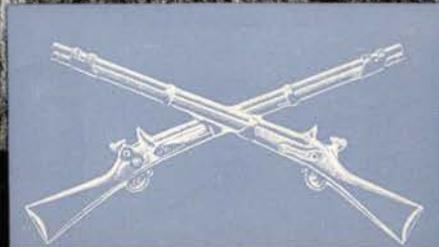


Infantry



The Professional Journal for Infantrymen

Oct-Dec 1958

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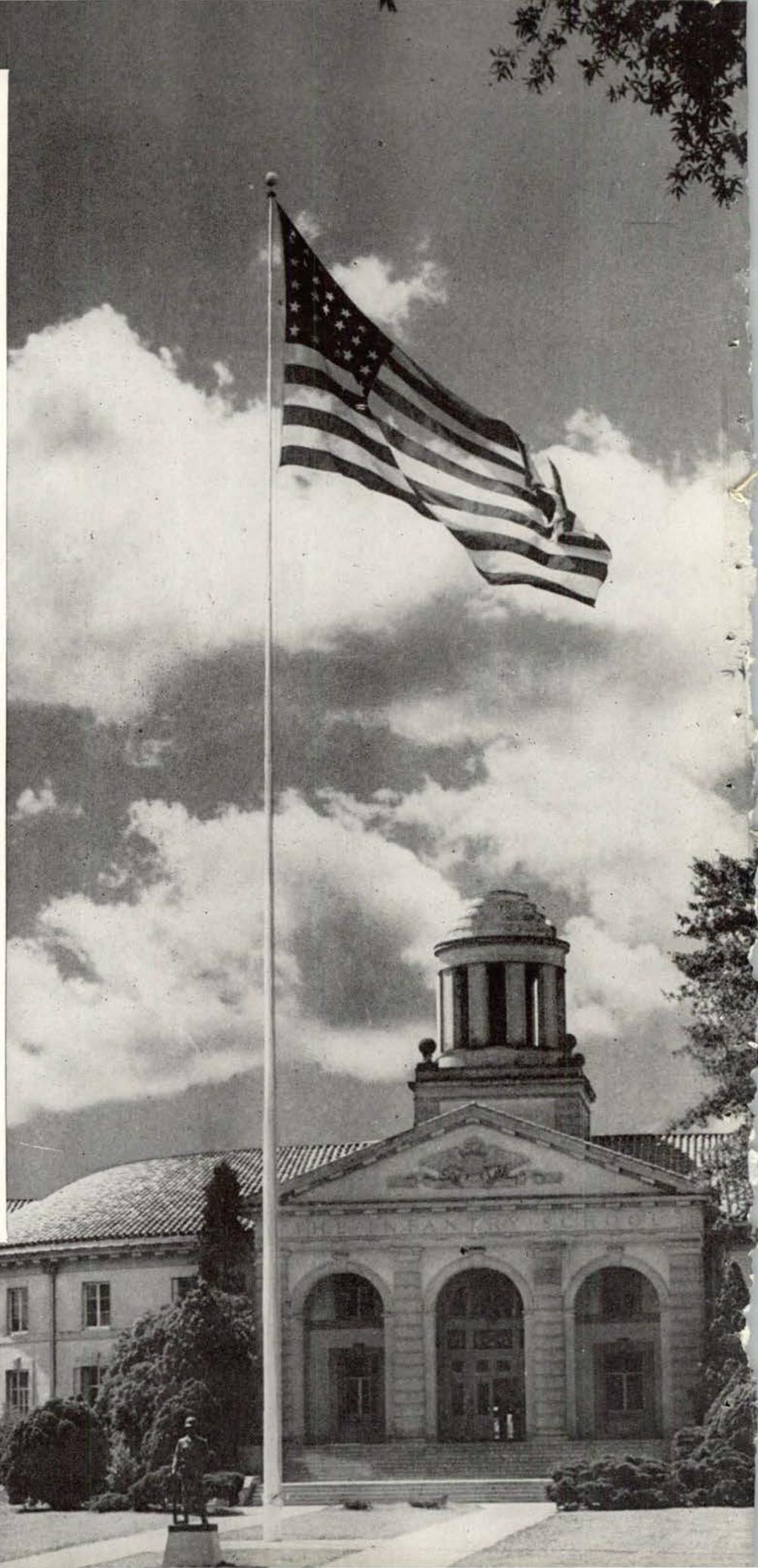
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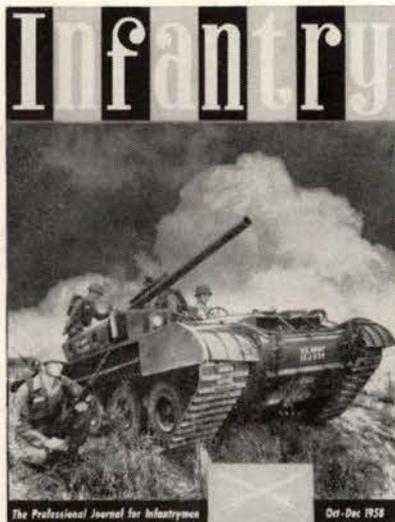
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THE COVER

The Infantry has found an important short cut to its ground mobility requirements. The light, rugged carriage of the M56 antitank gun appears to meet our immediate need for a highly mobile weapons platform. The cover photo shows the M56 mounted with the 106mm recoilless rifle. For a close look at this versatile vehicle as a platform for other Infantry weapons and as a personnel carrier, see the two-part article, *Tracks for the Infantry*, on page 4. Cover photo by Sgt Louis F. Castagnaro and Sp5 Ivar S. Anderson.



Infantry

The Professional Journal for Infantrymen

OFFICIAL PUBLICATION

UNITED STATES ARMY INFANTRY SCHOOL

VOL 48 Fourth Quarter October-December 1958 No. 4

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UNITED STATES ARMY

THE CHIEF OF STAFF

15 August 1958

Dear General Freeman:

The official Infantry School publication has long been regarded as a valuable source of new ideas and information on Infantry doctrine and techniques since its inception by General George C. Marshall, then Assistant Commandant. After reviewing the first issue of the expanded *Infantry* magazine, I consider it to be a first-class professional journal in keeping with its established tradition.

A professional journal of this type assumes great importance in this era of rapid change. Today's officer and non-commissioned officer must read widely to expand his professional knowledge and to aid his development. The accelerated tempo of change brought on by new concepts, organizations, and materiel demands the rapid exchange of know-how. This quickened pace is a spur to the stimulation of thought among professional soldiers. Accordingly, I urge all Infantrymen and members of the other arms and services who work with the Infantry to place *Infantry* on their personal reading lists. Submission of articles on Infantry operations and related subjects for publication in *Infantry* is also encouraged.

The new and larger format of *Infantry* is effective and in keeping with the high standards of the Infantry and the U.S. Army Infantry School. I am sure this excellent publication will continue to make a significant contribution to the Infantry and to the Army.



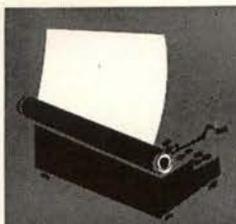
General Maxwell D. Taylor

Sincerely,

A handwritten signature in dark ink that reads "Maxwell D. Taylor". The signature is written in a cursive, flowing style.

MAXWELL D. TAYLOR
General, United States Army
Chief of Staff

FROM THE CHIEF OF STAFF



THE EDITOR SAYS

DEAR READER:

Comments received from a representative cross-section of *Infantry* readers indicate that the new format meets with general approval. Now that the task of enlarging the magazine has been successfully accomplished we shall undertake additional improvements.

In announcing the new format we stated that the "dress" of *Infantry*, like the "sack" and the "chemise," was deliberately calculated to stimulate interest and to allow greater flexibility while still covering the same basic features. Experience with the first

two issues, however, reveals that we may be able to improve the over-all effect of the new creation by adding to and rounding out the form within the dress.

The increased size of the magazine offers opportunities for a wider variety of material. Beginning with the next issue we plan to introduce several new features which should contribute to a more effective professional journal. We expect to have a regular column of material from The Officer Assignment Division, Department of the Army. Tentative arrangements have been made for *Infantry* to receive information on policies and actions concerning assignments, promotions, schooling and other items which affect the careers of Infantrymen.

We plan also to initiate a feature to be called "The Sounding Board." It is felt that we should provide Infan-

trymen with an opportunity to "sound off" on constructive and thought-provoking ideas or suggestions. We wish to receive original thinking on organization, equipment, tactics and techniques which will help to improve the Infantry. Such articles should be short and pithy—500 words or less.

Still another feature which we hope to publish is a series of short, "pro-and-con" articles on important, controversial topics. Through these articles we hope to present factual and unbiased discussion on both sides of problems which affect the Infantry.

Other features are under consideration. If you have any recommendations for material which will make *Infantry* more useful to you and your unit let us know. *Infantry* is your professional journal. We want to make it the best possible.

EDITOR



LETTERS TO THE EDITOR

The New *Infantry*

Sir:

Please accept my sincere congratulations on the new format of the July-September issue of *Infantry*.

Reading of *Infantry* can only prove profitable for any Army officer or NCO, regardless of rank, branch or service, particularly if associated with troops and more particularly if on a MAAG assignment with foreign troops.

S. T. WILLIAMS
Lieutenant General, USA
Chief, MAAG
Saigon, Vietnam

Sir:

CONGRATULATIONS on your new *Infantry*. If you can maintain the standards you set with the articles in the July-September issue, you will have the answer to our dreams.

ALBERT E. COLEBANK
Capt, Infantry
Odenton, Md.

Sir:

We just received our copy of the new *Infantry* magazine. It is grand! Congratulations!

MARVIN J. BERENZWEIG
Lt Col, Infantry
U.S.M.A., West Point, N. Y.

Sir:

The Infantry School is spreading itself these days with all kinds of innovations. I see you're even changing the face of your official publication, *Infantry*. The magazine presents an attractive dress. The Editor's comment on page 3 was most humorous,

"Like the 'sack' and the 'chemise,' *Infantry's* new dress is deliberately calculated to stimulate interest and to allow greater flexibility while still covering the same basic features." The light touch is appreciated in these days of conflict.

Much favorable comment is heard in our shop concerning *Infantry*. . . . We hope that it will continue to be the harbinger for the Infantryman.

H. P. STORKE
Maj Gen, GS
Chief of Information

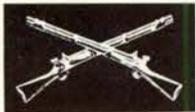
Sir:

Infantry is a fine magazine. . . . I find it pleasant, as well as informative, reading. It was especially helpful during my attendance at the Field Artillery Battery Officer Course this year.

Congrats on your new format. It's really "first team."

ROBERT L. ELDER
1st Lt, Artillery
Louisville, Kentucky

Continued on page 74.



