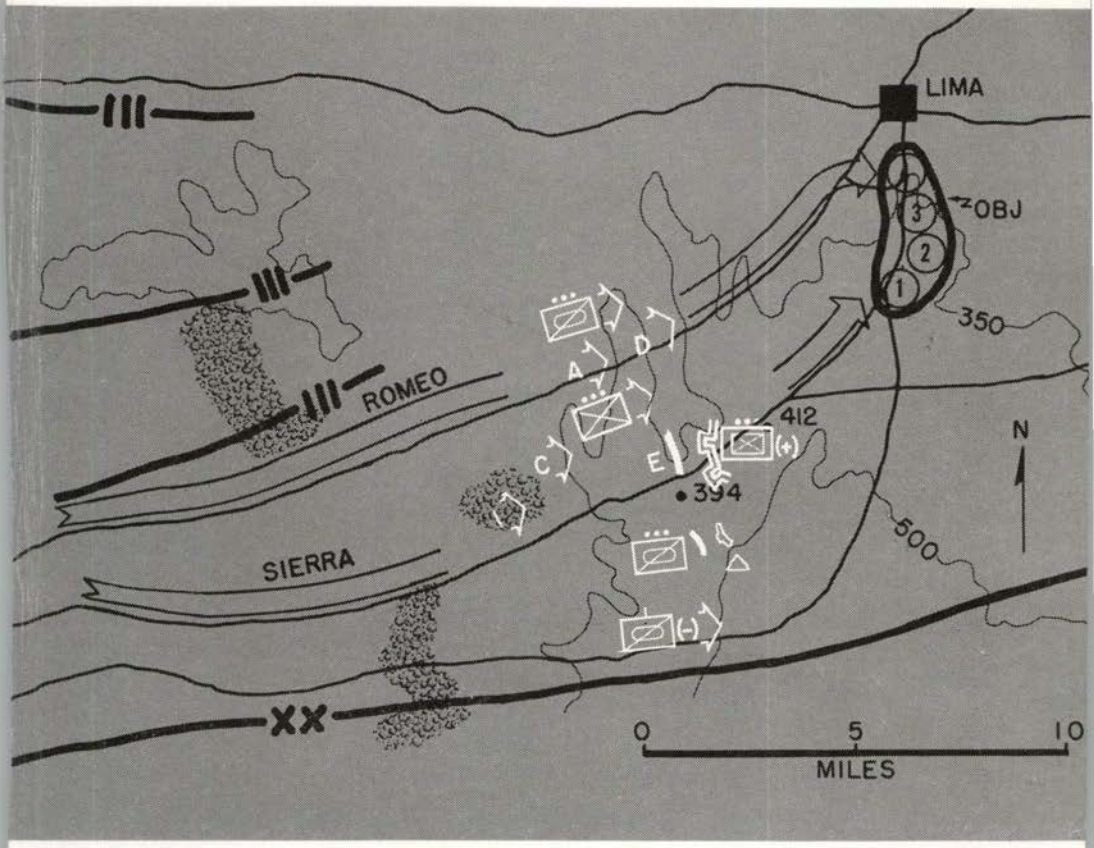


Figure 5. Conduct of the attack. Lead elements of Axis Sierra meet enemy resistance near Hill 412.

point of dug-in tanks protected by considerable Infantry. Air Observer Sierra reports that he can see five tanks and about 50 riflemen deployed near Hill 412. No other enemy is detected in the immediate area. Captain, Team Echo, notifies the battle group commander that he can handle the situation, but needs his first platoon. According to his estimate, it will take about one hour to eliminate enemy resistance. In answer to a query of the colonel, Captain, Team Echo, reports his elements in contact cannot disengage without heavy casualties. Team Delta is moving forward against weak enemy delaying detachments.

In addition to continuing the attack along Axis Romeo with Team Delta, the battle group commander sees four possible courses of action. Course of Action 1: attack with Team Echo to seize Hill 412. Course of Action 2: employ a 2-KT atomic weapon against the enemy forces on Hill 412, and continue the attack along Axis Sierra with Team Echo. Course of Action 3: attack with Teams Charlie and Echo to seize Hill 412. Course of Action 4: bypass to the left (north) with Team Charlie to seize Objective 1, and at the same time attack with Team Echo to seize Hill 412.

In analyzing this situation, the battle group commander decides that Course of Action 1 is too slow and invites atomic

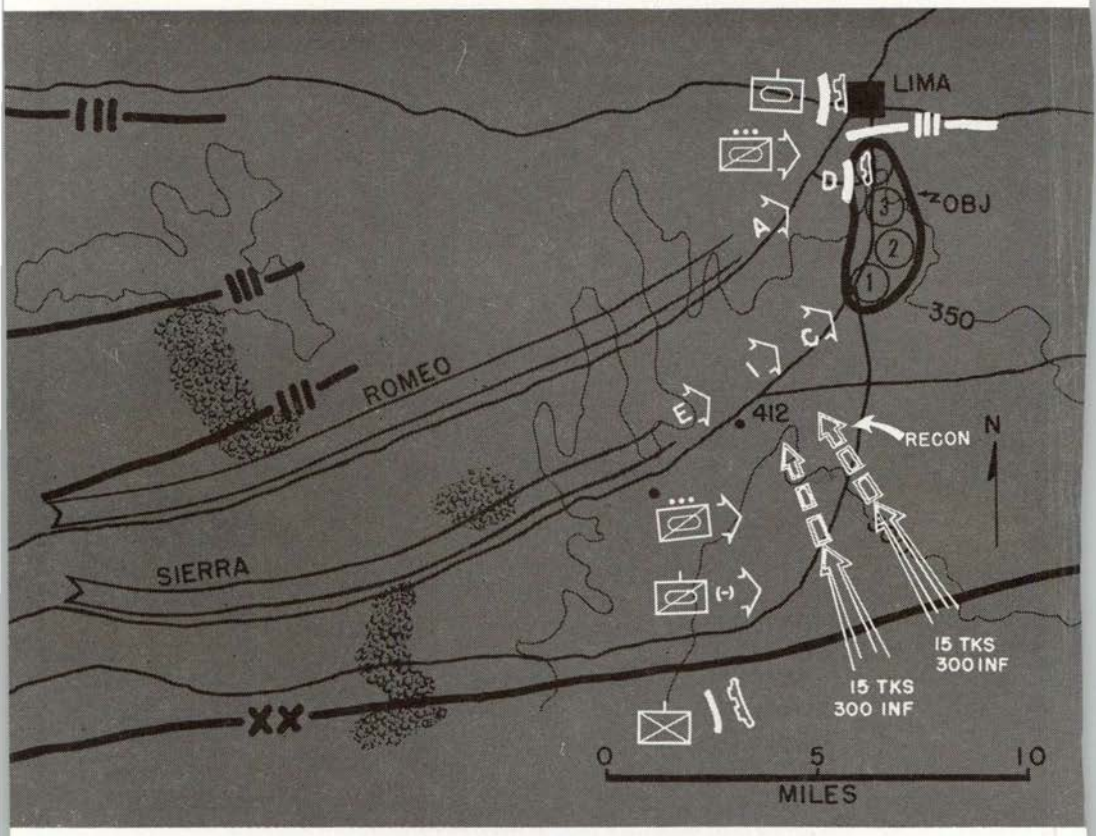


Figure 6. Conduct of the attack. The attack along Axis Sierra is threatened by two enemy tank-Infantry columns.

reaction by the enemy. Course of Action 2 is not feasible, since atomic safety requirements cannot be met without a time-consuming withdrawal. Course of Action 3 has several major disadvantages. It would take considerable time to put into effect and would require the massing of two companies. Course of Action 4, the colonel decides, has many advantages. It promises to be the fastest way of getting Axis Sierra forces to the objective. Bypassing to the north instead of the south will exploit friendly success, avoid known enemy strength and take advantage of present dispositions. In his final evaluation of Course of Action 4, the battle group commander still has some doubts concerning the attack against Hill 412. However, the following advantages cannot be overlooked. This attack, as a secondary effort, will assist Team Charlie. The enemy force, if not engaged, could continue to harass and delay the friendly forces. Team Echo seems to have sufficient combat power to defeat the enemy. In any case, it should be able to effect a containment. The battle group commander issues the necessary orders to implement Course of Action 4. He commits his reserve to maintain the momentum of the attack and to exploit success.

The following reports reach the battle

group commander at the times indicated and are shown in Figure 6.

1040 hours—from Team Echo: "Have seized my objective and destroyed enemy force. Am reorganizing. Can move out in five minutes."

1045 hours—from Aerial Observer 1: "Can observe enemy recon units moving north. Enemy tank columns have also turned north. Estimated rate of advance is 8 mph. Smoke restricts observation."

1053 hours—from Team Delta: "Am attacking enemy on Objective 4."

1054 hours—from Aerial Observer 2: "Estimated three SP antitank guns and 100 Infantry on Objective 4."

1055 hours—from Aerial Observer 1: "Two enemy tank columns still heading north. Columns are following same route as recon units. Estimated rate of advance is now 6 mph."

Urgent requests are made for close air support missions against the tank columns, but they are denied due to nonavailability of aircraft. Nonatomic fires are directed on the enemy forces in coordination with the adjacent division. However, smoke hinders adjustment and thereby reduces the effectiveness of the fires. It is now 1100. Again the colonel is faced with a battlefield situation which demands a sound and rapid decision. The enemy tank-Infantry forces pose a great threat to the battle group. They can inflict heavy casualties and prevent accomplishment of the mission. The battle group commander considers several practical courses of action to deal with this threat. Course of Action 1: defend to the south with Teams Charlie, Echo, and India. Course of Action 2: defend to the south with Teams Echo and India, while continuing the attack with Team Charlie. Course of Action 3: defend to the south with Team Echo, while continuing the attack with Teams Charlie and India. Course of Action 4: employ an on-call atomic weapon against the enemy column in conjunction with any of the courses noted above.

The colonel realizes the quickest way to meet this threat to his flank is through the rapid employment of an atomic weapon. A 2-KT low air burst, while somewhat limited in coverage, can be accurately and quickly delivered. Furthermore, this is the only course of action which permits a strong attack to continue along Axis Sierra. Leading enemy elements are definitely located. They are approaching in two columns. Infantry are exposed on the backs of tanks. The projected routes and the estimated rate of advance are available. A rapid computation by the staff indicates a 2-KT weapon can be employed with effect to destroy lead elements and slow the advance of each column. Also, troop safety requirements can be met. The decision must be made now or the opportunity will be lost. The battle group commander decides on Courses of Action 3 and 4. Since Team Delta is attacking a strong enemy force, the colonel prepares Team Alfa for early commitment. Seizure of Objective 3 (which appears to be unoccupied) will greatly assist in the reduction of the enemy force on Objective 4. From an over-all standpoint, the battle group commander was faced with the problem of whether to continue on his mission or protect his battle group from possible destruction. The availability of a powerful, quick-hitting reserve force in the form of a 2-KT allocated atomic weapon provided the answer. It allows him to continue his mission and protect his unit, with a reasonable probability of success.