Essential to battlefield mobility

TRACKS FOR THE



INFANTRY

An important discussion of the M56 "Scorpion" and of its adaptability as a multi-purpose carrier to increase Infantry mobility.



THIS is a two-part article on the versatile M56. Designed and recently standardized by the Army as a self-propelled, airborne antitank gun, the M56 answers the Infantry's immediate need for a light, full-tracked, highly mobile antitank weapon. But equally important, its rugged, efficient carrier could give the Infantry a much-

needed, mobile platform for other Infantry weapons.

In Part I, Capt Wayne L. Seeley and Lt William T. Pye discuss the M56 in some detail—its characteristics, capabilities and tactical employment. In Part II, Maj Albert L. Kotzebue shows how, with only minor modifications, the M56 will provide the Infantry with a remarkable, full-

tracked platform for such weapons as the 106mm recoilless rifle, the 4.2-inch mortar, the 81mm mortar, the quad .50 multiple machinegun and antitank missiles. Major Kotzebue also discusses the possibility that a recently developed amphibious version of the M56 may provide the chassis for a new and more versatile Infantry personnel carrier.—Editor.

Part I. The Scorpion

By Capt Wayne L. Seeley and Lt William T. Pye

THE Army's newest development in the field of antitank guns is the M56, a self-propelled, airborne, 90mm antitank weapon. Originally known as the SPAT, it was later designated the "Scorpion." Although this versatile weapon was adopted by the Army last year when it was incorporated into the TOEs of the pentomic Airborne and Infantry divisions, many Infantrymen are not familiar with it because it has not been available in sufficient quantity for delivery to the

Infantry division. Meanwhile, the assault gun platoon of the Infantry division battle group has been equipped with the M48 tank. But now it appears that Infantry divisions will soon begin to receive the Scorpion.

The requirement for a self-propelled antitank gun was established during a conference on antitank defense which was held at Fort Monroe in October 1948. A few months later panels on Armor and Artillery also expressed an urgent need for such a

weapon, and in April 1949, Army Field Forces Board No. 2 outlined desired military characteristics for an airborne antitank gun. A contract was then let for the development and production of pilot vehicles. The final, accepted version was the M56.

Airborne Infantry units were impressed with the new weapon as a replacement for their towed 76mm and 90mm guns. But some Infantrymen felt that the lack of armor protection and the absence of a secondary weapon on the gun carriage made the M56 questionable for the standard Infantry division. However, more experience with the Scorpion seems to be overcoming these objections. The speed, maneuverability,

CAPT. WAYNE L. SEELEY enlisted in the Army in 1949 and received an OCS commission at Fort Riley two years later. He then attended the Associate Infantry Officers Course, the Basic Airborne Course and the Jumpmaster Course at Fort Benning before joining the 20th Infantry Regiment, 5th Infantry Division, at Fort Ord. In 1952 he was assigned to Korea, where he served as a platoon leader, a company commander and finally a battalion S2 with the 180th Infantry Regiment, 45th Infantry Division. After a short tour in the United States with the 503d Airborne Infantry Regiment, 11th Airborne Division, Captain Seeley went to Hawaii, where he served with the Hawaiian Infantry Training Center and later with the 25th Infantry Division. Upon graduation from the Infantry Officers Advanced Course in 1957, he began his current assignment as an instructor with the Tank-Recoilless Weapons Committee of the Weapons Department at USAIS.

LT WILLIAM T. PYE first entered the Army as an enlisted man in 1946. Following a three-year tour of duty he was discharged from the service, but reentered the Army in 1950 and attended a noncommissioned officer's course in light and heavy weapons at the Infantry School. Two years later he was commissioned a second lieutenant upon graduation from Officer Candidate School at Fort Benning. He then became executive officer of Tank Company, 129th Infantry Regiment. Afterwards he went to Korea, where he served with the 35th Infantry Regiment. Upon returning to the United States in 1954, he reverted to enlisted status and later served as sergeant major of the 2d Battalion, 6th Armored Cavalry Regiment in Germany. Following this enlistment, he was recalled to duty as a commissioned officer and was assigned to his present position as an instructor with the Tank-Recoilless Weapons Committee of the Weapons Department, United States Army Infantry School.

light weight, low silhouette and other advantages of the M56 make it an effective and desirable weapon.

The M56 is a highly mobile, non-armored, full-tracked 90mm gun. For a self-propelled gun of this caliber it is quite light. Combat loaded it weighs only 7¾ tons. A low ground pressure of 4.5 pounds per square inch enables the weapon to traverse muddy and marshy terrain, snow or sand. It can be transported in assault-type cargo aircraft, such as the C130, and is fully capable of being air dropped.

The Scorpion is low, rugged and highly maneuverable. It can climb a 60% slope, surmount a 2½-foot vertical obstacle, span a 4-foot antitank ditch and ford 3½ feet of water. If equipped for deep water, it has a fording capability of 5 feet. The height of the weapon is only 6 feet, 4⅛ inches. Although it is 8 feet, 5 inches wide and measures 19 feet, 2 inches from the muzzle of the gun to

the rear tip of the towing pintle, it can turn within an 8-foot radius. Incidentally, the towing pintle has a drawbar pull of 10,000 pounds.

The gun is propelled by a 200 horsepower, six cylinder, horizontally opposed, air-cooled engine. A cross-drive torque-converter transmission is bolted to the engine to form a single power package. This package can be lifted vertically from the engine compartment as a unit for maintenance or replacement. With a fuel capacity of 50 gallons it has a cruising range of 50 to 150 miles, depending on the terrain and the speed at which it is driven. Although it is capable of going faster, the engine normally is governed to 30 miles per hour. Cross-country driving at any greater speed is hazardous.

The electrical system is 24 volts, with waterproof wiring and magneto ignition. No auxiliary generator is required.

The track system is unique, trouble free and highly dependable. Each track has two bands which are made of rubber, fabric and steel cables. These bands are joined by pressed steel, rubber-faced crossbars to form a track approximately 20 inches wide. Four steel wheels mounted with pneumatic tires and suspended by torsion bars and torsion tubes ride on each track. Unusual for a tracked vehicle, the pneumatic tires are an important feature of the M56. They are combat type, tubeless and self-sealing, and carry an air pressure of 75 pounds. If hit or damaged they do not immobilize the vehicle.

The Scorpion's 90mm gun is essentially the same as that mounted on the M48 tank and fires the same type of ammunition. A basic load of 29 rounds is carried on the weapon. Each round is stored in an individual, waterproof, aluminum container and is readily accessible to the loader from his position on the back deck of the carrier.

The weapon is operated by a crew of four men—a commander, gunner, loader and driver. The duties of the crewmen are described by their titles. The gun is controlled manually by the gunner and is capable of being traversed a total of 60 degrees. It can be elevated to a plus 15 degrees or depressed to a minus 10 degrees. A straight-tube, variable-power telescope is multiple-reticled for HE, AP-T, HVAP and HEAT ammunition (Figure 1) and is the only direct-

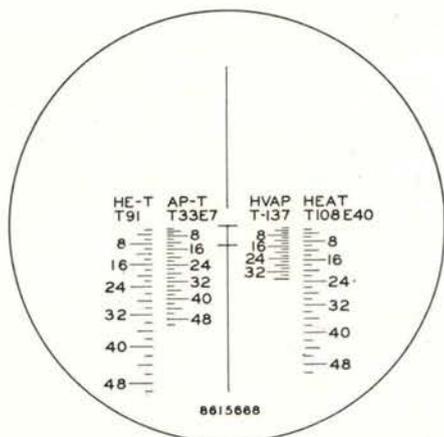


Figure 1.

fire sight provided for the gun. Normal instruments for indirect fire are provided.¹ To engage a target, the commander announces the estimated range in his fire command. The gunner then indexes the announced range on the reticle of the telescope for the desired type of ammunition. The commander observes and adjusts the fire by using his binoculars and issuing subsequent fire commands. In general the indirect-fire techniques used with the M48 tank are adaptable to the M56. A range card can be prepared in the same manner as for the tank gun. The 90mm gun does not have the capability of being ground mounted nor does it have auxiliary weapons such as machineguns.

At present the only provision for communication for this weapon is a base mount which will accommodate an AN/PRC-10 radio with an amplifier 598/U or W. However, other types of communication equipment are being considered.

First-echelon (preventive) maintenance for the M56 is essentially the same type as that required on any full-tracked vehicle and gun, except for track adjustment. The unique construction of the Scorpion's tracks eliminates stretch and makes adjustment unnecessary. Careful design and engineering have further simplified and reduced the amount of preventive maintenance required. Experience to date indicates that no more first-echelon maintenance is needed on the M56 than on the ¼-ton truck. However, that which is needed must be performed carefully and regularly.

The M56 has some of the advantages of the M48 tank which we have been using as our assault gun, but it does not provide armor protection for the crew. This might be considered a weakness—but *is* it? We know that as we increase the thickness of armor protection, a round is developed that will penetrate it. Also with each added inch of protection we increase weight and decrease mobility. We

¹The indirect-fire instruments with which the M56 was originally equipped have been removed and will be replaced as soon as new instruments, now undergoing tests, have been approved.



Rear view of the Scorpion. Note racks for ammunition storage.

reach a point of no return. The Scorpion relies on a good gun, a good crew and mobility. And it has a distinct advantage over the tank in its ability to be moved rapidly by air, over obstacles to any location on the battlefield. It can go just about anywhere the Infantryman can go, and it presents no major resupply or maintenance problems.

This brief look at the M56 would not be complete without some discussion of the employment of the weapon and the assault gun platoon. In discussing the tactical use of the weapon we must consider its characteristics and capabilities. Four major considerations should be kept in mind: the capabilities of the 90mm gun and its ammunition, the extreme mobility of the carrier, the lack of armor protection for the crew and the weapon, and the ability of the M56 to be air transported or air dropped. Discussion of the tactical employment of the assault gun platoon will be confined to general considerations of the offense, de-

fense and aerial assault by the battle group of the airborne division.

In the offense the most desirable method of employment is *general support*, since the fires of the assault gun platoon can be massed and platoon communications and mobility enable it to move to any part of a zone of action. If the guns are initially employed to provide direct fire support for attacking Infantry and an enemy tank threat develops, the platoon should immediately revert to the anti-tank role. The guns should be employed, whenever possible, by section, with each weapon providing protection and support for the other.

The battle group commander may find it necessary or desirable to decentralize control of the assault gun platoon. He can accomplish this by making *attachments* to his subordinate units. These attachments may be complete or with limitations, i.e., for operational control. The entire platoon or a portion of it may be attached for operational control if its



The M56 mounting the 106mm rifle can be airlifted by the H37 helicopter.

for Infantry ground support. Yet it virtually has been dropped from the arsenal of Army weapons for lack of a suitable carrier. On the M16 half-track or a towed trailer mount, it has always been at a disadvantage because of limited mobility. Mounting the quad .50 on the M56 was relatively simple, and firing proved the

carrier to be a stable platform. Enlisted men who have worked with the quad .50 for years are particularly enthusiastic. They feel that here at last is a carrier which will permit the full capabilities of the weapon to be exploited.

The M56 was next tested as a carrier and firing platform for the 81mm

and 4.2-inch mortars. A special adapter was fabricated to accept the spherical projection of the 81. Firing tests conducted last March were highly successful. The carrier absorbed the recoil with no difficulty, and accuracy was well within acceptable limits.

The 4.2-inch mortar presented a bigger problem. A special base plate was manufactured to accommodate the rotator of the standard base plate, and a special stand was made for the bridge. The weapon was then tested, with each successive round being fired at a progressively higher charge. A total of 16 rounds were fired at maximum charge (41) with no apparent damage to the carrier. Sight deviation after each round was no greater than when the mortar is fired from the ground.

While not yet tested, it is believed that the M56 would also provide an excellent platform for guided anti-tank missiles.

Any new item of equipment today must be considered with respect to its air transportability. While the M56, with any of the weapons tested, is fully air transportable and air drop-

The M56 as a firing platform for the 4.2-inch mortar.



able from fixed-wing planes, the question arose as to whether it could be lifted by any of our current rotary-wing aircraft. Such a capability would further increase the effectiveness of carrier-mounted weapons. In April the M56 was successfully lifted by an H37 helicopter, using external slings. The H37 had no difficulty lifting the M56 stripped, with a curb weight² of 8500 pounds. With the 106 and kit—an added weight of 1000 pounds—the helicopter operated at near maximum power to lift the vehicle, but once airborne had sufficient power to haul it two miles. Further tests are needed to establish the feasibility of this means of negotiating obstacles.

Tests are now being made on an amphibious version of the M56 for use as an Infantry personnel carrier which will carry nine men. If these tests are successful, and there is every indication that they will be, the new carrier will be a definite improvement over the present M59 armored personnel carrier. It will be lighter (15,000 vs 42,500 lbs) and less bulky. It will have greater cross-country mobility and will cost a good deal less.

It should be pointed out that pro-

²Curb weight refers to the weight of a vehicle without a combat load.



A personnel carrier version of the M56.

ponents of the M56 as a multi-purpose carrier do not consider it the final answer to the Infantry's mobility problems. It is proposed as an immediately available interim carrier to bridge the gap between the jeeps and towed weapons of World War II and advanced concepts for the future.

There may be some objection to the M56 as a carrier for the 106mm rifle because it is a larger and heavier vehicle than is actually needed for

this weapon. A 4000-pound vehicle of smaller dimensions with the same cargo capacity and cross-country maneuverability as the M56 certainly would be more efficient and desirable. But when could we expect to get such a vehicle? It took nine years to develop and produce the M56, on a high priority basis. While a new vehicle probably could be produced in less time than this, we still would be without a satisfactory carrier for several years.

Another objection may be the possibility of increased maintenance problems. Such problems normally are associated with tracked vehicles, but this should not be a serious objection in the case of the M56. Experience with this vehicle indicates that maintenance problems will not exceed those of the ¼-ton truck. The band-type track eliminates track adjustments, and first-echelon maintenance consists solely of lubricating, adding engine and transmission oil, and normal tightening and spot painting. All engine or suspension-system repair would be done at third echelon. Furthermore, since it is visualized that all Infantry eventually will move over the battlefield in fighting vehicles—probably tracked—our commanders should learn now to cope with the

The carrier is amphibious.



for the disposition of forces. These two elements are interdependent and are developed concurrently. The fire support plan establishes an artillery organization for combat which will provide the most effective artillery support for that operation. Artillery organization for combat places each artillery unit in a tactical headquarters and assigns each a tactical mission. More simply stated, each artillery unit is given a *home* and a *job*. Under most conditions, the mortar battery already has a home—the battle group. All that remains to be done then, is to give it a job—a tactical mission.

A tactical mission is the first support responsibility that may be assigned to an artillery unit. There are three types of tactical missions, each with definite inherent responsibilities, and each battle-proven in World War II and Korea. These tactical missions are *general support*, *direct support*, and *reinforcing*. Since a tactical mission delineates an artillery unit's fire support responsibility, we can assure proper artillery support by assigning a proper tactical mission.

"Who is responsible for assigning a tactical mission to the mortar battery?" The answer to this, of course, is the battle group commander. Next, we might ask, "Which of these missions may be assigned to a mortar battery?" Under various tactical situations, any one of the three tactical missions may be assigned. And finally, "What is meant by each of the missions?" Briefly, an artillery unit with a mission of general support provides fire support for the force as a whole. An artillery unit with a mission of direct support provides fire support for a specific unit of a force, while an artillery unit with a mission of reinforcing is required to augment the fires of the reinforced artillery unit on call.

With the assignment of an organic artillery unit to the battle group, it became evident that no one of the three tactical missions provided exactly the type of fire support which



4.2-inch mortar mounted in the M59 personnel carrier.

the battle group normally required. The battle group would most certainly want its artillery battery to provide fire support for the force as a whole, but at the same time it was apparent that a very close relationship must exist between the artillery battery and each of the rifle companies, if close and continuous fires were to be provided, as in the case of direct-support artillery. Therefore, with these thoughts in mind, it was determined that a tactical mission of general support, at battle group level, includes the following inherent responsibilities:

Command: Under command of the battle group.

Calls for Fire: Answers calls for fire from the battle group and own observers.

Liaison: Establishes liaison with battle group.

Communication: Superior to subordinate.

Zone of Fire: Zone of action of the battle group.

Forward Observers: To each rifle company.

Displacement: At the discretion of the battery commander or on order of the battle group.

Normally, the battle group mortar battery will be assigned a tactical mission of general support, with the responsibilities outlined above. With this mission, the battery maintains centralized control of fires—one fire direction center. Among the more important advantages of centralized control are a sustained operating capability and the ability of more rapidly massing the fires of the battery. This does not mean that the tubes themselves are massed. On the contrary, within a platoon the mortars are emplaced laterally, 40 to 45 yards apart in a staggered formation, while the two platoons may be separated by several hundred yards.

Tactical situations may exist, however, which will not permit the use of mortar battery under centralized control, such as battle group operations over an extended front, operations in mountainous terrain which limits communication, and battle group offensive action on two or more axes. Under such circumstances, a mortar platoon should be augmented by fire direction, forward observer, survey and communication personnel from battery headquarters, and

may then be assigned a tactical mission of direct support of an element of the battle group. With this organization for combat, the battle group commander has decentralized *control* of fires to those who need them while retaining *command* of fires so that they can be massed, at the appropriate time, for the force as a whole.

Present doctrine prescribes that mortar batteries of reserve battle groups may be placed in support of committed battle groups. The decision to detach a mortar battery from its parent battle group rests with the division commander. If the division commander decides to detach a battery from its parent battle group, he may attach it to division artillery, where it normally would be assigned a mission of reinforcing the fires of a

mortar battery of a forward battle group, or he may attach it to a forward battle group. When attached to a battle group, the battle group commander may organize for combat by assigning the attached mortar battery a mission of reinforcing the fires of his organic mortar battery or he may further attach the mortar battery to his organic mortar battery, thus forming a battery group. While either is an acceptable solution, the formation of a battery group generally is preferable because it centralizes both command and fire direction.

Detachment of a mortar battery from its parent battle group in reserve will be made only when the battery can be returned in time to support the battle group in whatever action it is committed. When a bat-

tery is detached, forward observer and liaison personnel are left with the parent battle group to assist in fire planning.

From the Battle of Buena Vista, in which Zachary Taylor called for "A little more grape, Captain Bragg," to the battlefields of Korea, where Major General David C. Barr, while commanding the 7th Infantry Division, said, "There is nothing the artillery won't or can't do; no place the artillery won't or can't go," the artillery has accepted with pride its mission of supporting the ground-gaining arms.

This, briefly, is the organization and tactical employment of the battle group mortar battery. Accept it for what it is—a member of the battle group team—the battle group commander's personal artillery.

WORLD-WIDE INFANTRY CONFERENCE

KEY Infantry commanders and top military leaders from all major echelons of the Army will assemble at Fort Benning the first week in December for a World-Wide Infantry Conference—the first of its kind in more than a decade. Powerful weapons, new organization and changing doctrine have dictated the need for such a meeting.

Purposes of the Conference are to look at and appraise new weapons and equipment, including those on the drawing boards for future development; to discuss and evaluate Infantry organization and tactical concepts for atomic and nonatomic warfare; to develop unified thinking and courses of action for Infantry combat on the modern battlefield; and to give U.S. Army Infantry commanders from all over the world an opportunity to share ideas and experiences.

Host for the World-Wide Conference will be Major General Paul L. Freeman, Jr., Commanding General of the U.S. Army Infantry Center and Commandant of the U.S. Army Infantry School. Among the key military leaders scheduled to attend the 2-5 December meetings will be Secretary of the Army Wilber M. Brucker, who will address the Conference. Delegates will include senior representatives from all overseas armies, corps, Infantry divisions and other Infantry units. Key officers from Department of the Army, the United States Marine Corps, U.S. Continental Army Command, the technical services and the various service schools also will attend.

Representing the Reserve Components at the Conference will be the Assistant Chief of Staff for Reserve Components and the Chief of the National Guard Bureau; the Deputy Commanding General for Reserve Affairs, USCONARC; and two general officers each from the National Guard and the Army Reserve.

The program for the comprehensive four-day event will include demonstrations, displays and discussions of major developments having significance to the Infantry. Beginning with an intelligence summary of the latest Soviet Infantry tactics and equipment, the Conference will provide a survey of the American Infantry of today and the future. Conferees will be afforded the opportunity to become familiar with the characteristics of new weapons and equipment, as well as mid-range and long-range plans for their integration into Infantry units.

Items of major importance will be discussed in detail, to include physical and performance data, current status of development, items to be replaced and anticipated basis of issue to troops. Highlighting the important conference will be presentations by representatives of Department of the Army, USCONARC, the Command and General Staff College, the United States Army Infantry School and other agencies.

Committees dealing with the major topics under discussion will be formed from senior Infantry commanders and staff officers. Throughout the Conference these committees will closely monitor the presentations and discussions concerning their specific areas of interest. At the conclusion of the meetings, the committees will discuss their observations and prepare reports on their findings and recommendations.



The sled is used to support the M60 machinegun.

subject to wear. But the new Arctic Oil has solved most of the lubrication problems. This oil has an alcohol base and has been found to be efficient even at prolonged temperatures of -40 degrees. However, it is not efficient for summer or temperate areas as it evaporates rapidly. With the general issue of the new arctic lubricant many problems which formerly were acute will disappear.