The 2-KT weapon delivered at 1120 hours is effective in halting the advance of the two enemy tank columns. Enemy units farther to the rear fail to stop or divert their forward momentum. As a result, they form a large concentration of men and vehicles. The division com-

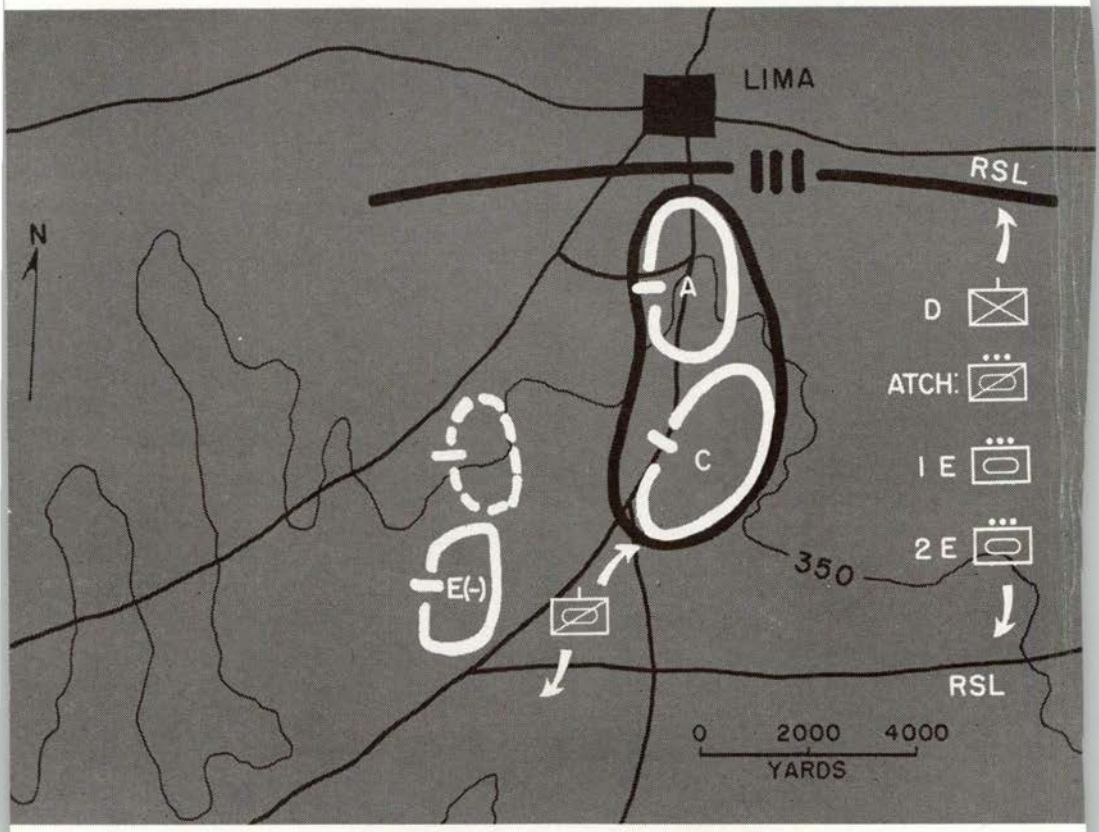


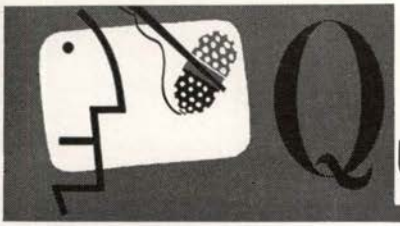
Figure 7. Reorganization on the objective.

mander takes advantage of the situation, hits the confused enemy concentration with another atomic weapon and then sends the reconnaissance squadron on a sweep through the area to destroy survivors. Team Charlie's attack against scattered resistance in Objectives 1 and 2 is progressing satisfactorily. When Team Delta is unable to advance against enemy forces holding Objective 4, the battle group commander commits Team Alfa to seize Objective 3. Enemy forces are now apparently withdrawing all along the front. At 1155 hours a liaison officer delivers the following message to the colonel from the commanding general: "Secure your objective area. Assist passage of CCA, Armd Div through Lima. Company D, Medium Tank Bn detached effective immediately."

How do we secure an objective area in the face of an enemy atomic threat? Figure 7 is a graphic portrayal of how the battle group commander is disposing his forces to accomplish the new "secure" mission. Occupation of dominant terrain within, forward of and to the flanks and rear of the objective area will minimize the possibility of reoccupation by hostile forces. Control of this over-all area will, in turn, assist the passage of CCA. The disposition of forces likewise reduces the vulnerability of the battle group—as a whole—to enemy atomic attacks. Two reinforced companies are disposed to occupy the dominant terrain included in

Objectives 1 through 4, since a lesser force would possess only a screening capability, and this would not be consistent with the assigned "secure" mission. Certainly the loss of this area to ground or airborne assault would seriously interfere with the passage of CCA through Lima. A heavily reinforced rifle company is utilized to establish the reconnaissance and security line (RSL). Not only is there a possibility that this reinforced company may have to fight for the dominant terrain, but also the frontage to be covered requires a strong force. Furthermore, movement of this force to the east will tend to deceive the enemy and draw his attention from the battle group area.

As demonstrated by this series of tactical situations, thorough planning, the effective use of atomic and nonatomic fires, and violence and speed in applying offensive action contribute to the successful accomplishment of the battle group's mission. When supported by atomic weapons and given appropriate mobility, the battle group can breach enemy defenses and then exploit that success. It can rapidly eliminate resistance. And it can cope with serious threats and still carry out its mission of seizing deep objectives. Our war story of the future has proved once again that *"Attack is the key to success."*



QUARTERLY QUIZ

Answer the following questions to determine whether you are a bolo, recruit, marksman, sharpshooter or expert. Each question is worth 10 points.

1. An Army pathfinder team, consisting of two officers and 10 enlisted men, is capable of furnishing navigational assistance to all types of Army aircraft and can precede or accompany the assault echelon to the objective area. Which of the following is the best method of delivering pathfinders to the selected landing zone?

   a. By parachuting from Army fixed-wing aircraft.
   b. By parachuting from Army helicopters.
   c. Air landed by Army helicopters.
   d. Air landed by Army fixed-wing aircraft.

2. During helicopterborne operations, a reconnaissance and security line is established to (select correct answer):

   a. Stop the enemy forward of the airhead line.
   b. Assist in effecting a smooth juncture with a ground link-up force.

c. Provide early warning of the enemy approach.

3. Which of the following systems normally is used to facilitate rapid warning to battle groups of radiological fallout, enemy air strikes and CBR attacks?

a. Special messengers designated as "warning" messengers are dispatched by air.
b. A warning/broadcast radio net exists between division and the battle groups for this purpose.
c. A field expedient system is set up for each operation.
d. The area support platoon operates a special teletypewriter service for this purpose.

4. During a battle group attack, the primary battle group observation post(s) will (select correct answer):

a. Be manned by personnel of the intelligence squad of the battle group headquarters section.
b. Normally be an aerial observation post using Army aircraft.
c. Not be established by battle group headquarters since the rifle companies will establish observation points.
d. Consist of a series of ground installations manned for the battle group headquarters by forward observer personnel of the battle group mortar battery.

5. Refueling of vehicles of the battle group normally will be accomplished by (select correct answer):

a. Pooling of 5-gallon gasoline cans in the supply and service area.
b. A 1200-gallon gasoline tank truck from the division quartermaster company.
c. The organically assigned gasoline tank truck.
d. Establishing a POL point with 55-gallon drums.

6. What commanders are empowered to authorize the employment of the five functional types of minefields?

7. What vehicular maintenance and recovery can be expected by the Infantry division battle group from the forward support company of the division ordnance battalion?

8. When using the standard message pad, the last element in the date-time group indicates (select correct answer):

a. The time-zone suffix.
b. The month.
c. Classification.
d. Standard time.

9. What is the maximum highway speed of the Army's new carrier, light weapons, Infantry, M274 (the "mechanical mule") (select correct answer):

a. 15 MPH
b. 25 MPH
c. 35 MPH
d. 45 MPH

10. With the M60 machinegun, what conditions will cause the malfunction commonly known as a "runaway gun"?

For answers turn to page 97.

General Bradley once said that "Congress can make a man a general, but it takes communications to make him a commander." This is more than ever true in the dispersed battlefield of modern warfare.

Are you satisfied with our communications

In spite of the many advances that have been made in our communications there is still room for improvement.

By Capt Joseph J. Piaseczny

It's True! The Infantry has better communications today than it has ever had before. The organization and equipment of the new pentomic division provide a communication system which is reliable and responsive to the will of the combat commander.

The system is highly flexible, since it provides more than one means of communication to higher, adjacent and subordinate headquarters and to fire support units. It enables the commander to communicate with organic, attached or supporting elements, whether they are

mortar, artillery, missile, air or naval in nature. And the system can support a myriad of tactical operations with a minimum of improvisation.

All of this is accomplished through the skillful employment of radio, wire, messenger, visual, sound or acoustical means. It is extended through combinations of these methods such as radio/wire integration, radio point-to-point relay, teletype, liaison personnel and many others.

When considered in this fashion, the answer to the question, "Are you satisfied with Infantry communications?" might very easily be a profound affirmative. Yet, with due respect for the great advances made in this field, we must recognize that there is still room for improvement.

The battlefield of today, with its unprecedented firepower, could jeopardize the Infantryman's fundamental ability to close with and destroy the enemy, if he cannot respond rapidly to orders or instructions which will move him from a threatened position to one in which he may gain the advantage.

It is this need to speed up the Infantryman's responsiveness and reaction to orders that demands continuous search for better means of communication. In the field of communications we can never afford to be satisfied. We must strive constantly to increase our capabilities. It is the Infantryman himself who must generate new developments.

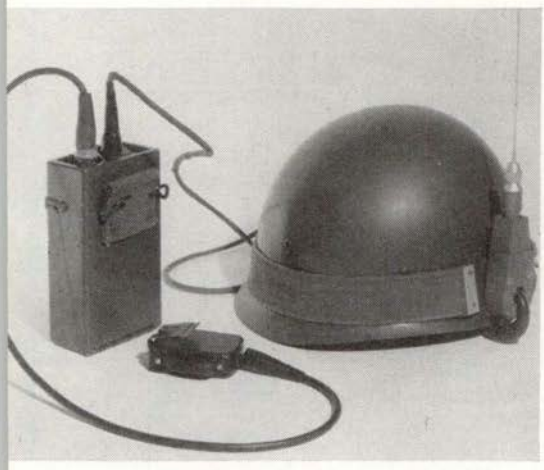
Since the area communication system of the new pentomic Infantry division, with its related radio nets, appears to be satisfactory, where do we begin? First, we know that additional improvements already are contemplated and that some of these are undergoing tests. By discussing a few of these items and some of our possible needs, we may point the way for further requirements and developments.

Our attention will be focused on the Infantry battle group, particularly on the rifle company and its subordinate elements, for at this level fewer technical developments have occurred in communication equipment.

We will start with the individual Infantryman. The frontline soldier is at the end of our chain of command. Traditionally, he has reacted as rapidly as possible to the verbal instructions of his team or squad leader. Perhaps we could assist him to react more quickly by providing him with a minimum-weight radio receiver mounted either in his helmet, on his belt or in the stock of his weapon. A hand signal to his immediate team leader could signify that he heard the instructions. We might also give him transmitting capabilities, provided we are willing to burden him with a few more ounces of weight.

Actually, such equipment has been developed and has been undergoing tests for several years. That it will work has been fairly well established. In spite of some opposition to the idea of wiring every Infantryman for sound, this capability must be fully explored. For it is

Figure 1. AN/PRC-34 helmet radio. The push-to-talk switch and the microphone are shown to the left of the helmet radio.



the Infantryman who must decide whether or not he needs this type of equipment.

Next we will consider the fire team leader of the Infantry squad. Could he operate more effectively if he had radio communication with the members of his team? If so, he must have the ability to transmit *and* receive. Small transceiver-type radios are presently available which may be mounted either in the helmet or on the belt, leaving the hands free for operations. The range of this equipment is presently variable between 150 and 500 yards. The weight is about two pounds. Fitted with this type equipment, the fire team leader could communicate quickly with his men and his squad leader.

The equipment discussed thus far is the AN/PRC-34 (Figure 1) and the AN/PRC-36 (Figure 2). Both of these radio sets are presently scheduled for further troop testing, although units have not as yet been designated for the tests.

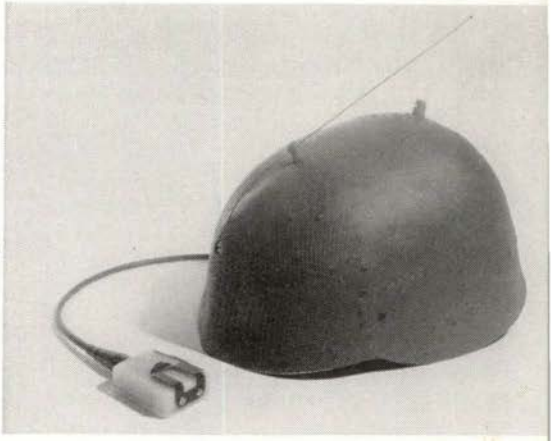


Figure 2. AN/PRC-36 helmet radio. The batteries and other components of this radio are built into the helmet.

Figure 3. AN/PRC-35 (right) compared with AN/PRC-6. The antenna and handset for the AN/PRC-35 are not shown.

If the Infantry squad leader is given a radio, he would require a set with greater capabilities than those visualized for the individual and the fire team leader. We could equip him with the present one-mile-range AN/PRC-6 handie-talkie (Figure 3). This would correspond to the action taken by Airborne and Armored-Infantry units. However, a smaller and lighter radio called the AN/PRC-35 has been developed recently which might fit into this picture nicely. Its weight is roughly five pounds and it may be belt-carried to free the squad leader's hands. The set has a total of four preset channels and a range of about one mile. It should lend itself well to dismounted operations by the squad leader. However, it should have a sister item of equipment—more rugged in design — for installation in Infantry carriers.