Another problem faced by the Infantryman in cold areas is the difficulty he experiences in getting a good, stable firing base from which his weapons can deliver accurate and effective fire. Since the ground in these areas is frozen solid during the six or seven winter months, very few emplacements are dug. Instead they are built up on the surface with such materials as trees, snow and ice. Small arms—the carbine, rifle, and .45-caliber pistol—present no particular emplacement problem. The soldier forms their base. We can also eliminate vehicular-mounted guns and recoilless weapons from this con-

sideration as they have portable emplacements. However, it should be pointed out that these weapons do have difficulties in moving through or over snow. We find that the major emplacement problems center around such Infantry weapons as the machinegun, automatic rifle and mortar. The ideal base for such weapons seems to be the earth found in most temperate climates. Unfrozen soil can be worked into emplacements and is resilient enough to absorb some of the shock of firing. At the same time, it is stable enough to assure a good, solid weapons base. In areas of extreme cold, however, base material is generally limited either to a deep snow cover which provides a loose, soft surface or to hard, frozen, nonresilient ground. If weapons are fired from the top of the snow, there is no firm base and they sink rapidly. Therefore, firing from the surface of the snow should be avoided unless it is absolutely necessary during fast-moving, assault-type situations in

which positions cannot be prepared. If such a situation can be anticipated, the weapons should be provided with expedient mounts to keep them from sinking into the snow and to provide more stable firing positions. Such mounts can be constructed with rope, wire, packboards, ski-pole baskets, snowshoes or sled. The 200-pound sled is particularly good. The weapon is provided with a towed mount and is ready to fire instantly.

Another choice for a base is the ground under the snow. This ground is frozen and has less “give” than a concrete floor. However, it is preferable to snow when there is time to dig down to it. In all cases, sandbags filled with snow, or supporting logs should be placed around and under the weapon to keep it from slipping and to provide a more resilient base. The machinegun, for example, should be well blocked at the legs so that it is stable and does not slide. The mortar should have snow-filled sandbags under the legs and base plate to absorb the downward shock of firing and to reduce the possibility of broken bridges or cracked base plates.

Another solid yet more resilient base for the mortar is the frozen surface of lakes and streams. Such a base offers wide dispersion possibilities, permits the emplacement of many weapons and provides overhead clearance. This type of base has been tested by the Arctic Test Board and has proved to be quite satisfactory. It is important that the thickness of the ice be determined—a minimum thickness of three feet is required. When emplaced on ice, the bipod and base plate of the mortar should be snow-bagged to avoid sliding. While more preparation and work are required than in temperate zones, satisfactory firing bases for Infantry weapons can be achieved in areas of extreme cold.

Another problem which arises only occasionally in areas of extreme cold, but which should be mentioned, is the phenomenon of ice-fog. This



Weapon completely enveloped by ice-fog.
Temperature at time of firing, -50° .

unusual type of fog is formed by the condensation of vapor into a liquid which then freezes into minute ice-crystals. This can occur, for example, during the firing of a machinegun. The heat of the fired round moving through the cold air condenses the moisture. The moisture then immediately freezes into ice particles which are temporarily suspended in the air, clearly marking the path of the projectile. Dense ice-fog created by vehicles, animals and people is found around many populated areas in extremely cold weather. The conditions under which a weapon might produce this fog are a temperature of -25 degrees or below, and still, calm air.

Individual small arms are not appreciably affected by this phenome-

non because they are hand held and can be readily moved if the line of sight is obscured by the trail of ice-fog. Likewise, mortars and other indirect-fire weapons will not be seriously affected. But emplacement-type weapons such as machineguns, recoilless rifles, tank and assault guns are affected. After the first few rounds are fired, ice-fog may obscure the gunner's line of sight to his target. When this happens he cannot fire accurately until the fog disperses. On a calm day this may take several minutes. When the possibility of ice-fog exists, nearby alternate positions should be prepared for these weapons. In the case of the machineguns, for example, the gunner, by looking a foot to the left or right of his ice-fog trail, will have perfect vision to the target. Thus an alternate position may be prepared about three feet to the left or right of the original position so that the gun can be moved rapidly and relaid on the target.²

A final general problem is one which reduces the accuracy of Infantry weapons. This is caused by the adverse effect of extreme cold on ammunition. We have already mentioned that a cold-soaked propellant charge burns more slowly and causes short recoil in the machinegun. It also reduces the range of the projectile. This reduction is quite apparent in small arms, rocket launcher, recoil-

²The United States Army Infantry School suggests an additional method of maintaining fire upon the target without moving the gun—have a crew member adjust fire from a position near the gun by use of hand signals.

less rifle, and tank and mortar ammunition, and tests show that the larger the caliber of ammunition and the longer the range fired, the greater the reduction becomes. Unfortunately, there are no firing data tables at present for cold-soaked ammunition or for the firing of Infantry weapons in extreme cold. The temperature-climate sight and tabular data are the only items available to the Infantry soldier. We need cold-weather firing data if our firing is to be effective and accurate under these conditions.

The effect of extreme cold on ammunition is reflected by tests which have been conducted with the .30-caliber machinegun. The Arctic Test Board has found that an actual range of 1000 yards is achieved when the sights of the machinegun are set for 1400 yards. The test board has noted also that cold affects the zero of the weapon. Tank ammunition presents a special problem. In many cases initial zeroing and firing will be done with the relatively warm ammunition stored in the turret of the tank. During combat when re-supply may be needed and cold-soaked ammunition may have to be used, recomputation of firing data will be necessary if firing is to be accurate.

Another problem is peculiar to small-arms tracer ammunition. The tracer element burns out earlier in extreme cold and is not suitable for target designation at ranges beyond 500 yards. Also, the cold, clear air

Ice-fog obscures the tank gunner's line of sight.



affects the firer's vision with respect to tracer ammunition. During tests tracer rounds appeared to be going over the target, but actual inspection of the target area revealed they fell short.

Cold weather also creates ammunition problems for the 3.5-inch rocket launcher. The slower burning rate of the propellant causes many unburned or burning particles to be thrown back at the gun crew. If the firer and loader are not well masked and gloved, these particles may lacerate or burn the exposed skin. This condition can occur at any temperature below freezing and becomes more prevalent as the temperature drops. Furthermore, the 3.5 round has been found to be highly erratic and inaccurate when fired at low temperatures. Consequently, it seems advisable to use this weapon only when absolutely necessary at temperatures below zero.

Now let us consider a few specific problems. The 106mm recoilless rifle, though subject to few malfunctions and breakages in cold weather, has two specific problems. The first of these is an increased back-blast area when the weapon is fired at sub-zero temperatures. The cold, clear northern air carries sound and shock waves much farther and thereby increases the danger of back-blast. During a test an automobile window was broken by the weapon's back-blast 200 yards to the rear of a 106mm recoilless rifle, and china

dishes were dislodged from a wall shelf in dependent quarters two miles from the range. The recommended minimum safe distance to the rear of this weapon is 300 yards. The back-blast area of the 3.5-inch rocket launcher is also increased, but not nearly as much as that of the 106mm recoilless rifle. Afterburn is another problem for the 106. When the weapon is fired, burning gases remain in the barrel and chamber for as long as a minute after the round is on its way. A flame can actually be seen coming out of the muzzle of the weapon for a period of up to 30 seconds. This afterburn could be especially dangerous to the gun crew if a second round should be loaded while the gases were still burning. The round might be exploded prematurely, and could cause severe injury to members of the crew.

Weapons with trigger guards have a special problem. They cannot be fired when the heavy arctic mitten is worn. The less-insulated trigger-finger mitten must be used. If the temperature is extremely low and if sustained use of this mitten is required, firers will suffer cold injuries. Experiments have been made with a variety of triggers and trigger extensions but this is still a problem area. A solution must be found if the soldier is to fire his weapon effectively in extreme cold.

The tank weapon faces a special problem in areas of deep snow. In addition to the possibility of ice-fog

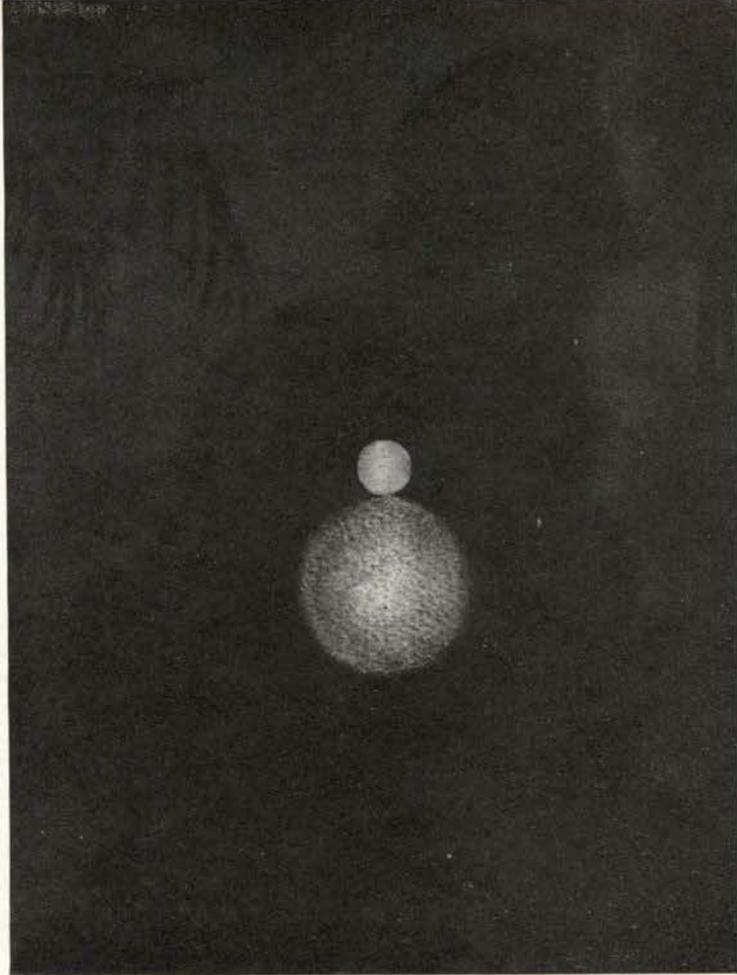
obscuring the target, the muzzle blast throws up snow. This also hampers visibility and limits immediate re-use of the sights. However, this problem does not exist on a windy day.

The point-detonating ammunition of indirect-fire weapons is also affected by deep snow. The round buries itself in the snow before bursting. This has a smothering effect on the burst and reduces the fragmentation radius. It also limits effectiveness of the round on area targets. VT or mechanical time-fuze ammunition has been found to be more effective for area targets under such conditions. Considerable testing is being done in this field.

From its studies of these problems, and from the experience it has obtained from tests and experiments, the U.S. Army Cold Weather and Mountain School has evolved the following suggestions for the care and employment of Infantry weapons under extreme cold conditions:

1. Clean and lubricate weapons with arctic lubricants.
2. Keep individual weapons outside and above the snow with muzzle down.
3. Keep blowing and drifting snow out of the muzzle and working parts.
4. Keep spare parts readily accessible with emphasis on spares for moving and recoiling parts.
5. Have gunners prepare their own firing data based on personal experience with their weapons and ammunition to insure greater accuracy.
6. Caution the soldier not to touch the cold-soaked metal parts of weapons with his bare flesh.
7. Develop proficiency in changing parts while wearing mittens.
8. Remember that the heating of a cold-soaked barrel changes the point of aim and necessitates changes in sight setting.
9. Remember that most malfunctions can be cleared by immediate action.
10. Remember that many breakages can be averted by initiating fire at a slow rate until the weapon warms.

LT ANDREW W. FURLAN received an OCS commission at Fort Benning in 1955 and was then assigned to the 38th Infantry Regiment at Fort Lewis. With the 38th he served as a battalion communications officer and as a rifle platoon leader. In 1956 he became a member of the 23d Infantry Regiment at Fort Lewis and accompanied that regiment to Fort Richardson, Alaska. His next assignment was at Fort Greely, Alaska, where he served as an instructor in the U. S. Army Cold Weather and Mountain School until the completion of his tour of active duty in February, 1958. Lieutenant Furlan received a BS degree in speech upon graduation from Northwestern University in 1951 and then attended the U. S. Merchant Marine Academy. He is now a graduate student at the American Institute of Foreign Trade at Phoenix, Arizona.



LEFT: Sight picture under conditions of high illumination using the reflective surfaces of the sights. RIGHT: Sight picture under low illumination conditions using the phosphorescent dots.

MULTILITE

By Maj Jack F. Kettler

Here is a new night aiming system which will enable the Infantryman to employ his direct fire weapons with greater accuracy.

THE night is dark, yet a group of Infantrymen are getting ready to fire on a rifle range. As measured for military purposes, the light available for the firing is that of a quarter moon. The men on the firing line, although their eyes have become adapted to the darkness, can barely see the silhouette of a man at 60 yards.

A red light flashes down range at a distance of approximately 300 yards. This light simulates an enemy automatic weapon. The instructor immediately commands four riflemen

to engage the target, and small flecks of orange spurt along the line as the men begin to fire. There is a continual ring over the sound set as the bullets find their mark and activate a bell attached to a 20- by 60-inch metal target. At the same time these hits are recorded by an automatic counter which is attached to the target. It is noted that the firers average six hits for every eight rounds fired.

Suddenly an automatic rifle cuts loose with a burst of tracers, setting up a constant clattering of the bell.

A machinegun crew then goes into action. Within seconds the initial burst registers on target.

Next the men on the firing line engage a group of silhouette targets at 50 yards. Then flares light the area, and additional targets become visible approximately 150 yards down range. The fire continues, and the automatic targets drop from sight as they are hit. As the light of the flares fades, members of the fire team re-engage the 50-yard targets.

An impossible exhibition with standard sights! But such is the

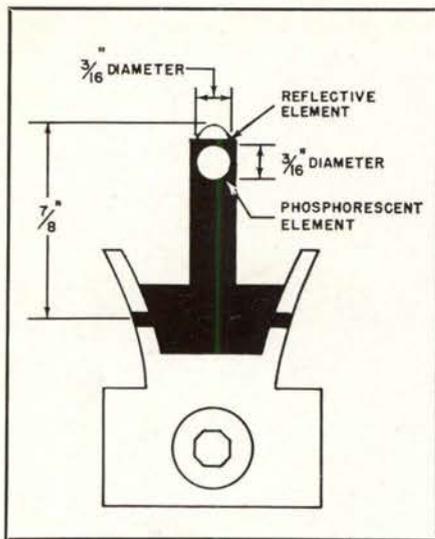


Figure 1. Front sight, rifle.

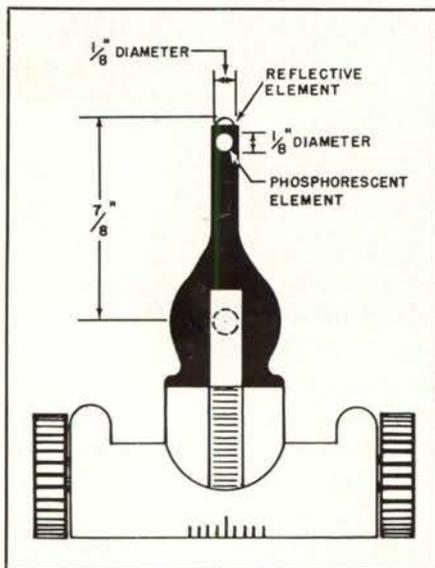


Figure 2. Rear sight, rifle.

The highly reflective hemispherical surfaces on top of both the front and rear sight posts are used under conditions of high illumination. The phosphorescent dots on both sights are used under low illumination conditions.

scene during demonstrations conducted at the United States Army Infantry School with a new night sight called "Multilite."

We are faced with the prospect of more frequent night operations in future warfare, yet the rifleman is unable to deliver effective, aimed fire at night with sights which are visible only in daylight. He is able to deliver killing fire only at the shortest ranges unless he is aided by special, costly and heavy equipment which is added to his weapon.

An inexpensive, lightweight sight has long been needed to increase the Infantryman's night-firing capability. Multilite, conceived by members of the Infantry School's Weapons Department and now undergoing ordnance engineering tests, is such a sight. It gives the rifleman an adjustable, dual-post sight which allows him to aim his weapon under all conditions of illumination.

The prototype sight is simple in principle and design. Its construction is based on the known facts that a person sees better at night with both eyes open and that the mass of the rifle, when employed at night in the approved daytime fashion, obscures the target under all but the brightest conditions of battlefield illumination. But, as in daylight, sights must be seen at night if they are to be used, and they must not obscure the target. Multilite appears to satisfy these requirements under all variations of light.

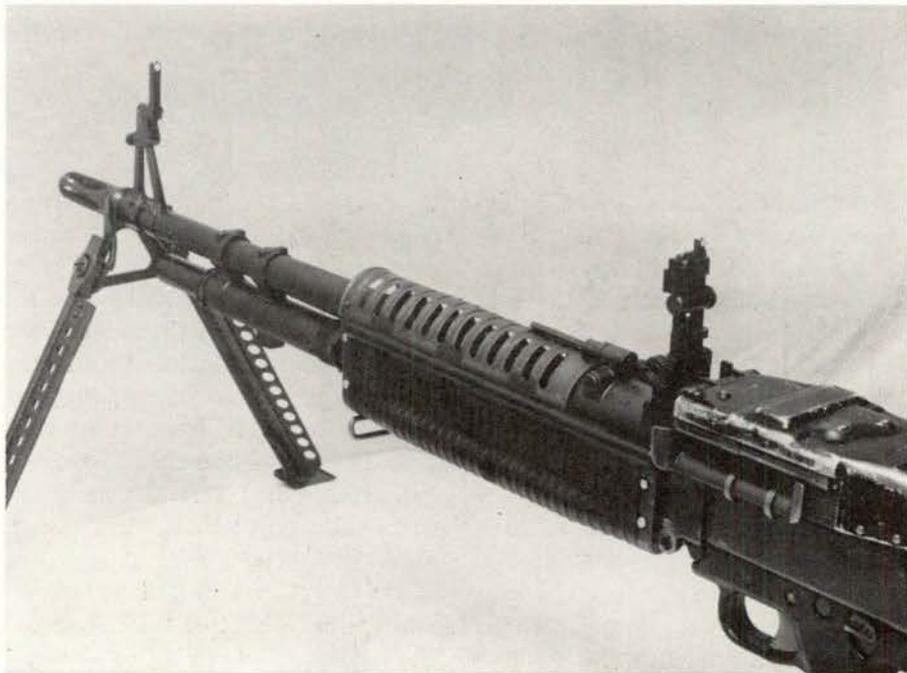
Multilite consists of two elements which are visible, in the light available, under any condition of illumination (Figures 1 & 2). These elements are positioned sufficiently above the weapon so that the mass of the weapon



Multilite sights on the M-1

does not interfere with observation of the target. The rear element of the Multilite sight is affixed to the standard rear sight and is adjusted in the conventional daytime manner. The front element attaches to the standard front sight. Both elements have a post with a small phosphorescent dot near the top. These dots can be seen under all "low-il-

... on the M60 machinegun



lumination" conditions from starless nights through the light of a half moon. Both posts are capped with a highly polished, hemispherical surface which will reflect a pinpoint of light under "high-illumination" conditions of a half to full moon, and flares, searchlights or other artificial illumination. The parallel positioning of the phosphorescent and reflective surfaces makes it possible for the weapon to be fired without any change of sight picture, elevation or hold-off for ranges up to 200 yards, after the weapon has been zeroed for either set of visible surfaces. The firer's sight picture is shown in the illustrations on page 25.

To compare the effectiveness of Multilite with that of the standard pointing technique of firing at night, each of four student classes at the School was divided into two equal groups. One group trained with and used the Multilite sight; the other employed standard sights with the pointing technique. The course fired was that prescribed in DA Training Circular 23-1, dated 23 February 1955, for the individual phase of training. "M"-type silhouette targets were utilized exclusively. The tar-



... on the BAR

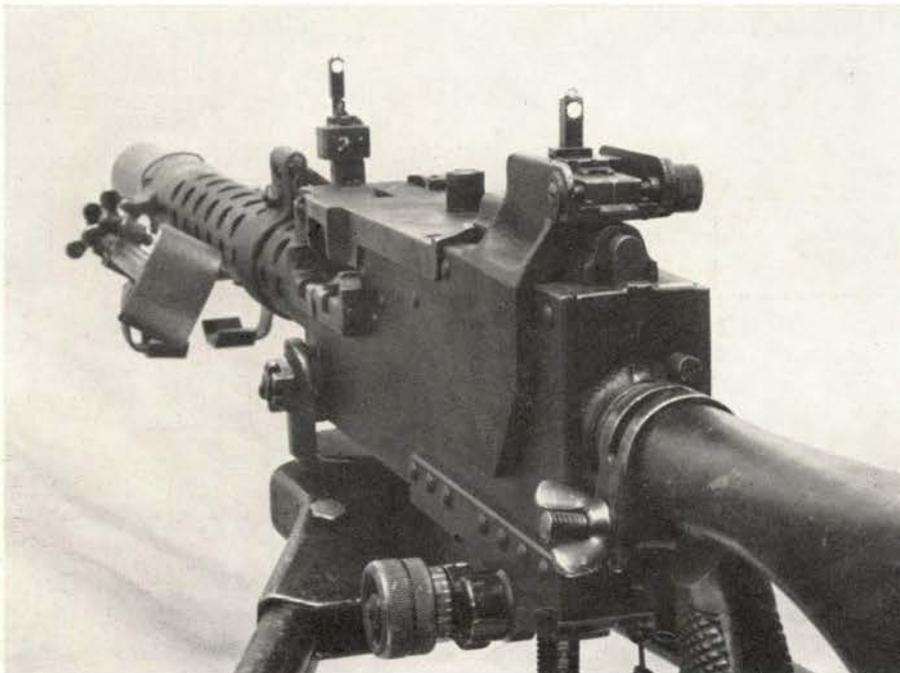
gets were placed at 25 and 50 yards or at 50 and 75 yards, depending on the amount of natural illumination at the time of the firing. The average effectiveness of the Multilite firers was 38% greater than that of the standard group at the near range and 95.7% greater at the far range.