Better yet, the squad leader might be given a set that would have identical communication capabilities during dismounted or mounted operations. This

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need has long been recognized by armored units. However, it is doubtful whether a radio designed for foot operations would be suitable for installation in such vehicles. This point has not been satisfactorily resolved.

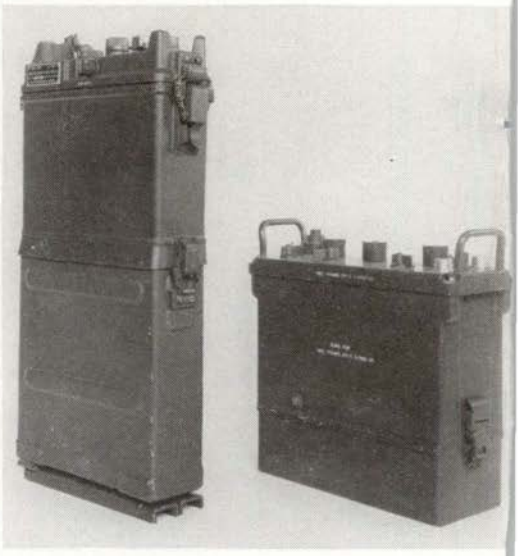
The Infantry platoon leader presents entirely different considerations. At the present time he could be provided with a one-mile-range AN/PRC-6 radio, to communicate with his squad leaders and other subordinates in his unit platoon command net, and the AN/PRC-10, with its three- to five-mile range, to communicate with the rifle company headquarters in the company command net. This in itself would improve his present limited capabilities. Such means have been incorporated to some extent within Airborne and Armored-Infantry units.

But this is not a very desirable solution, since the platoon leader would be required to employ two radio sets to communicate effectively.

A recently developed replacement for the AN/PRC-10 (Figure 4), called the AN/PRC-25, may provide the answer to this problem. Its range is about the same, three to five miles, and its weight will not exceed 15 pounds. This is quite favorable when compared to the 23 pounds of the AN/PRC-10. This new radio also possesses an auxiliary receiver, thus allowing the platoon leader to communicate with the company while listening to his own platoon net. If he wishes to communicate with his squads, he switches his transmitter over to the other net. This one package does the job of two sets.

While the AN/PRC-25 is a step in the right direction, the switching from one net to another requires a certain degree of skill. Dial manipulation and

Figure 4. AN/PRC-25 (right) compared with AN/PRC-10.



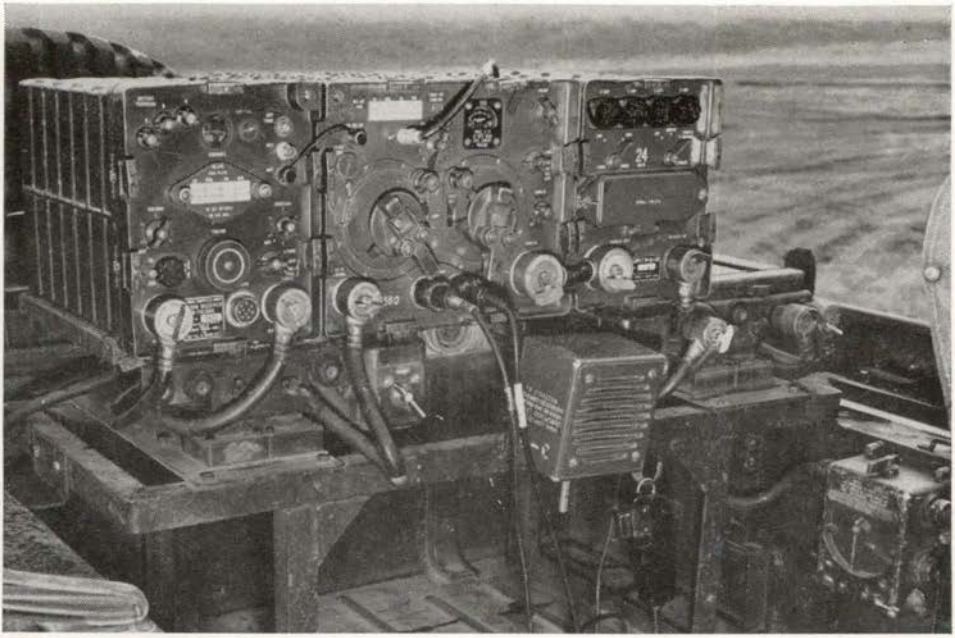


Figure 5. AN/VRC-18 mounted in ¼-ton truck.

calibration must be exact to insure alignment on the proper channel or frequency. Switching procedures in themselves may cause a loss of precious reaction time. The rifle platoon leader cannot be expected to perform effectively if he has difficulty in getting the radio to function properly. Consequently, it appears that a better radio should be developed for the platoon leader.

The present rifle company command net could be improved right now by substituting the AN/PRC-10, with a three- to five-mile range, for the AN/PRC-6, which is limited to a one-mile range. In addition to a one-for-one exchange, it would be desirable to provide two utility sets. This has already been accomplished to some extent in the Airborne and to a greater degree in Armored-Infantry units. For communication with battle group, the rifle company commander is presently equipped with an excellent radio, the vehicle-mounted AN/VRC-18 (Figure 5), which has a 10-mile range. The second in command should have a similar set. The link to company from battle group must be considered weak until the rifle company executive officer is also furnished a vehicle which will mount the AN/VRC-18. This is desirable not only for administrative purposes but for immediate use to retain control if the commander becomes a casualty and his equipment is disabled. Offensive actions permit no time for second echelon maintenance within the rifle company.

Now we will take a look at the battle group. Although the radio system within this unit appears to be adequate, closer examination reveals that we may be leaning a bit too heavily upon our FM (frequency-modulated) equipment. The battle group commander, some of the staff members, the rifle company commanders

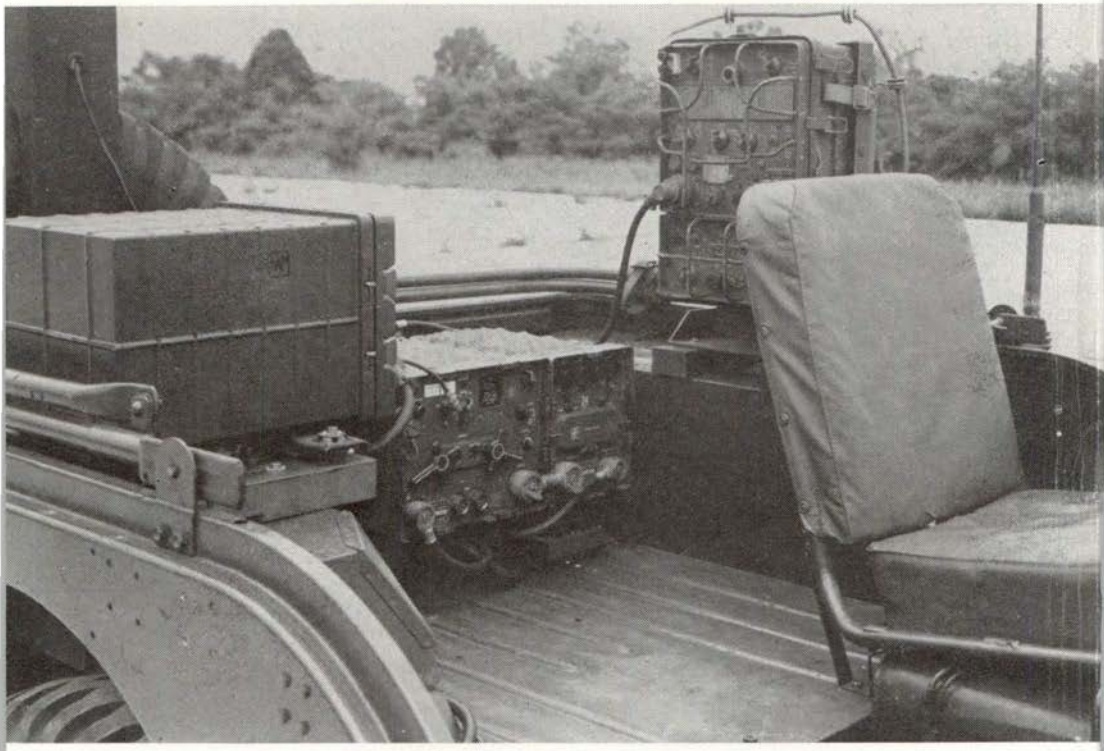


Figure 6. AN/GRC-9 (right) and AN/VRC-10 (center) mounted in ¼-ton truck. Shown at the left is the power supply for the AN/GRC-9.

and commanders of other units, are all equipped with 10-mile-range FM radio sets of one type or another. With the increased need for more radio nets at various levels of command, a shortage of available channels or frequencies can be predicted.

Furthermore, the 10-mile rated range may at times prove insufficient, creating a need for radio relay. Perhaps we should reestablish a requirement in the battle group for AM (amplitude-modulated) radio equipment similar to the AN/GRC-9 (Figure 6). This type of radio does not use any of the FM channels, and though it compares favorably in range capabilities when used on voice emission, it is capable of increased ranges when operated on CW by a trained operator. This combat-proven equipment is versatile for both vehicular and ground operation. Three of these radio sets, mounted in ¼-ton vehicles with driver-operators, would fit very snugly into the TOE of the communication platoon as utility equipment. For added versatility an FM radio, the AN/VRC-10, could be fitted into the same vehicle. The utility teams thus provided could add much flexibility to our present radio system, particularly when attached to long-range patrols or used during special operations such as helicopterborne assaults.

So much for radio. We should also consider wire communication. While currently available or proposed radio link equipment minimizes the long wire line requirements within the division area of

operations, we lack radio link equipment within the battle group and the rifle company. Until such time as small, lightweight equipment of this type is made available to the smaller units, light and portable wire communication must continue to be readily available for use when time permits its installation.

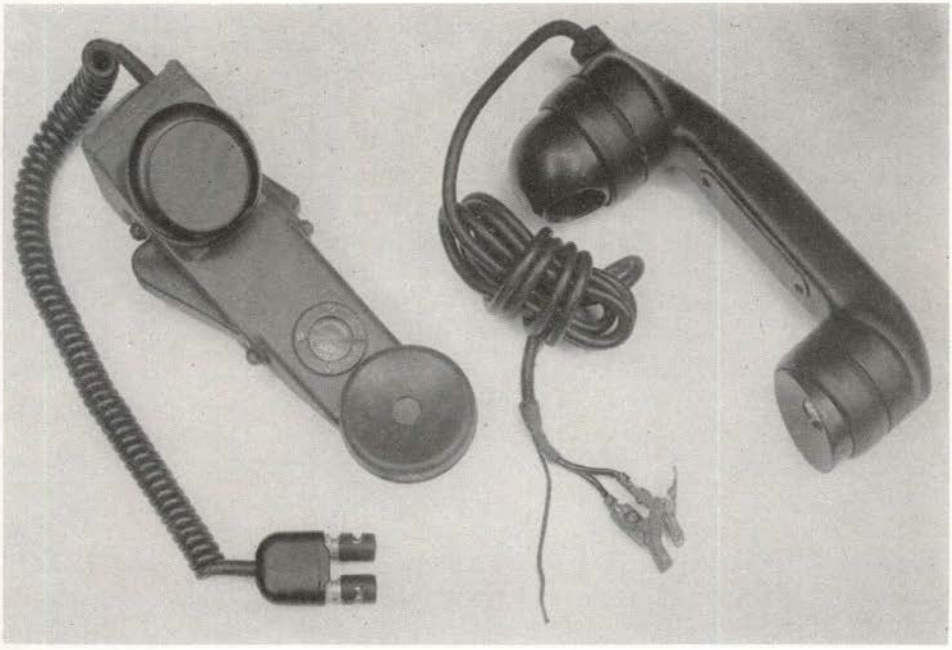
If provided with light wire and a couple of sound-powered telephones, individual Infantrymen, on dismounting from the carrier, can easily spin out a short wire line either from the carrier or a defilade position near it. This can be done as fast as they can run. Team leaders can run out a line to maintain contact with the squad leaders, or the squad leaders can have a line to the platoon leader. In this simple manner a reliable means of wire communication, with break-in operation, can be provided between members of the team. This complements the radio system.

At the present time our wire system terminates with a sound-powered TA-1/PT telephone issued to the rifle platoon headquarters (Figure 7). Lack of transportation prevents further distribution within the platoon. However, we could authorize one utility sound-powered telephone to the rifle platoon and two additional utility phones of the same type at company headquarters for distribution as needed.

The emergency switchboard SB-18 presently authorized the rifle company is not suitable for sustained operations. This switchboard accomplishes only what its name implies—emergency switching. The rifle company should be provided an improved switchboard similar to the presently available 12-drop, battery-operated SB-22 (See page 94). This has already been accomplished in Airborne-Infantry units.