Only 1.7% of the Multilite firers missed the target with all rounds at the near range, while the targets were missed entirely by 7% of the standard firers. At the far range the figures were 12.5% for Multilite firers and 31.5% for standard firers. The results were approximately the same when the averages of 63 Infantry School classes which fired in the conventional manner were compared with the Multilite figures.

Test results indicate that a greater number of firers hit targets and hit them more often when the night sight is employed. The Multilite group produces approximately twice as many hits as the standard group when fired under the same conditions of range and light. Also, Multilite enables the firer to obtain acceptable accuracy at ranges considerably greater than the extreme range of the current standard course. No comparative statistics are available for these greater ranges, since firing is not feasible at such distances with standard rifle sights and the pointing technique.

Multilite has been tested also, with highly favorable results, on the automatic rifle, the light machinegun,

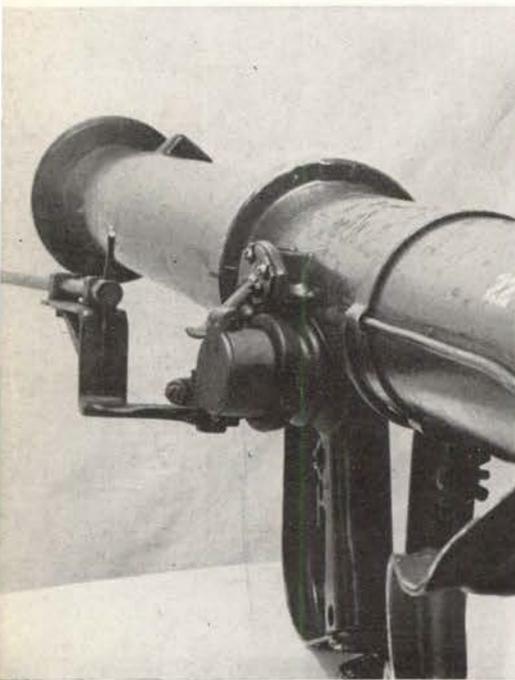
... on the M1919A6 machinegun



the 3.5-inch rocket launcher, the 106mm recoilless rifle, and the M60 general purpose machinegun. The M60 is particularly suited for the new sight because of its straight stock and high standard sights. The new M14 and M15 rifles with their excellent flash-suppressing capabilities are ideal for aimed night firing, using ball ammunition and the Multilite sight.

Multilite appears also to have a definite value in daylight assault fire. By giving the rifleman a quick means of sight alignment, the device allows

... on the 3.5-inch rocket launcher.



MAJ JACK F. KETTLER began his military career when he received an OCS commission at Fort Benning in 1944. He then served as an intelligence and reconnaissance platoon leader with the 417th Infantry Regiment, 76th Infantry Division, at Camp McCoy and in Germany. In 1945 he became a company executive officer with the 117th Infantry Regiment, 30th Infantry Division. Major Kettler was graduated from the Infantry School's Advanced Course in 1951 and then was assigned to the 23d Infantry Regiment in Korea, serving as a company commander and later as regimental S3. In 1956 he became a member of the U.S. Army Rifle and Pistol Team at Camp Perry, after which he received his present assignment with the Weapons Department of the Infantry School.

him to fire the rifle "shotgun" style. Initial experiments in which Multilite has been used for assault fire indicate that the rifleman hits more targets, and hits them more often, from point-blank through 250-yard range, than he does when employing the present underarm assault fire technique.

Although additional tests are being conducted with Multilite to fix the general limits of satisfactory performance, it appears that this sight will meet our requirements for modern combat in which greater distances must be covered by fire, and in which there will be more night fighting. Multilite will enable the Infantryman to do a better job, at lower cost, with greater yield from available ammunition with no appreciable increase in his combat load.

The prototype sights now being tested must be attached to the various weapons by screws. While this can be done in 10 to 15 seconds, such an arrangement leaves much to be desired. Plans call for the system to be an integral part of the weapon so that either the standard sights or the Multilite sights may be used. However, the designers expect that the sight initially issued for use with weapons now in the hands of troops will be an interim, inexpensive clip-on device requiring no modification of the weapon.

Infantrymen who have had an opportunity to fire with the Multilite sight have been enthusiastic about it. The confidence generated among these firers is aptly expressed in the frequently heard remark, "If I can see it, I can hit it."

MARKSMANSHIP TRAINING AID

A rifle marksmanship training aid, known as the "Swift Training Rifle" has been field tested by the United States Army Infantry School's Weapons Department.

Built of wood along the lines of an M-1 service rifle, the training rifle has an arrangement of springs and pointed pins which are said to provide instant visual and recorded proof of a trainee's faults without expenditure of costly ammunition.

When the trigger of the training rifle is squeezed, a pin darts from the muzzle of the weapon to punch a hole in

a target placed on a wooden frame a fraction of an inch from the muzzle. A second spear-shaped pin is also projected an inch and a half below the first. This second pin cuts a vertical slit in the target if the weapon is properly fired. However, because the pin remains in the paper a fraction of a second before recoiling into the rifle, the slightest movement while firing is instantly recorded by the shape of the resultant hole.

The training rifle is designed to provide a method by which the principles of basic rifle marksmanship may be acquired by a trainee in a matter of 12 hours. The device was brought to the Infantry School by its originator, Segismundo Bakanowski of Madrid, Spain, upon the invitation of the Department of the Army.



INFAIRTRY - A look ahead

In the future the Armor-Infantry team will give way to Infantry-Air teams.

With an imaginative approach we can form such teams today.

By Lt Col Jack W. Hemingway

CAPTAIN Blodgett mutters to himself as he adjusts the "walkie-lookie" television set in his titanium-sheathed, turbine-driven Infantry carrier.

"A little more correction on the horizontal knob . . . now just a hair on the brightness knob. Ah, there's Lieutenant Upfront with his point deployed and his support stymied.

He seems to be held up by fire from around that bend in the road. That cliff on his left and the river on his right will restrict his maneuver. I'd better get a TV drone over that area and have a looksee."

Captain Blodgett turns to Specialist McCarthy. "McCarthy, put Peeping Tom up and get a wide angle shot of the area behind that bluff.

We've gotta get moving or we'll be ducksoup for an A-blast.

"Let's see. Peeping Tom is on Channel 28. Dadgum technicians—wish they'd find a way to change channels on this thing without re-adjusting each time. Ah, there's the picture . . . a little too much snow . . . now a bit sharper . . . OK.

"Must be pretty gusty out there,

LT COL JACK W. HEMINGWAY received his commission in 1942 through the Citizens Military Training Program. He then was assigned to the 35th Infantry Division. Later he joined the 78th Infantry Division and fought with that organization in the European Theater of Operations. Following World War II, he was a unit commander at Camp McCoy and he later went to Japan, where he was assigned to GHQ, SCAP. Returning to the United States he was a company commander and later a battalion S3 with the 14th Regimental Combat Team at Camp Carson. After a tour of duty with Fifth Army Headquarters, he went to Korea, where he became assistant G3 of the 40th Infantry Division. Later he was a battalion commander and then executive officer of the 223d Infantry Regiment. Upon his return to the United States he was assigned to Third Army Headquarters and later to the Command and Staff Department of the Infantry School. He is currently attending the Army War College at Carlisle Barracks, Pa.

McCarthy. The drone's not hovering too well. Angle her nose down a bit so I can see both sides of the road. Good, hold her steady. Now shift a smidgen to the left . . . a little more . . . hold it. There's the dadgum trouble—armor!

"Things must be pretty tough with Ivan. He's gone back to using his old tanks. We sure must be playing havoc with his armored-carrier production.

"Ah, now I see another tank . . . and some Infantry nearby. Say, that's a pretty shrewd delaying position. Those boulders screen the tanks from our direct ground fires."

Turning to his exec, Captain Blodgett says, "Spence, is the VERTICAT (vertical take-off-and-landing company antitank weapon) back on carrier and serviced?"

"Check, Captain. She's all set to go."

"Good. Tell Harris to get it up there on the double and clean out that rat's nest. Have him bag the tank to the east first, so the other one can't get away. In the meantime, be sure Upfront gets all available arty fire in that area. But have him hold down the size of the stuff around that cliff. We don't want rock slides blocking the road.

"McCarthy, back Peeping Tom off a bit so we can see the VERTICAT at work. Keep checking your monitor while I see how Lieutenant Security is doing out on the flank. . . .

"Ducktail Two, this is Crewcut Six. What's your situation? Over."

"Crewcut Six, this is Ducktail Two. I'm at check point Alfa Three. The pass is clear. I've put in the sonic-pressure mines. They should keep Ivan from getting through until long after we're gone. Landing areas for Vertijets are limited. We shouldn't have any trouble from air-assault forces. Recommend I proceed to check point Hotel Five. Over."