Consideration should be given to the

Figure 7. TA-1/PT (left) compared with TS-10K.



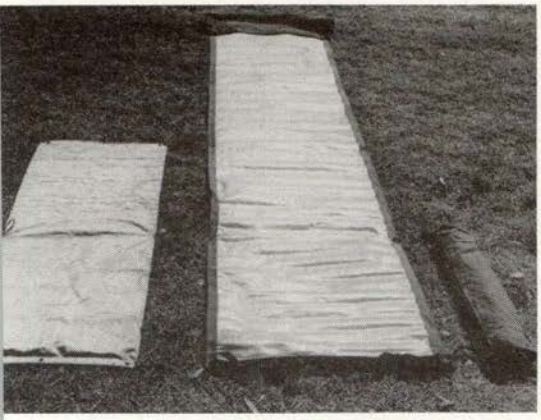


Figure 8. Visual Marking Panel VS-17 GVX (left) compared with the old two-piece Panel Set AP-50.

eventual development of a lighter, six- to eight-drop board for the rifle company. The need for this item was expressed 12 years ago at the Infantry Conference of 1946. The requirement still remains to be met.

Other means of communication play an important part in our planning. For example, visual marking panels, VS-17 GVX (Figure 8), mark our vehicles and troop dispositions to friendly aircraft. Perhaps our individual clothing could provide a means of augmenting this type of communication. Colored panels could be built into the Infantryman's jacket or shirt. The panels could be reversible to permit changes required by security.

Our pyrotechnics are a rapid means of disseminating prearranged signals, but they are not used as much as they might be. This is probably due to the various elements normally required to generate a signal. First we need the rifle, then we need the launcher, the cartridge and the pyrotechnic itself. If any one of these vital elements is lacking, we fail to communicate. All of the elements must be made available in one package.

We have developed such a package, the M125 through M130 series of hand-held, rocket-propelled signals,[1] but it has proved to be erratic in performance and its use is not recommended.

Surveys show that sound and acoustical means of communication are seldom planned for. We know that the Chinese communists capitalized on these means, not only to control troop formations with whistles and bugles, but also to stir up and create confusion prior to an attack. We might also capitalize on this primitive method. The horns on our vehicles are readily available to relay urgent prearranged messages if prescribed in SOPs. Certainly, sound methods are limited in their application, but their capabilities are there for the asking.

Every means must be explored if we are to provide a reliable, responsive and flexible communication system for our Infantry units. As new means of communication become available, we must rapidly integrate them into our system and educate ourselves in their use.

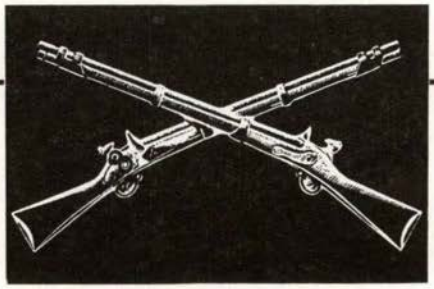
Communication can no longer be considered a technical subject for the Infantryman. Communicating must be as natural to the individual soldier as reading a map, driving a vehicle or firing a weapon. The means must be provided and reflected in our TOEs. And our communication training must be thorough if the Infantryman is to be the highly responsive individual we want him to be.

And so we go back to the question, "Are you satisfied with Infantry communications?" If you find weaknesses or have ideas to improve our communications, the Communication Department of the United States Army Infantry School would like to hear from you.

[1]This item was discussed on pages 85-87, April 1956 issue, *The Infantry School Quarterly.*

TESTING BATTLE GROUP SWITCHBOARDS

By CAPT JOHN E. RIORDAN

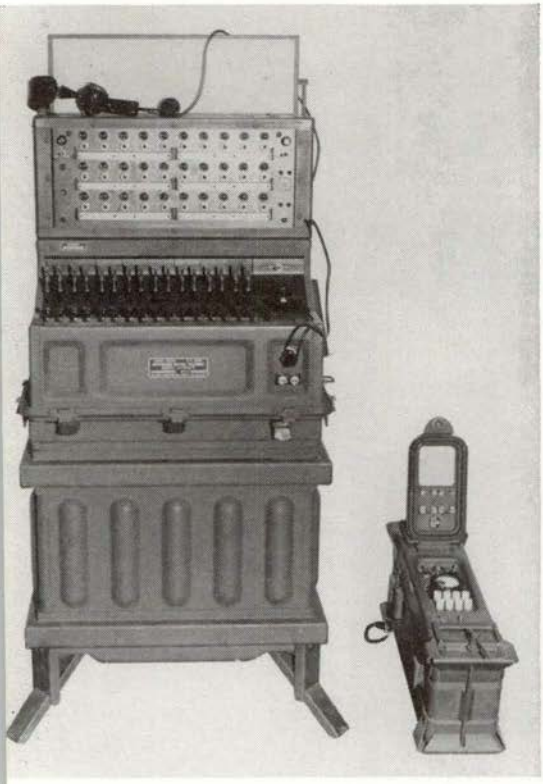


These are the first two in a series of new or revised operational tests which are being developed by the Infantry School for switchboards and other communication equipment.

At the heart of the wire communication system of the battle group are two types of switchboards, one electrically operated SB-86/P and three manually operated SB-22/PTs. The SB-86 and two SB-22s are located in the wire section of the battle group communication platoon, while the third SB-22 is located in the mortar battery.

The SB-86/P is the main switchboard for channeling wire communications within the battle group and between battle group and higher headquarters. The two SB-22s provide flexibility, since they can be used in alternate battle group headquarters while the headquarters is displacing, or as emergency replacements for the SB-86. The SB-22 organic to the mortar battery is the main switchboard for communication between the battery headquarters, the firing platoons and the OPs.

It is readily apparent that the wire communication system of the battle group and its units depends upon the reliability of these switchboards. Many failures of switchboards and other communication equipment in the field and in combat operations result from failure to perform preoperational inspections and tests.



Switchboard SB-86/P.

With this in mind, the United States Army Infantry School has endeavored to devise more simple, rapid and effective methods of testing communication equipment. New tests have been developed for the two battle group switchboards.

Operational Test for SB–86/P

The switchboard SB-86/P is a larger and more complex switchboard than the SB-22/PT and requires more time to test. However, it should be remembered that time spent in testing the switchboard is compensated for when the switchboard functions properly.

This test requires approximately 15 minutes to perform. The only instrument necessary in testing this switchboard is the field telephone TA-312/PT and a short length of wire WD-1/TT (Figure 1). Prior to testing the SB-86/P, ground the board; install batteries to power pack, PP-990/G and in the back of the switchboard; make the necessary connections between the power pack, PP-990/G and the switchboard; and connect the operator's handset-headset, H-91/U. The test then may be conducted in the following manner:[1]

1. Testing the Power Pack, PP-990/G:

a. Move External-Battery-Internal Switch to INT position. Set Internal-Battery Switch to LOW position. Push Battery Check Switch to position #1. Voltmeter should read 20 to 26.5 volts.

b. If voltmeter registers below 20 volts, move Internal-Switchboard-Battery Switch to HI position. Voltmeter should read between 20 and 26.5 volts.

c. If reading is still below 20 volts, check bank of batteries.

d. Push Battery-Check Switch to position #2. Voltmeter should read from 20 to 30 volts.

e. If voltmeter reads below 20 volts, replace bank of batteries.

2. Testing the ring supply indicator lamp on power supply, PP-990/G:

a. Operate Ringing Switch on operator's pack. Lamp should light.

b. If lamp fails to function; check: (1) fuse, (2) batteries, (3) lamp. Replace defective part(s).

[1]Where specific corrective actions are not indicated in the test procedures, the following actions apply: In the event of malfunction(s), the operator should check the electrical connections and fuses at the rear of the switchboard and the battery contacts. If, after the electrical connections, fuses and battery contacts have been checked, a malfunction still persists, the operator's pack, the cord pack or the jack field section is defective. The faulty element(s) should be tagged and turned in for repair. With the exception of a defective operator's pack which would preclude continuation, the entire test should be made even though other malfunctions are found and either corrected and/or the defective part(s) tagged for repair.

3. Testing the operator's telephone circuit, TA-220/P, and handset-headset, H-91/U:

a. Connect plug, PL-79/R, to connector, U-79/U. Connector and plug should fit properly.

b. Operate Battery-Talk Switch to ON position. Blow across transmitter; sidetone should be heard in the receiver of the operator's telephone set.

c. If no sidetone is heard, replace batteries in the operator's pack or, if necessary, replace the operator's telephone set.

4. Testing the hand ringing generator, G-42/PT:

a. Set External - Battery - Internal Switch to EXT position. Connect a serviceable telephone to line terminals #1. Set selector switch for pair #1, located beneath the designation strip, to position "M". Plug a calling cord into #1 line jack.

b. Operate Talk-Listen-Conference Switch for cord being used to TALK-LIST position. Operate Ring Forward-Ring Back Switch to RING FWD position and turn hand crank generator handle.

c. Test telephone should ring.

5. Testing the panel lamps:

a. Operate Lamp Switch to ON position. Panel lamps should light.

b. If lamps do not light, replace lamps, fuse or batteries.

c. Operate switch to OFF position. Lamps should go out.

6. Testing the line circuits, drops, night alarm system and jacks 1 through 30 (local battery):

a. Set External - Battery - Internal Switch to INT position. Set all selector switches to "M" position. Connect serviceable telephones to line terminals 1 and 30. Operate generator on test phone connected to line terminal pair #1. Drop associated with line jack #1 should operate to white position.

b. Move Audio-Visual Switch to VIS position; panel lamps should light. Operate switch to AUD position and night alarm buzzer should sound.

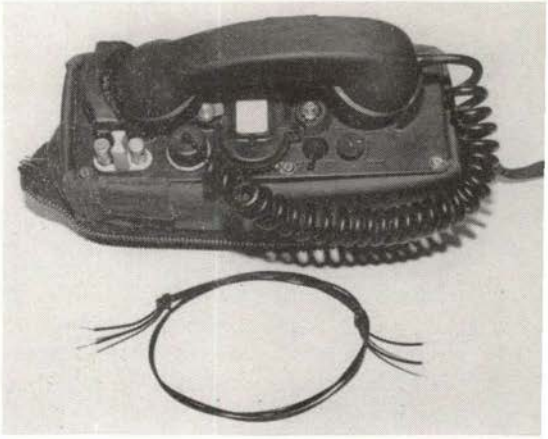
c. Insert an answering cord into line jack #1. Drop should restore to black and buzzer should stop.

d. Operate generator on test telephone connected to line terminal pair 30. Drop should operate to white and buzzer should sound. Plug in calling cord associated with answering cord already in use. Drop #30 should restore to black position and buzzer should stop. Conversation should then be possible between the operators of the two telephones. Move the Talk-Listen-Conference Key to TALK-LIST position and conversation will be possible between the switchboard operator and the operators of the two test telephones.

e. Operate the Ring Key to RING FWD position and the telephone connected to pair 30 should ring. Move key to RING BACK position and the phone connected to pair #1 should ring. Return Talk-Listen-Conference Key to neutral or central position.

f. Turn generator on test telephone

Figure 1. The field telephone TA-312/PT with a short length of wire WD-1/TT.



CAPT JOHN E. RIORDAN, JR., received his commission from OCS at Fort Riley in 1949 and later attended the basic Infantry officers course at the Infantry School. He was then assigned to the 35th Infantry Regiment, 25th Infantry Division, serving as a platoon leader in both Japan and Korea. He returned to the Infantry School and became an instructor with the Weapons Department. Following this assignment, Captain Riordan joined the 12th Infantry Regiment, 4th Infantry Division, in Germany. While with the 12th, he served as a rifle company commander, assistant regimental S3 and as commanding officer of regimental headquarters and headquarters company. He again returned to the Infantry School in 1956 to complete the advanced course and the basic airborne course before receiving his present assignment as chairman of the Wire Committee in the School's Communication Department.

on line jack #1. Supervisory drop associated with answering cord #1 should operate to white. Ring OFF with telephone connected to line jack #30. Action should be same as on #1. Remove answering and calling cords and return to plug seats. Supervisory drops should operate to black and cords retract fully.

g. Repeat steps 6a,c,d,e and f for remaining line jacks by moving test telephones to line terminals 2 and 29, 3 and 28, etc. Use different sets of cords until all cords are checked.

7. Testing the line signals, jacks and conference circuits 1 through 30 (Common Battery Signal):

a. Set selector switches on test telephones to Common Battery Signal position. Set selector switches on SB-86/P to "C" (Common Battery Signalling Line) position located beneath designation strip. Connect test telephones to line terminals 1 and 30.

b. Ring in by lifting handset on telephone connected to line #1. Drop should turn white and buzzer should sound. Insert answering cord #1 and jack #1. Drop should go black and buzzer should stop.

c. Ring in with telephone connected to line #30 in same manner. Drop #30 should go white and buzzer should sound. Plug in CALLING cord from pair #16. Drop should go black and buzzer should stop.

d. Move Talk-Listen-Conference keys for cord pairs #1 and #16 to CONF position and conversation will be possible between operators of the two telephones. Move Conference-Supervisory-Trunk-Signal Switch to CONF-SUPV position. Conversation between the operators of the two telephones and the switchboard operator will be possible. Allow the Conference-Supervisory-Trunk Signal Switch to return to neutral or center position.

e. Replace handset of test telephone in brackets. Supervisory drop associated with answering cord in use should operate to white position. Remove answering and calling cords and return to plug seats. Supervisory drops should go black.

f. Continue same test for remaining line jacks by moving test telephones to line terminals 2 and 29, 3 and 28, etc. Use answering cord #2, calling cord #15 with line terminals pairs 2 and 29, etc.

g. Tag all defective parts.

Operational Test for SB–22/PT

This test is simple but thorough. It facilitates easy and rapid training of wiremen and switchboard operators and requires only three to eight minutes to perform. The only instrument necessary in testing this switchboard is the field telephone TA-312/PT and a short

Switchboard SB-22/PT.

length of wire WD-1/TT (Figure 1). Prior to testing the SB-22, ground the board, install the batteries and connect the operator's headset-handset. The test then may be conducted in the following manner:[2]

1. Testing night-light circuit:

a. Pull out night-light receptacle. Light should operate.

b. If light does not operate:

(1) Check batteries and repeat "a" above.

(2) Replace bulb and repeat "a" above.

2. Testing T & R circuit:

a. Remove operator's plug from operator's jack.

b. With switch in the OFF position, blow into transmitter. No sidetone should be heard.

c. If sidetone is heard, switch is defective and should be replaced.

d. Depress switch to ON position #3; blow into transmitter. Sidetone should be heard.

e. Push switch to ON position #2; blow into transmitter. Sidetone should be heard.

f. If no sidetone is heard in tests "d" and "e" above, check batteries, replace if necessary, repeat test. If no sidetone is heard, T & R circuit is "out" and must be replaced.

3. Testing audio-visual switch, incoming and outgoing signalling circuits:

a. Operate audio-visual switch to VISUAL position.

b. Connect serviceable test instrument to first line pack.

c. Turn generator of test instrument. "Drop" should rotate to luminous position and operator's lamp should light.

[2]Where specific corrective actions are not indicated in the test procedures, the following actions apply: In the event of a malfunction of any component of the alarm system, the switchboard operator should check the batteries in the battery case and the contact made between the battery case and the clips in the back of the switchboard. If any component of the alarm system still fails to function, it is defective and should be tagged and turned in for repair. If the drop in any line pack fails to function, the line pack is faulty and should be replaced with a line pack from the accessory kit issued with each SB-22. The faulty line pack should be turned in for repair. If the hand generator of the operator's pack fails to function, the operator's pack should be turned in for repair. With the exception of a defective operator's pack which would preclude continuation, the entire test should be made even though other malfunctions are found and either corrected and/or the defective part(s) tagged for repair.

d. Operate audio-visual switch to AUDIO position. Buzzer should sound.

e. Insert operator's plug into the jack of line pack. "Drop" should return to black position.

f. Operate Ring Back Power Ring Forward switch to the ring back position and turn generator of SB-22. Test instrument should ring.

g. Connect test instrument to second line pack. Turn generator of test instrument. "Drop" should rotate to luminous position and buzzer should sound.

h. Repeat test "b" on each succeeding line pack.

4. Testing line-pack cords:

(NOTE: Do not perform the following test on any unserviceable line pack.)

a. Leave serviceable test instrument connected to the last serviceable line pack tested.

b. Insert operator's plug into jack of first line pack.

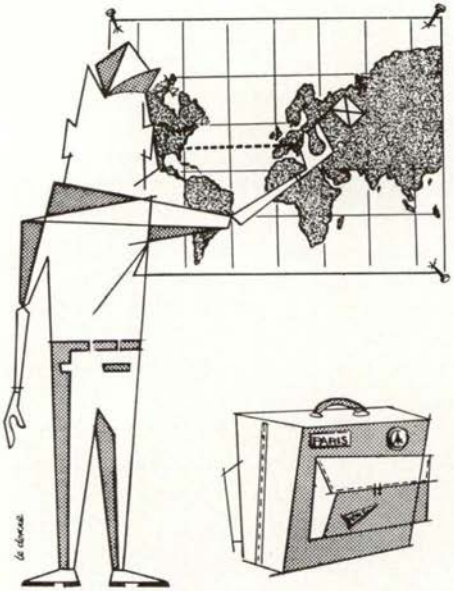
c. Insert plug from first line pack into jack of last serviceable line pack tested.

d. Turn generator of SB-22. Test instrument should ring. If a serviceable test instrument does not ring, the cord is defective and must be replaced.

e. Repeat C and D above for each succeeding line pack.

f. Test instrument must be moved to another serviceable line pack to test the cord on line pack 12.

As tests are revised or developed for other communication equipment, they will be published in *Infantry*.



WHERE IS YOUR CP?

Have you changed or are you about to change your coordinates? If so, let us know where you are so your copy of *Infantry* can follow you to your new CP. Write: Circulation Section, Book Department, United States Army Infantry School, Fort Benning, Georgia. Use the form on page 112.

ANSWERS TO QUARTERLY QUIZ *(See page 81)*

Possible score 100 points, expert 90-100, sharpshooter 70-80, marksman 50-60, recruit 30-40 and bolo 0-20. For detailed discussion of the answers check the references listed.

1. **c.** Delivery by helicopter is more accurate than parachute delivery and can be made under higher wind conditions. More personnel and equipment can be delivered in a better state of operational readiness. Delivery by helicopter furnishes means of aerial radiological survey and pathfinder evacuation, enables nonparachutists to accompany pathfinders in a supporting role and offers a possible means of delivery when ceilings are too low to make parachuting possible. (Chap 2, Sec II, Par 19a, ST 57-150, July 1957.)

2. **c.** The reconnaissance and security line is occupied by the security echelon of the air-transported force. The mission of this echelon is to provide early warning and, to a limited degree, delay, disorganize and deceive the enemy as to the location of friendly forces within the airhead. The reconnaissance and security line is established beyond the airhead line where it can prevent enemy ground reconnaissance and close observation of the airhead. It may consist of outposts, observation posts, roadblocks and reconnaissance detachments. The reconnaissance line does not restrict the maneuver of reconnaissance units. They may reconnoiter beyond it to accomplish their mission. (Chap 3, Sec III, Par 45d, ST 57-35-2, October 1956.)

3. **b.** The signal battalion operates the Net Control Station (NCS) in the division warning/broadcast net (AM voice). The net broadcasts air alerts, CBR attack warnings, fallout warnings, radiological safety data, atomic strike warnings and similar information of an urgent operational nature which applies to the division as a whole or to major divisional segments. These transmissions need not be handled through command channels and no immediate receipt or reply is required. The Infantry battle group is authorized Radio Receiving Set AN/GRR-5 for the purpose of monitoring the division warning/broadcast net. (Chap 4, Sec VII, Par 69e(1), TT 7-100-2, March 1957, and Par 18c(3), FM 11-10, July 1957.)

4. **b.** During the attack, the battle group observation post operates principally from the air when aircraft are available and weather permits. Distances involved in fluid operations lessen the value of a stationary battle group observation point as a location from which to control the attack. In some situations, advance observation points may be established along the proposed route or axis of advance for the purpose of reporting information of enemy movements, activities and terrain. These observation points can be manned by personnel of the reconnaissance platoon or rifle companies. (Chap 4, Sec IV, Par 14d(1), "Combat Intelligence Handbook," United States Army Infantry School, May 1957.)

5. **b.** POL is delivered by division to the battle group class III distributing point in 1200-gallon gasoline tank trucks. The use of 5-gallon gasoline cans is

held to a minimum. They are not used at the battle group or unit level except in the event of emergency. As the elements of the battle group require class III supplies, a gasoline tank truck is sent to the company supply areas if the tactical situation permits; otherwise, units send vehicles back to the battle group class III distributing point for refueling. (Part 2, Chap 1, Sec II, Par 163d(2), FM 7-21, August 1957, and "Logistical Support—Pentomic Infantry Division." *Infantry* Magazine, January 1958.)

6.

Type Minefield:	*Authority:*
Protective	Battle group or higher commander
Defensive	Battle group or higher commander
Barrier	Division or higher commander
Nuisance	Army or higher commander
Phony	Commander with authority to employ the type minefield being simulated

(Part 3, Chap 10, Sec III, Par 90-94, FM 20-32, as amended by ltr, subj: "Authority to Employ Protective Minefields," Hq, USCONARC, dtd 31 Jan 1957.)

7. The forward support company provides limited third echelon maintenance and supply support to all battle groups of the division. It provides limited evacuation support, furnishes ordnance technical assistance to all supported units and assists in the performance of organizational maintenance when necessary. (Chap 5, Sec XI, Par 118b, TT 7-100-2, USCONARC, March 1957.)

8. **a.** Immediately after signing a message, the writer enters the date-time group in the space provided. The first two digits represent the day of the month. The last four digits show the time expressed in the 24-hour clock system. For example, 10 o'clock in the morning of 5 April 1958 (Greenwich time) would be shown as 051000 Apr 58Z. The last element is the time-zone suffix of the area in which the unit is operating. (Chap 5, Sec I, Par 78j, FM 21-75, June 1957.)

9. **b.** (Chap 1, Sec II, Par 6, TM 9-8034-10, July 1957, and "The Mule Returns," *Infantry School Quarterly,* October 1956.)

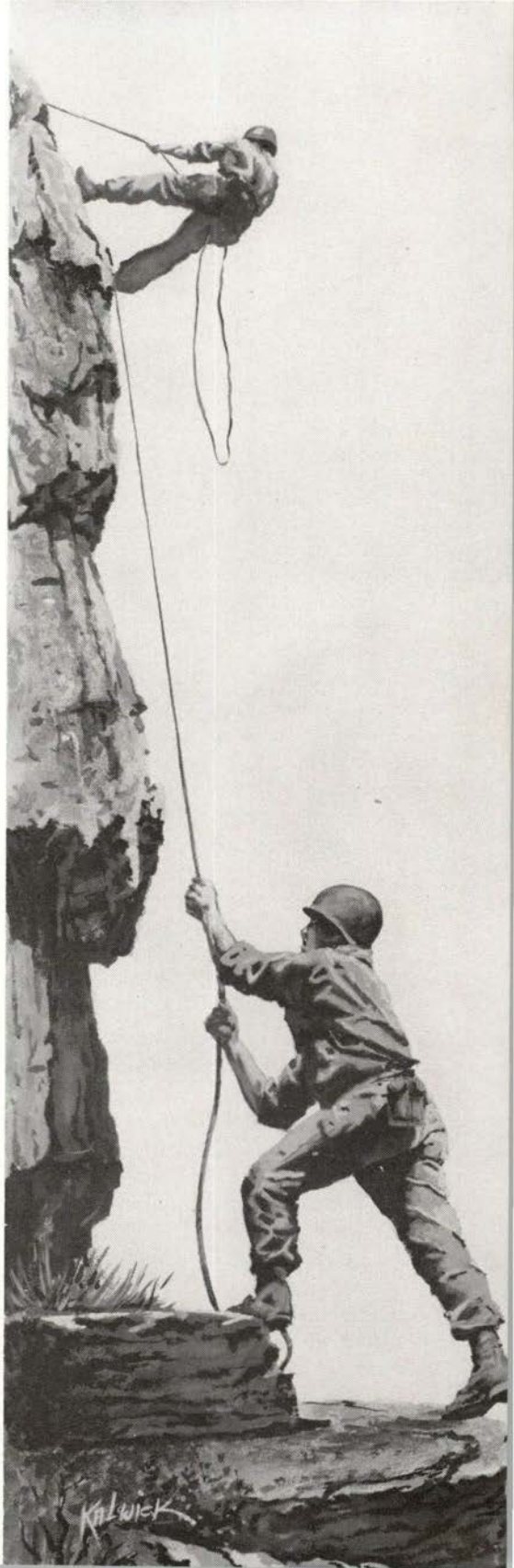
10. A "runaway gun" is a condition in which a gun continues to fire after the trigger is released. It may be caused by excessive wear of the sear and/or the sear notch in the operating rod. It may also be caused by short recoil which results from a dirty receiver or gas system. To stop the gun from firing, hold the ammunition belt. (Chap 2, Sec IV, Par 25b, ST 23-56-1, July 1957, and "The M60 Machinegun," *Infantry* Magazine, October 1957.)