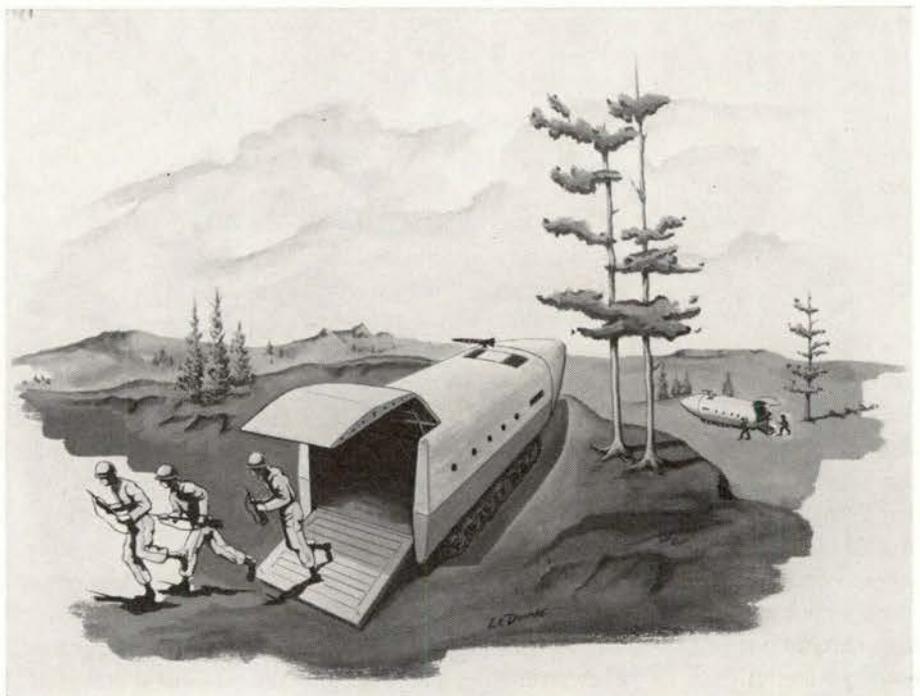
"This is Crewcut Six. We've been delayed here a bit. I'm worried about the pass at Alfa Two. Get over there at once. I want to block

Ivan's withdrawal and make sure we have control of the pass when we move out of here. As soon as you are deployed send your Jeepters (jeep helicopters) back to me. Any questions? Over."

"This is Ducktail Two. No questions. Out."

Blodgett turns to his exec again. "Spence, when the Jeepters get back from Alfa Two, have Lieutenant Reserve's platoon move to Hotel Five on the double. He can take over our flank security. Have his carriers follow Upfront's platoon. They can pick up Security's platoon at the pass when we link up with him.

"Now to see what's going on out in front. VERTICAT should be ready to clobber those tanks. Let's see, that's Channel 28 . . . Dadgum technicians! Ah, there's VERTICAT lining up to blast now. This new weapon sure put the antitank gun out of business. There she goes. Man, did that tank ever fly apart. Egads, two birds with one stone. A chunk of molten metal hit the other tank and set it on fire. Boy, that new mintomic warhead cracks steel like an egg shell. And VERTICAT's sonic-magnetic-infrared guidance sys-



tem would make a tank-killer out of a blind man.

"I better check in with Upfront. On second thought, I'll go up there. Spencer, I'm taking the Jeepster up to see how Upfront is making out. Keep right behind him as soon as he moves out."

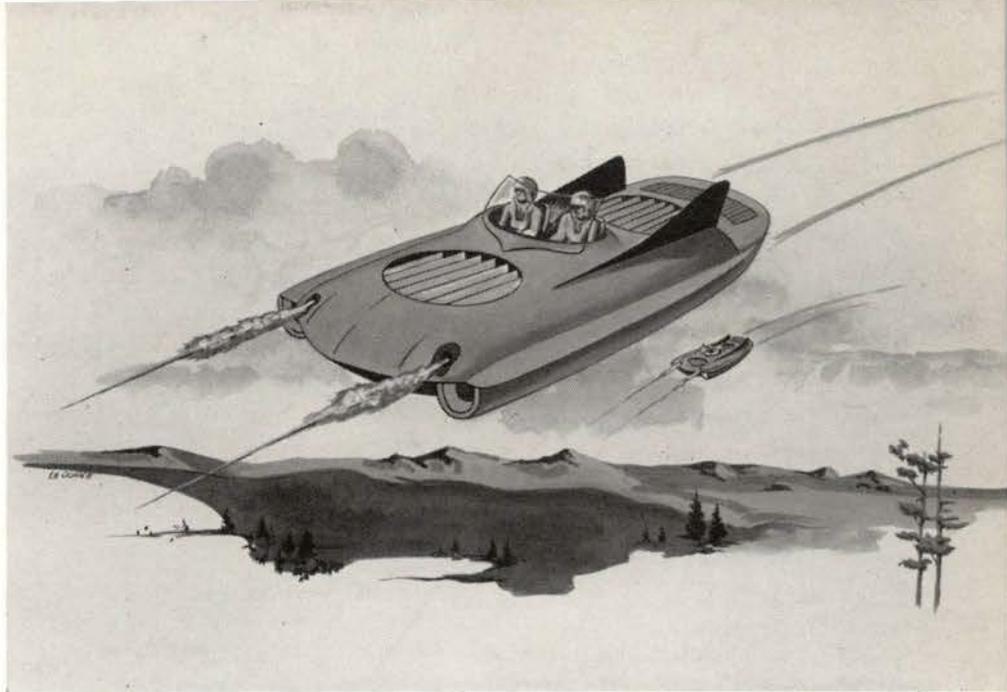
Captain Blodgett settles back in his Jeepster as it effortlessly breaks contact with the ground. "Things sure move fast nowadays," he muses. "Only 10 minutes since we made contact and we're practically on our way again. In the 'good old days' we'd still be scrambling around the rocks. Meanwhile, everything behind us would be lined up like Sunday traffic at a drive-in movie.

"I sure wish they'd get that flight pay bill through, though. Those extra shekels would come in mighty handy. . . ."

Sonic-magnetic-infrared guidance. Titanium-sheathed, turbine-driven Infantry carriers. Mintomic warheads. Vertijets. What is this? Buck Rogers? Flash Gordon? No, Buck and Flash use rocket ships, death-ray guns and antigravity belts.

But the items employed by Captain Blodgett are fictional. As such, they probably are not even on our combat development drawing boards. However, these weapons and tactical techniques are representative of what we may expect in the not-too-distant future, and they certainly point up a new combination for combat that is burgeoning in our midst—the Infantry-Air team.

From time immemorial our world has been beset with struggles between men. Early in these struggles man protected himself with a shield, then with body armor. But he soon became so immobile that he fell prey to lightly equipped, fast-moving warriors. His next important attempt to sheath himself with metal was made during World War I, when he developed a thin-skinned, mobile gun platform called the tank. But invariably each new weapon or weapon improvement has been countered with another weapon capable of defeating



it. As the efficiency of the antitank gun increased, the tank became heavier and correspondingly less mobile. The tank has now reached such proportions that it is pretty much confined to ideal terrain. While it offers some protection from the effects of atomic weapons, the cost of this protection in weight and mobility is extremely high. More important, however, survival of the tank is now challenged by guided antitank missiles and other weapons which can defeat the armor of any known practical vehicle.

If the tank is losing its validity, what will take the place of the Armor-Infantry team? The answer is found in fast, light Infantry carriers and Infantry-Air teams. We must be dispersed on the battlefield to deny the enemy lucrative atomic targets. However, we must be able to mass to take objectives. This massing must be accomplished with great speed, and then must be dissipated just as rapidly. Such movement is most fully realized through the use of low-flying, VTOL (vertical take-off and landing) aircraft. The Army is the leader in this field of aviation today, and in the Army it is the Infantry which is inherently light enough in organization and

weapons to capitalize on the mobility and speed of air transport and fast, lightweight surface vehicles. The superior protection afforded by speed is replacing the dwindling, outmoded protection offered by heavy armor. Present troop-carrying helicopters with their flexibility in landing and take-off, ground-hugging flight characteristics, speeds well above one hundred miles an hour and ability to achieve surprise constitute poor targets. With their three-dimensional capability they can surmount even the most difficult terrain obstacles.

We have seen how a reinforced rifle company, employing fictional weapons and Infantry-Air tactics, faced a combat situation. But we don't have to wait for such weapons to be developed. Actually, we have the makings of the Infantry-Air team now.

Using the helicopter, other tools in our present arsenal and an imaginative approach, let's see how Captain Blodgett might handle a similar advance guard situation, today.

"What's that you say, Upfront? A wall of granite on your left, a river on your right and a hail of fire to your front? You say you've deployed everything you can? . . . Your lead tank is on fire? O.K. Get this:

send some riflemen and a rocket launcher around through the rocks. I'll give you all the help I can. By the way, try to shove that burning tank into the river before the flames set off the ammunition. If that stuff starts popping on the road, our column will be stymied even though we get rid of Ivan. Any questions? Over."

"This is Ducktail One. Roger. I'm sure we can punch through. Moving through those rocks is going to take some time, though. Meanwhile, I'm using all available fires. Out."

Captain Blodgett turns to his exec. "Spencer, call Peeping Tom (an observer assigned to fly over the advancing column in a helicopter from the Division Aviation Company's combat-support flight) and have him give us a report on what's ahead of Upfront. I'll alert Lieutenant Security (flank security leader). . . . Let's see, is there anything else I need to do before checking with him? . . . What's that, Spence? You say Tom reports two tanks and a couple of squads of Infantry in front of Upfront? They're behind boulders and direct fires won't reach them? O.K. We'll call on Tank Trap One to put one of those 'tank-busting' helicopters into action. Have him rendezvous with Security over check point Football One at 1343. I'll orient Upfront. But first, I'll talk with Security.

"Ducktail Two, this is Crewcut Six. Change of mission. Mount up in your attached H34's and head for Football One. You'll meet Tank Trap One there at 1343. Head immediately for Delta Six. Approach from the north and east. Wait. Out.

"What's that, Spence? Oh, you have a further report from Tom. . . . Yes . . . O.K. . . . Thanks.

"Ducktail Two, this is Crewcut Six. Tom is in the area of Delta Six. He reports that Upfront is stopped just west of Delta Six—two commie tanks and a couple of squads of Infantry. Terrain restricts his maneuver. He's sending riflemen and bazookas through the rocks. This



ground movement will be slow. I want you to land east of Delta Six. Use your FO to take over the supporting fires. Get rid of that delaying force. When you have landed, release your choppers and send them to Golf Four. Any questions? Before checking out give me a report on the situation you are leaving. Over."

"This is Ducktail Two. Roger. I've mined the pass with antitank and antipersonnel mines. I've also mined the one good helicopter landing area with antipersonnel mines. I see nothing to the north. Out."

"Spence, when those 'copters get back from Lieutenant Security have Reserve's platoon mount them and take over the flank security mission. They'll fly to the pass at Hotel Five and pick up where Security left off. Have Reserve's attached Infantry carriers (M59's) follow in place as soon as we get moving again. Security can mount his platoon in these and assume Reserve's mission.

"Peeping Tom, this is Crewcut Six. Give me a report on Lieutenant Security's movement. Over."

"This is Peeping Tom. Security is deployed and advancing on both sides of the road toward the enemy.

His low-level approach and the noise of the fighting have kept him from being detected by the commies. He has Tank Trap One standing by in a concealed location several hundred yards to the east awaiting his call. Ivan is sure in for a surprise. He still doesn't know that Lieutenant Security is at his rear . . . Our artillery is keeping the enemy tanks buttoned up and is restricting the movement of his dismounted forces . . . Security is in position now. He has a MUCAT (106mm recoilless rifle mounted on an Army mule) which is in position to knock out one of the tanks. The other one is masked by a large boulder. . . . Here comes Tank Trap One—moving low and slow . . . Now he's getting into position to blast that defiladed tank. Ivan apparently suspects nothing . . . There goes the first salvo from Tank Trap One . . . MUCAT is firing too. MUCAT got a bulls-eye . . . that first tank is junk now . . . it's beginning to burn. Tank Trap One's initial rounds missed . . . there go more ripples . . . Ah, those hit home, hard. The second tank is flaming. The crew is bailing out now. Ducktail Two is closing in . . . *C'est fini!* Over."