The ground arms and their supporting forces are of undiminished importance in this atomic age. Destructive though war has become, its objective is still decision—not destruction. That decision remains in the hands of soldiers who can finally come to grips with an enemy, defeat him, and exercise an effective control over him.

TRAINING for COMBAT

We need an effective but safe method of training which provides the element of personal danger experienced by the soldier in actual combat. Military mountaineering may be the answer.

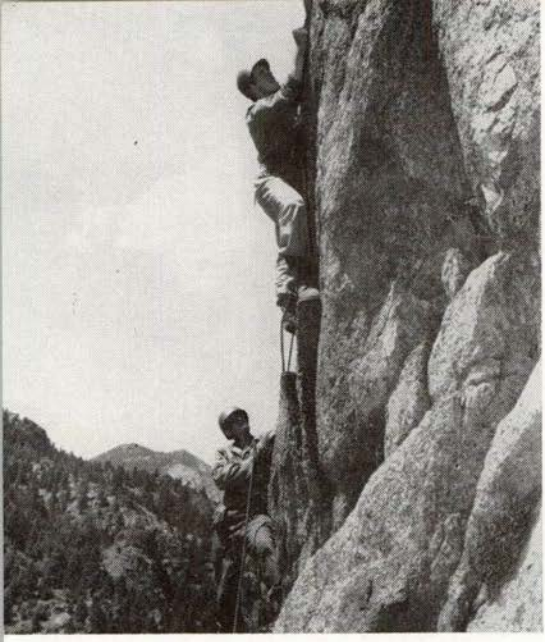
By Lt Col Walter R. Bruyere



The purpose of all military training is to prepare men for combat. The individual soldier is taught how to handle himself and his equipment and how to operate as a member of a team. This instruction is designed to produce success on the battlefield.

The training methods used are highly effective, but they fail in one respect. They do not enable the soldier to know what actual combat is like or what his reaction will be when he finds himself on a real battlefield.

Combat courses, small unit exercises and field problems do not produce in an individual the same feeling he will experience when he is first fired upon by the enemy. He does not experience the emotion that is brought on by physical danger. To approximate this feeling with



conventional methods of training would require a disregard for safety regulations and would result in casualties that would not be tolerated in this country.

There is a need for something in our military instruction which will provide the element of personal danger without producing safety hazards which normally limit attempts to conduct realistic training.

The answer may be "military mountaineering." Mountaineering is a medium which comes relatively close to producing the desired results. This type of training has been given to a small number of individuals and units and has been found to produce confidence and teamwork and to provide an insight into a soldier's dependability and reliability in combat.

Military mountaineering, specifically the rock-climb phases, presents the element of danger, risk to the human body and mental emotions which normally are associated with actual combat. The situation an individual faces when he is climbing on hard rock above a 50- to 600-foot drop requires extreme control of nerves, imagination and physical reactions. A soldier requires somewhat the same amount of mental and physical effort to climb successfully as he does to get up out of the relative security of a foxhole and move forward under enemy fire. Yet this training has been no more hazardous and has had no higher injury rate than conventional methods of training.

The main value of military mountaineering is the test which it presents to the individual. The soldier is required to face an element of personal danger which tests not only his knowledge and training but also his fortitude. It gives him an insight into his capabilities of performing successfully under combat conditions. This type of training presents the challenge of facing something unknown. What could be more unknown than the outcome of climbing on the side of a sheer cliff which drops straight down for 100 to 600 feet? The challenge is both physical and mental. When he has accepted and overcome the challenge, he has a better understanding of himself and of what he might expect when the chips are down. He acquires a feeling of confidence in himself that he cannot obtain in normal training.

Military training also requires that a man become a part of a team and that he be able to handle himself and his equipment in such a manner that other members of the team can depend on him as much as he depends on them. Mountaineering provides mutual need and reliance training to a high degree. When two or three men are roped together they must coordinate and cooperate as a team, and they must rely upon each other if they are to succeed in the climb. The ability and training of each man are tested, and the results may determine whether a slip and fall are merely a jolt to the nerves or an injury. Such training builds not only individual confidence but confidence in the ability of other members of the team.

Why hasn't this type of training been expanded to include all soldiers of the Army? The reason probably is the feeling that it is specialized training which stems from the days when it was first initiated into the Army by the 10th Mountain Division to meet a special military need. So long as one considers mountaineering on the level of division or battle group, it *is* in the class of specialized training. But if it is brought down to the level of the individual soldier and considered from the viewpoint of what it can accomplish for him, it loses its specialized nature. It then becomes a part of the over-all physical and mental conditioning of the soldier for combat.

Another reason may be the belief that this training requires special equipment. This impression stems from the general concept that every climber requires yards of rope, pitons, ice axes, special boots and other equipment. Such equipment would be needed if one were to climb Mt. Everest, but it is not necessary for a short course in military climbing. All that is needed for training in basic military mountaineering is a 12-foot length of nylon rope and one snaplink per soldier and a 120-foot nylon climbing rope for every two climbers.

A third reason may be the feeling that finding suitable training areas would be a problem. This problem can be solved. You don't need the mountains of Colorado or Switzerland to conduct basic mountaineering. Almost any rock outcropping will do. Bluffs along rivers, or even constructed climbing obstacles, will accomplish the purpose.

There is much interest today in finding a way to determine a combat or fighting soldier from the non-fighting soldier. A one- or two-week mountaineering course in the Army Training Program would help to make that determination. A course in the fundamentals and basic techniques of rock climbing, to include various types of climbs, would require the soldier to extend and test himself. The manner in which he conducts himself and his success or failure in completing the more difficult climbs will provide sound criteria on which to base his expected actions in actual combat.

This training could also have a particular advantage in future warfare. In spite of atomic capabilities, it is quite possible that nonatomic warfare will be fought in mountainous areas where the effects of nuclear weapons are somewhat diminished by the configuration of the terrain.

This article is not an attempt to get the Army into the mountain-climbing business, but it *is* an attempt to bring into the Army, on a larger scale, a training medium which will help to produce a soldier who is more capable of thinking and acting for himself and as a member of a team.

Lt Col Walter R. Bruyere received an ROTC commission in 1939 after graduation from Rutgers University. During World War II he served as S3 with Headquarters Command, Allied Force Headquarters, Algiers, and as a battalion commander with the 141st Infantry Regiment, 36th Infantry Division, in France. When he returned to the United States he was assigned to the Infantry School, first as a student and later as an instructor. Colonel Bruyere was graduated from the Command and General Staff College in 1952 and subsequently was named Secretary of that school. During the following year he became secretary of the general staff of IX Corps in Korea. He served as executive officer of the U. S. Army Mountain and Cold Weather Training Command from 1955 to 1957. Colonel Bruyere is now executive officer of the U. S. Army Instructor Group at the University of Hawaii.

is extracted from paragraph 34, chapter 4, of Department of the Army Field Manual FM 21-76 entitled, Survival, *published in October 1957. "It is generally safe to try wild plant foods you see being eaten by birds and animals." This field manual has been reviewed for accuracy by the Surgeon General as well as other authoritative agencies.*

It is agreed that Dr. Van Dellen's contention, "Just because we see a bird or animal eat the seed or fruit is no criterion that the substance is safe for human consumption," cannot be disputed. Our statement, ". . . it won't hurt you," actually should have been qualified by the word, "generally."

The rules for survival are of necessity general. They are primarily guides to be adapted to specific situations. When confronted with starvation, the criterion for food selection is somewhat abstract, and the would-be survivor may assume a calculated risk. That risk certainly should be lessened by eating what birds and other animals are eating. At least, the taste-and-wait and do-like-the-monkeys-do methods described in the article, "Survival," are worthwhile guidance in an emergency for the person who is unfamiliar with plant life.—Editor

Fatal Mistake

Sir:

I would like to obtain a copy of the April 1957 issue of *Infantry*. I have made the fatal mistake of lending my regular subscription copy to a friend and as a result I am empty handed. If you have one available, please forward it to me. . . .

Also, I would like to obtain the format and/or requirements necessary to submit an article for publication. I want to thank you in advance for your assistance.

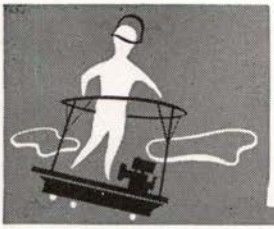
Robert E. Ridder
2340 N. 83d Street
Omaha, Nebraska

We're sorry, but we cannot fill your request. The April 1957 issue of Infantry *was a complete sell-out. However, we are sending you a copy of the first article on the pentomic Infantry division from that issue. This will enable you to complete your file on that subject.*

While there are no special requirements or specific format for the submission of articles to Infantry, *it is desired that manuscripts be typed, double-spaced, on one side of legal or standard size paper. But, we will accept good articles of interest to Infantrymen, even if they are scratched out in pencil. Content is the important item. The material must be timely and of value to other Infantrymen. We are in constant need of this type of material and we pay for accepted articles. We would be happy to receive an article from you. Send it to: Editor,* Infantry, *Editorial and Pictorial Office, United States Army Infantry School, Fort Benning, Georgia.—Editor*

The presence of our soldiers stimulates the morale and stiffens the resistance of our friends by constantly reminding them,—not in mere words but in the solid substance of American men and American armaments right there with them,—that we are in this crusade for peace together, and that we intend to see it through together. In addition, the constant, visible evidence of our strength and resolution has a very discouraging effect upon any new plans the communists may have to extend the bounds of their "empire of fear" by armed aggression.

SECRETARY OF THE ARMY WILBER M. BRUCKER.



WHAT'S NEW FOR INFANTRYMEN

DEVELOPED

New Gasoline Tank Truck

Long queues of Infantry tactical vehicles awaiting their turn at gasoline distribution points may soon be a thing of the past. The Army is developing a 5000-gallon tractor-trailer tank truck which can deliver fuel to five vehicles simultaneously. In this age of unprecedented mobility, such a distribution system will insure that the momentum of the attack is not stalled due to lack of fuel. A unique feature of the truck is that it will have cross-country capabilities and should therefore be able to provide support in any terrain to which other vehicles have access.

Midget Mine Detector

The Army Engineer Research and Development Laboratories at Fort Belvoir have developed a mine detector only one-fourth as heavy as the current standard model. Designed to locate mines with metal components, the 7-pound detector is equipped with transistors instead of electron tubes. It has four times the battery life of the standard model.

Now ready for field testing, the new detector boasts increased sensitivity and improved stability. The device consists of four hermetically sealed, plug-in subassemblies each containing several transistors with associated circuity. Repair of the instrument requires only the replacing of one or more of the compact plug-in units.

The search head is mounted on a collapsible handle, and wires connect it with the electronic and headset assembly. The indicator meter and a sensitivity switch are combined in a control box which also is attached to the handle. During operation, metal upsets the balance of the search head, and the electronic assembly amplifies the unbalance signal for headset and meter indication.

New Photo-Reconnaissance System

A new photo-reconnaissance system to give combat commanders accurate low-level aerial photographs of enemy areas during the hours of darkness has been perfected. The new system employs a small, rugged, lightweight camera which can be sent over enemy lines in a pilotless drone plane. It will assist tactical commanders in observing enemy positions and movements during hours of darkness or when screened from view. The camera, which provides its own illumination by means of an automatic flare ejector, makes a series of pictures so that a terrain strip can be photographed in a matter of seconds by a sequence of extremely rapid flashes. The capabilities offered by the camera are of major significance to the Army's pentomic organization and its mode of operation.

Loader For The Hawk

A tractor-driven missile loader has been developed for the Army's surface-to-air guided missile system, the Hawk. This loader makes it possible to transfer

Hawk missile loader.

quickly three "birds" at a time from storage area to launcher. The self-propelled and highly-maneuverable loader is able to negotiate rough or muddy terrain.

Units of the deadly accurate system, including the launcher, loader and missiles can be quickly moved to any isolated frontline location by fixed-wing aircraft, helicopters or land vehicles.

For additional information on the Hawk, see, "What's New For Infantrymen," *Infantry* magazine, October 1957.

New Life Jacket

A pocket-size, lightweight, self-inflating life preserver, which will keep the head of the wearer above water even if he has lost consciousness, has been developed for use by combat troops.

Utilizing the "trapped air" principle, the new preserver is designed to replace the bulky and cumbersome World War II kapok and the belt types which were inflated by carbon dioxide capsules.

The new jacket was made possible by the addition of an air-expansible collar assembly to a lightweight, fixed-pad preserver. When the wearer falls into the water, the water pressure forces the trapped air to the upper torso, thus providing support and buoyancy. Consequently, the need for oral, mechanical or chemical means of inflation has been eliminated. An outlet valve releases the trapped air from the preserver for storage and shipping.

The required volume of air in the pads is assured by the use of stays. Segmentation and the use of light, waterproof fabrics provide insurance against puncture. The jacket can be worn easily with combat equipment and the material and components will not corrode in salt water.

Speed Photos by Radio

Development of a portable radio facsimile system has been disclosed by the U. S. Army Signal Corps. The new device can send a high quality photo 40 miles to its companion receiver within five minutes after the photographer clicks the shutter. The set can also send a photo thousands of miles over standard telephone lines or around the world by long-range radio circuits.

Combining high speed Army picture sending techniques with Polaroid film that produces a finished print one minute after exposure, the system can send a picture in three minutes. The set is designed to fit easily into the back of a radio-equipped jeep or car, and may be mounted in a light reconnaissance plane or helicopter, allowing an aerial photographer to send surveillance pictures continuously to battle headquarters directly from the aircraft.

New Tool Set

A portable electric tool set has been developed by the U. S. Army Engineer Research and Development Laboratories. Designed to speed construction of bunkers and other emplacements in forward areas, the set has been recommended for issue to Infantry units to support the combat effectiveness of the pentomic Army.

The set, consisting of carefully selected

hand and pneumatic tools, is trailer-mounted and air-droppable. The components are compactly arranged for all-purpose use and easy access.

Major items include: two 10-inch circular saws, two 24-inch chain saws, two 15-watt lighting fixtures, a ¾-inch reversible electric drill, a ⅝-inch impact wrench, an electric hammer, a right-angle sander and a clay spader.

Power for operating the instrument is provided by a 3- or 5-kw, 60-cycle, 115-volt engine generator which can be operated either within or outside the standard ¼-ton military trailer.

REVISED

Supply and Property Accounting Procedures

The United States Army Infantry School has reevaluated and reorganized its program of resident instruction governing supply and property accounting procedures to conform with a new regulation, AR 735-35. The new regulation which supersedes SR 735-30-1 provides for a drastic reduction in the records required at unit level and an increase in records required at battle group level. Property will be issued directly from battle group S4 to the user (i. e., platoon leaders, etc.).

The first resident instruction implementing the new system was presented during the month of January, and the USAIS Supply and Property Accounting Procedures Handbook, supporting the instruction, is being revised and will be available in the near future. Revision of nonresident instruction in this subject was initiated concurrently with the changes in resident instruction.

Jump Techniques

The adoption of the C-123 and the C-130 aircraft as troop carriers has necessitated changes in the present methods used by parachutists to exit from cargo compartments. The interior configuration of the compartments of these two aircraft differs from the older C-119 aircraft; therefore, a change in the approach to the jump door and in the present seven jump commands was necessary.

The "shuffle, pivot and stand-in-the-door" technique has been replaced by shuffling all the way into the door, with the "outboard" foot leading. There is no pivot. This places the left foot in the right door and the right foot in the left door. With present troop carrier aircraft (C-119, C-123 and C-130) the matter of which foot is in the door is not as important as it was with the C-46 and C-47.

Eight jump commands will be used instead of seven. The additional command, "check static lines," has been included primarily to insure that the jumper's static line is not "misrouted," which could cause him to be towed by the aircraft. Upon receiving this command, each jumper will check the static line and the back pack of the man to his front. The last two men in the stick turn around so that the static line and back pack of the last man can be checked.

At present, six new C-130 mock-ups are being used at USAIS for student familiarization in the Basic Airborne Course. When a sufficient number of C-130s are available for general troop and school use, existing C-119 mock-ups will be modified to resemble the C-130 and C-123 type mockups. Training will be conducted on C-123 mock-ups only in the event C-130 type aircraft are not available due to other commitments. The C-123 will be the alternate aircraft for jumping.

Machinegun Instruction

The adoption of the M60 machinegun has modified instruction in machinegun technique of fire at the United States Army Infantry School. While the school

is not giving instruction at this time on the M60, certain characteristics of this weapon have led to changes in instruction with the light machinegun, .30-caliber, M1919A6.

The Gunner's and Leader's rule cannot be applied to the M60, as the sight of that weapon is graduated only to 1200 yards. Accordingly, there has been a reduction in emphasis on these rules with the .30-caliber, M1919A6 machinegun. Instructional time has been reduced from two hours of conference and practical work to a conference of about 25-minutes duration.

The computed Quadrant Elevation Method of firing from position defilade has been deleted from machinegun instruction since the clinometer is not issued for the light machinegun.

In addition, the inclusion of the M59 Infantry personnel carrier in the Infantry division, with its mounted .50-caliber machinegun, has led to an increase in time allotted for instruction on this weapon. Advanced noncommissioned officer, officer candidate and basic officer classes are now receiving instruction in characteristics and capabilities, general disassembly and assembly, adjustment of headspace and timing, and firing the familiarization course with the .50-caliber weapon.

Battle Group Maintenance

The new Infantry division has brought about vast changes in organization for maintenance within the battle group. As a result, there is now a greater degree of flexibility in maintenance than there was in the old triangular division.

Repairs will be made as far forward in the combat area as the tactical situation permits, thereby insuring increased mobility of the battle group. Whenever possible, under the new system of maintenance, repair personnel will go to the equipment instead of the equipment being transported to a rear repair area. Thus, many time-consuming evacuations will be eliminated, and equipment will be returned to the using unit more quickly than before.

The battle group maintenance personnel are assigned to the mortar battery and to the supply and maintenance platoon of headquarters and headquarters company.

The motor transportation officer, a member of the battle group special staff, serves as the principal assistant to the battle group commander in matters concerning automotive maintenance and control of transportation. He is responsible for directing the operation of motor transportation under battle group control and exercising staff supervision of vehicle maintenance.

In addition to its organic maintenance personnel and equipment, the battle group is supported by one of the six direct support platoons of the forward support company in the division ordnance battalion. Composed of one officer and 15 enlisted men, each platoon is fully mobile. It is capable of operating independently, of furnishing limited third echelon maintenance on the ordnance equipment of the battle group and of maintaining a limited supply of selected, fast-moving items of ordnance general supply. The medium wrecker of the ordnance platoon, which is used in support of the battle group's own light wrecker, will add greater evacuation capability to the battle group. With the direct support platoon working with the battle group, a faster and more efficient maintenance operation will be made possible.

Tactical Exercises

Revision of Problem 7320, "Development of a Field and Command Post Exercise for an Infantry Division Battle Group," has been completed. The revi-

sion incorporates the use of atomic weapons at battle group level, utilization of Infantry carriers and employment of an Infantry battle group on an extended front. The revised problem reflects the latest tactical doctrine and techniques employed under conditions of atomic warfare. The problem may be used as a guide in preparing exercises for training or testing battle group-size units in modern tactical exercises.

Physical Training Chart

New teaching points are being incorporated in GTA 21-39, "Physical Training," which is now undergoing revision. The revised chart will include illustrations of positions and exercises of grass drills, rifle drills and Army Drill Nr. 1. The revision will also delete exercises which are no longer used.

TESTED

Jet Aircraft for Infantry Operations

A test of T-37 jet aircraft in support of Infantry tactical operations was recently conducted at the United States Army Infantry School. Designated Project Long Arm, the test was held to determine tactics and techniques for the employment of higher performance Army observance aircraft during Infantry battlefield operations.

The 5-phase test simulated, as accurately as possible, combat conditions visualized in future warfare. Three T-37 jet aircraft, on loan to the Army from the United States Air Force, participated in the experiment.

Plastic Shell Casing

A lightweight, low cost, plastic shell casing has been developed and successfully tested by scientists and is now ready for Army field tests and cost studies. If the results are favorable, it is possible that plastic will replace the brass as well as the steel casing developed during the Korean conflict.

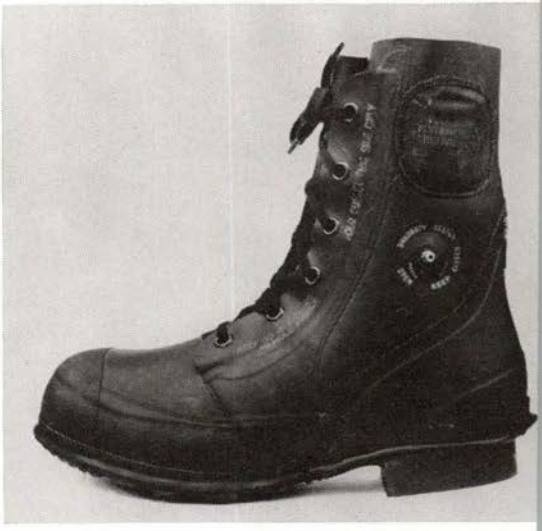
Weighing less than half as much as metal cases, plastic prototypes for the 105mm field gun used by both the Army and Marine Corps show a saving of three pounds. Other advantages are economy in vital war materials and shipping plus an expected lesser cost of mass-produced plastic cases. In past tests, some casings have been fired several times from guns and remained undamaged after being subjected to extremely high temperatures and pressures. Future tests by the Army are designed to determine whether the plastic is sufficiently sturdy to withstand the rough handling of world-wide shipping and actual use under battlefield conditions.

Cold-Wet Boot

A cold-wet boot is being tested by troops of the 4th Infantry Division at Fort Lewis. The new footwear will be compared with the older thermal boot often referred to as the Mickey Mouse boot, Arctic boot or other names.

The tests, planned by the United

Cold-wet boot.



States Army Infantry Board at Fort Benning, will seek to answer questions regarding suitability, warmth, comfort, and the effects of cold and dampness. Suggestions will be sought for improving the boot. Sizing and fitting methods will also get a thorough examination.

Communication by Infrared

Infrared light rays may provide another method of transmitting messages over a battlefield if current tests continue satisfactorily. Signal Corps engineers have found it possible to "modulate" (put a voice on) an infrared wave and use it for two-way communication over considerable distances.

Radio or wire messages are fed electrically into the "invisible light" transmitter. The electrical output at the receiving end can be put on a telephone line, radio transmitter or public address system as desired. Relay stations on hilltops can be established to extend the range of the system, which has a line-of-sight characteristic comparable to that of television transmission. The light waves can be contracted into a very narrow beam which can only be intercepted or stopped by physically coming into the beam. Existence of the beam can be detected by an enemy only through the use of special equipment. If adopted, the system would alleviate the radio traffic congestion which frequently arises in time of conflict. In addition, it would reduce the need for time-consuming wire laying and would not be vulnerable to cutting.

Surveillance drone.

Weapon-Mounted Camera

Cameras mounted on rifles and automatic weapons are being used in tests at the Combat Developments Experimental Center, Fort Ord, to determine the vulnerability of low-flying aircraft to small-arms fire from ground troops. Each time a camera-equipped weapon is triggered, a picture is snapped. The film will show how well a man has kept the moving target in his sights—in other words, how many hits are scored.

UNDER STUDY

Surveillance Drone

The Army has awarded a two-year study contract to Cornell Aeronautical Laboratory to keep combat surveillance in step with advancements in modern warfare. The purpose of the study is to improve battlefield surveillance systems which employ radar, infrared, sonic, meteorological, drone reconnaissance, photographic and televisual means. Such information is vital to commanders who may operate in combat zones covering thousands of square miles and who will be employing devastating modern weapons.

Already on order for this purpose is a twin-tailed, unmanned flying reconnaissance device called a "surveillance drone." Described as the first craft of its type, the SD-3 can utilize photography, radar or infrared rays.

In the future, prominent scientists and engineers will collaborate with Army officials to review present reconnaissance tactics and techniques with the aim of recommending new methods for gathering battlefield information.

APPROVED

New Pockets for Summer Shorts

Department of the Army recently announced that cotton-drill pockets will be replaced by nylon mesh on the summer knee-length trousers. Field tests have proven that the cotton khaki short trousers with nylon mesh pockets are cooler and more comfortable for warm-weather wear. Procurement of the new pocket material will begin as soon as present stocks are exhausted.

Carbine Trainfire Course

United States Continental Army Command has approved the adoption of a carbine Trainfire course. This is a continuation of the Army's efforts to add realism and achieve effective training within the small-arms marksmanship program.

The new course is essentially the same as that used for the M1 rifle, except that target ranges have been reduced to match the shorter range of the carbine. During instruction field firing, the carbine targets are placed at 75, 125 and 175 meters instead of at 75, 175 and 300 meters used with the rifle.

Since the zero of the carbine is 200 meters, some modifications in the system for scoring the weapon have become necessary. The zero of the carbine is obtained by firing on a 25-meter range and placing the shot group 8.5 centimeters above the point of aim. The record course also has been modified, since carbine targets extend only 200 meters instead of to 350 meters in the rifle course. The difference is made up by exposing the shorter-range targets more often.

The similarity between carbine and rifle Trainfire courses permits the use of one range for both. It has been assumed that all men armed with the carbine will have previously fired the rifle course. For this reason, target detection is scheduled as concurrent training and may be eliminated if time is short. This consideration makes it possible to fire the carbine course in 46 hours as compared to the 78 hours required for the rifle course. It is anticipated that the carbine Trainfire course will be implemented when Trainfire ranges for the rifle are in operation.

Protective Minefields

The authority to employ *protective minefields* has been retained at battle group or higher echelon, according to a recent decision of U. S. Continental Army Command. Battle group commanders, like battalion commanders in the old triangular organization, may delegate the authority to employ this type minefield to company commanders for certain missions. But it is not anticipated that the battle group commander, who is the lowest commander with the authority to employ *defensive minefields,* will be given the option of delegating that authority to company commanders.

FIELD MANUALS

The following training literature is being written or rewritten. Publication cannot be expected until later this year:

FM 7-10, Rifle Company, Infantry Division Battle Group (new)

FM 7-40, Infantry Division Battle Group (new)

FM 21-150, C1, Hand-to-Hand Combat (change)

FM 72-20, Jungle Operations (revision)

DA Pamphlet 23-2, Hits Count (revision)

The following manuals have been forwarded to USCONARC for approval:

FM 21-18, Foot Marches (revision)

FM 23-32, 3.5-inch Rocket Launcher (revision)

FM 23-82, 106mm Rifle, M40A1 (revision)

ROTCM 145-60, Small Unit Tactics

Including Communications (revision)

ROTCM 145-80, Logistics (revision)

ROTCM 145-100, Service Orientation (revision)

The following manuals have been forwarded to Department of the Army for approval and publication:

FM 57-35, Army Tactical Transport Aviation Combat Operations (new)

ROTCM 145-41, Crew Served Weapons and Gunnery (revision)

The following manuals have been published by Department of the Army and are available to instructors through normal supply channels:

FM 21-20, Physical Training (revision)

FM 21-50, Ranger Training (new)

FM 23-71, Rifle Marksmanship Course Trainfire I (new)

ATT 11-25, Signal Battalion, Infantry Division, TOE 11-5T (ROCID) (new)

TRAINING FILMS

The following training films have been approved for release to requesting units:

GF 19-32, Riot Control Formations—Part III—Vehicles and Foot Formations, 12 minutes

MF 5-8275, Maps for the Army, 38 minutes (color)

MF 5-8854, Engineers in Combat—World War II, 24 minutes

MF 11-8842, Security and You, 18 minutes

MF 12-8767, Harry's Hat Hangs High—NCO Leadership, 21 minutes (color)

MF 16-8599, Are You Ready for Service?—What It's All About, 10 min.

MF 16-8600, Are You Ready for Service?—Getting Ready Morally, 10 minutes

MF 16-8601, Are You Ready for Service?—Military Life and You, 10 minutes

MF 16-8825, Are You Ready for Service?—Why You, 13 minutes

MF 20-8783, Paddle a Safe Canoe, 15 minutes

MF 20-8844, Knowing's Not Enough (safety), 28 minutes

OC 13, Mission of the United States Air Force, 33 minutes

SFS 5-119, U. S. Heavy Antitank Mine, M15, 10 minutes (color)

SFS 5-120, Soviet TM-41 Antitank Mine, 6 minutes

SFS 5-144, Aluminum Floating Footbridge, 11 minutes

TF 5-2217, Explosives and Demolitions—Part I—Demolition of a Reinforced Concrete "T" Beam Bridge, 9 minutes

TF 5-2351, Demolitions—Non-Electric Priming, 8 minutes

TF 5-2352, Demolitions—Placing, Spacing and Tamping Breaching Charges, 5 minutes

TF 5-2408, Map Reading, Basic: Characteristics of Contour Lines, 6 minutes

TF 5-2413, Map Reading, Basic: Location, 4 minutes

TF 5-2455, Land Mine Warfare, Full-Release Firing Device, M3, 8 min.

TF 5-2457, Crane-Shovel Unit, Detaching the Shovel Front, 8 minutes

TF 5-2458, Crane-Shovel Unit, Attaching the Piledriver, 6 minutes

TF 5-2459, Crane-Shovel Unit, Attaching the Backhoe, 7 minutes

TF 5-2460, Crane-Shovel Unit, Attaching Clamshell and Dragline Buckets, 7 minutes

TF 5-2461, Crane-Shovel Unit, Attaching the Crane Front Ends, 7 minutes

TF 5-2463, Guided Missile Equipment—NIKE—Flow Control and Door Cushioning Adjustment, 5 minutes

TF 5-2465, Guided Missile Equipment—NIKE—Door Cylinders, Removal, 7 minutes

TF 5-2467, Guided Missile Equipment—NIKE—Power Unit Belt Replacement, 9 minutes

TF 9-2500, Automotive Trouble Shooting—Part IX—Springs and Shock Absorbers, 19 minutes

TF 9-2510, Fundamentals of Ammunition Renovation, 32 minutes

TF 9-2537, Ignition Timing—GMC Engine, 5 minutes

TF 9-2542, Preparation of Vehicles for Deep Water Fording—Part II—Track Vehicles, 32 minutes

TF 16-2515, Gratitude—Thanks to Whom? 5 minutes

TF 17-2495, Medium Wrecker Truck, M62—Part II—Power Plant Removal, 7 minutes

TF 19-2540, Investigation of Narcotics Offenses, 40 minutes

TF 20-2561, The Pentomic Army, 50 minutes (color)

TF 44-2166, NIKE-AJAX Battery, Energizing and Deenergizing the Ground-Guidance Equipment—Part I—Acquisition Radar (U), 18 minutes

TF 44-2171, NIKE-AJAX Battery, Emergency Energizing Checks and Adjustments—Part III—Computer (U), 20 minutes

TF 44-2168, NIKE-AJAX Battery, Energizing and Deenergizing the Ground-Guidance Equipment—Part III—Missile Tracking Radar, 11 minutes

TF 44-2360, The Skysweeper—Artillery Drill, 27 minutes

TF 44-2528, Operation of the Skysweeper Radar, 36 minutes

TF 44-2530, NIKE—Guardian of the Cities, 15 minutes

TF 55-2312, Helicopter Maintenance—Part V—Rotor Blade Inspection, Repair and tracking (H-19, H-34, H-37), 33 minutes

INSTRUCTIONAL MATERIAL

The following instructional material is suitable for resident as well as nonresident instruction and may be ordered from

the Book Department, United States Army Infantry School, Fort Benning, Ga., at the prices shown:

Driver Selection and Training, 4984-USAR, 1 hour. An integrated conference and demonstration covering the selection and training of wheeled- and tracked-vehicles. 15¢.

Battle Group in Withdrawal from Action, 2414-A6-USAR, 6 hours. A map exercise illustrating the principles applicable to the planning for a reinforced Infantry battle group in both a night and a daylight withdrawal from a defensive position. 70¢.

Field Fortification and Camouflage, 2748-USAR, 2 hours. An integrated conference and demonstration covering the techniques and principles of construction of field fortifications, wire obstacles, and camouflage planning. 15¢.

Vehicle Recovery, 4711-USAR, 1 hour. Integrated conference and demonstration covering mobility factors; principles and techniques of vehicle recovery. 10¢.

Vehicle Familiarization, 4900-USAR, 1 hour. Integrated conference and demonstration of vehicles assigned to the Infantry division battle group, covering nomenclature, capabilities and ease of maintenance features; trends and developments. 15¢.

The Personnel Carrier and M-Series Tanks, 4970-USAR, 2 hours. Conference and demonstration covering the characteristics of the personnel carrier, external and internal automotive features to include a discussion of preventive maintenance indicators, capabilities and limitations of the vehicle; discussion of organic M-series tanks. Practical exercise in the conduct of an inspection of a personnel carrier by use of preventive maintenance indicators. 15¢.

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Pentomic materials available

Problems, handbooks and other instructional materials have been developed by the United States Army Infantry School for the pentomic Infantry division. Here are a few of the many items now available for purchase from the Book Department:

2041-USAR Rifle Platoon in the Attack	.20
2062-USAR Weapons and Assault Gun Platoon in the Attack	.45
2140-USAR Rifle Company in Attack, Mounted	.85
2239-USAR Rifle Company in Retrograde Movements	.70
2245-USAR Rifle Company in Defense	.70
2301-A6-USAR Battle Group in the Attack (6 Hrs. Terrain Exercise)	.25
2301-A14-USAR Battle Group in the Attack (4 Hrs. Terrain Exercise)	1.50
2304-USAR Battle Group in the Attack (4 Hrs. Map Exercise)	1.75
2318-USAR Battle Group in Night Attack	.90
2332-USAR Battle Group in the Attack	1.20
2401-USAR Battle Group in Position Defense	.90
2406-USAR Battle Group in Strong Point	1.10
2408-USAR Battle Group in Defense	1.20
2503-USAR Battle Groups of the Brigade in Delaying Action	.95
2506-USAR Battle Groups of the Brigade in Attack—Mobile Operations	1.75
2662-USAR Mortar Battery in Action	.45
2775-USAR CBR Warfare	.20
2795-12-USAR Defense Measures against Atomic Explosions	.25
3631-USAR Communication System of the Rifle Company	.20
3632-USAR Communication System of the Rifle Company and Mortar Battery	.40
3635-USAR Communication System of the Battle Group	.20
3636-USAR Communication System of the Infantry Division, ROCID	.30
4970R-USAR Personnel Carrier & M-Series Tanks	.20
6612A-USAR Collection of Information	.75
6628-USAR The S2 at Work	.95
7251-USAR Preparation of a Field Exercise—Rifle Platoon in Attack (ROCID)	.70
Combat Operations Handbook	.25
Command and Military Leadership Handbook	.30
Combat Logistics Handbook	.45
Advance Sheet, Infantry Division Battle Group	.65
Trainfire I	.10
New Lightweight Rifle System	.05
Commanders Handbook for Preventive Maintenance	1.60

A catalog of all available items will be sent upon request. If order is less than $5.00, add 25¢ for postage. For orders of more than $5.00, add five percent of the total amount of the order. Please include remittance with order or, if the material is for a unit, give billing instructions. Only members of the U. S. Armed Forces (Active Army, National Guard and Reserve) are permitted to purchase this material, and military identification must be furnished with order.

***Write:* The Book Department, U.S. Army Infantry School, Ft. Benning, Ga.**

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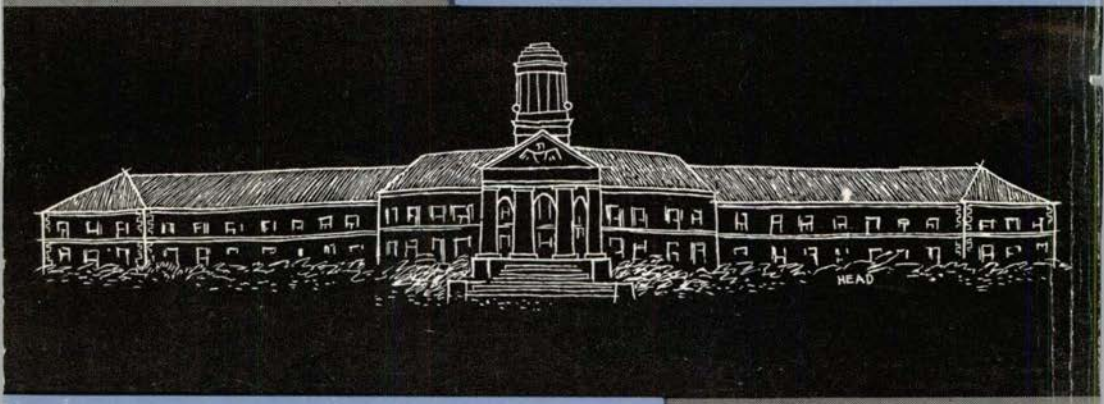

In this issue:

- The Infantryman in the Atomic Age
- The Soviets Forge Ahead
- Carrier Battle Drill
- Easing the Load on the Infantryman's Back
- The Caliber .45 Pistol
- Medical Service for Modern Combat
- The 'R' of CBR
- Battle Group in the Attack
- Training for Combat