"This is Crewcut Six. Roger on your last transmission. Reconnoiter to the east. We'll be on our way momentarily. Check all likely ambush sites between here and Hotel Five. I'm sending Lieutenant Reserve to secure Hotel Five. Out.

"Spence, this has gone mighty fast. Only 20 minutes since Upfront's leading tank caught the first round and we're ready to go. Tell him to get moving — in fact, he should be rolling now. What's that? . . . He's been moving for the last two minutes . . . Great! This is what I call having your cake and eating it too. Those helicopters give us firepower and let us maneuver through the air, but we can dismount and fight on the ground when it's necessary. We're capitalizing on the full potential of machines without being tied to them. What's that? . . . Lieutenant Reserve reports all is well at Hotel Five? Swell! We shouldn't have any trouble reaching our march objective."

Captain Blodgett has acquitted himself well. He didn't have VERTICAT, but he used an armed helicopter and a helicopter-lifted 106mm recoilless rifle mounted on the Army mule (it could as well have been mounted on the jeep). He didn't have titanium-sheathed, turbine-driven carriers, but the M59 did the job. In the absence of a television-equipped drone he relied on the trained eyes of an observer in a reconnaissance helicopter. Instead of Jeeters he transported his troops in H34 helicopters. The present-day Captain Blodgett lacked "walkie-lookie" television, but he used the radio. He got "the picture" although he didn't get it quite as quickly. While not so destructive as the mintomic warhead, the shaped charge of the 106mm recoilless rifle destroyed the enemy tanks.

All of the weapons and equipment employed by the company in the second situation are organic to the pentomic Infantry division except

the Army mule and the armed helicopter. The mule, however, *is* organic to the Airborne division, and the armed helicopter exists and is undergoing tests to determine the best armament and techniques of employment. Of course, Captain Blodgett could have used the jeep-mounted 106mm recoilless, and he could have transported additional recoilless rifles or rocket launchers with the helicopterborne platoon to offset the lack of an armed helicopter.

We do have the means today to conduct Infantry-Air operations which probably will characterize combat of the future. We must be mentally flexible and aggressive in our never-ending search for better ways of accomplishing our mission with what we have. At the same time we must keep an eye to the future so that we will be prepared for what is to come.

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.

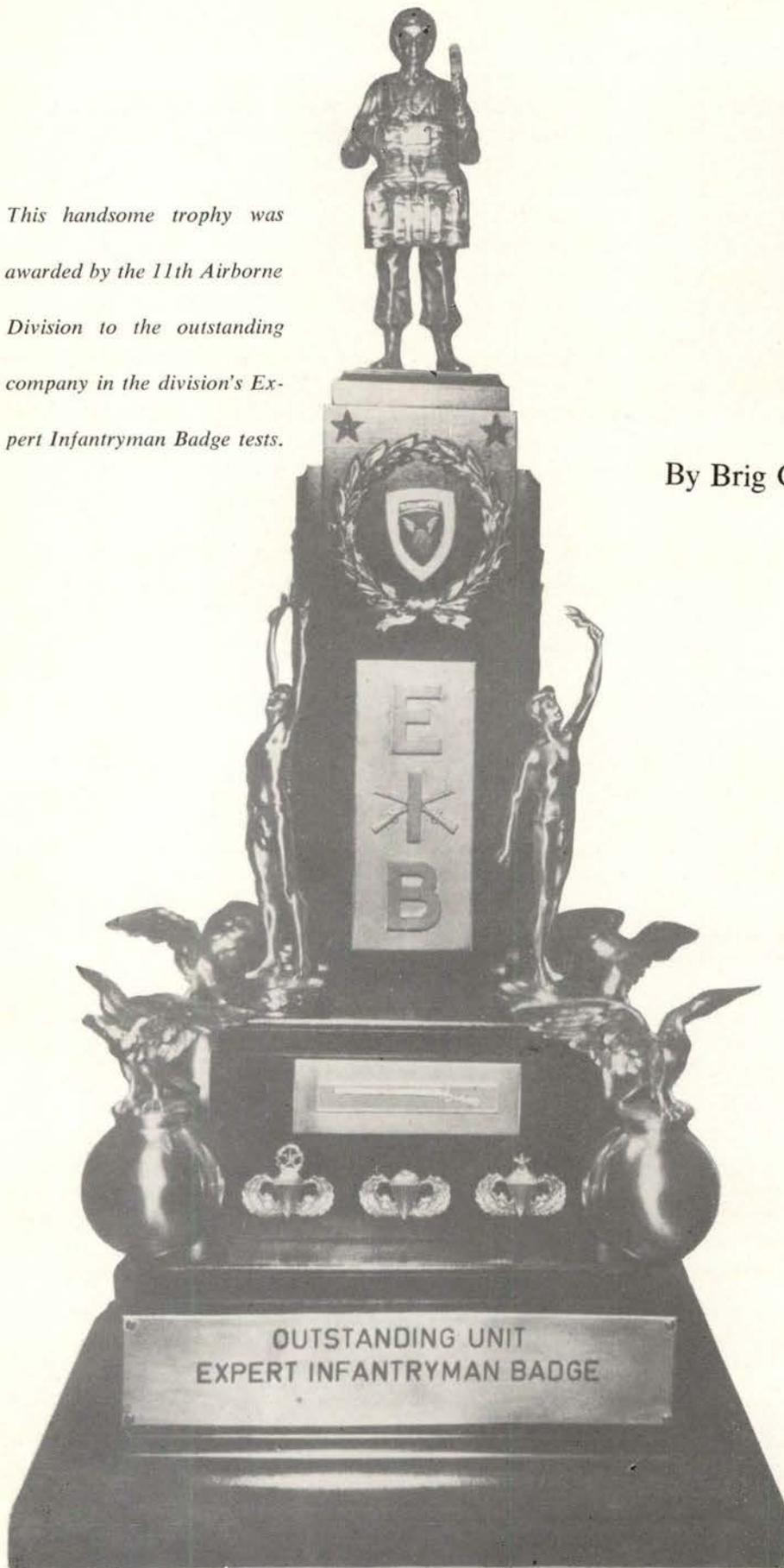
WELCOME TO THE INFANTRY

WE are proud to welcome into our ranks the more than 300 newly commissioned Regular Army lieutenants from the Class of 1958 who have selected Infantry as their career choice. All Infantrymen extend greetings to the 127 graduates of the United States Military Academy, and the 181 distinguished military graduates of other colleges and universities who now wear crossed rifles.

In selecting the Infantry these young men have made an intelligent choice—they have accepted the challenge of leading the world's finest soldiers. We have every confidence that they bring with them the courage and aggressiveness that has always typified the American Infantry leader.

Except for one officer who has completed Airborne training and is now a Rhodes Scholar, all of these new Infantrymen are presently attending the Infantry Officer Leader Course at the Infantry School. Ninety percent of the new lieutenants have elected to take both Ranger and Airborne training although they are required to select only one of these courses. This voluntary acceptance of hard, rugged training demonstrates exceptional interest in their new profession and portends their future value in the difficult, demanding role of the Infantryman. We are proud of them. We know that they will find their service with the Infantry both satisfying and rewarding.

This handsome trophy was awarded by the 11th Airborne Division to the outstanding company in the division's Expert Infantryman Badge tests.



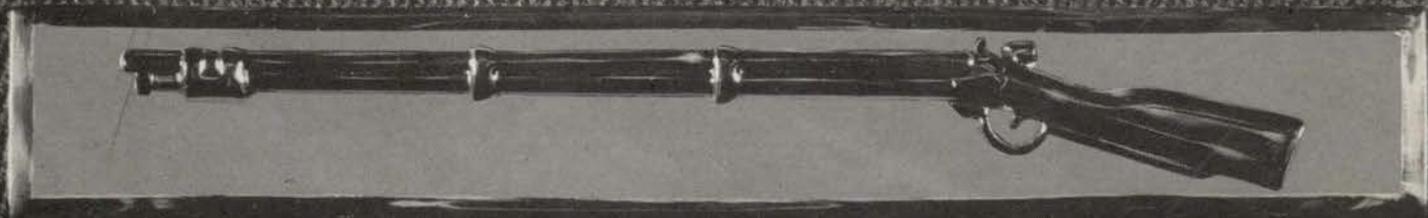
By Brig Gen David W. Gray

LET'S

THE soldier's trade is reason enough for pride, but soldiers are human and respond to recognition for individual and unit achievement. This human quality was recognized when the Expert Infantryman Badge was established during World War II to honor the American Infantry soldier who demonstrates all-round proficiency in his rugged profession.

The man who wears the Expert Infantryman Badge does so with justifiable pride. He has earned individual distinction which can be achieved only by Infantrymen, and he knows that this distinction is not easily acquired. The silver and blue badge on his breast demonstrates, for all to see, that he is a cut above the average soldier in training and fitness for combat.

I feel that we have been neglecting this worthwhile and effective means of recognizing proficiency in our Infantry soldier. Many units are not taking full advantage of EIB to foster individual and unit *esprit de corps*. They are missing the very valuable means of stimulating interest in advanced individual training



STRESS THE BLUE BADGE!

which is afforded by Expert Infantryman Badge tests. And, of course, they are doing a disservice to their men when the individual soldier is not given an opportunity to earn this distinction.

Neglect of the badge and failure to take full advantage of its possibilities may possibly be attributed to a lack of command interest, or it may result from insufficient time in the training calendar for adequate preparation of the tests. However, I believe it stems largely from a lack of general knowledge as to how the tests should be conducted. With the hope of improving this general knowledge among Infantry officers I want to pass on my personal experiences in the conduct of these tests during the past year.

In September 1957 the 11th Airborne Division had just completed a period of extensive field training culminating in Army Training Tests in which the battle groups proved to be extremely well trained. Although range firing, special exercises and IG inspections promised to keep the troops busy through November, there was a period in December and

January for which no special projects were scheduled. Since another program of unit training was not scheduled until spring, it was decided that this interim period would be spent in Expert Infantryman Badge testing.

Army Regulation 600-73 prescribes that the EIB test board will be appointed by the regimental commander. However, when the regimental echelon was eliminated in the pentomic Infantry division, Seventh Army directed that the test should be administered at division level. Although this requirement places an added burden on the division staff, I believe it has definite advantages. It insures better support and more uniform standards of testing throughout the division.

For those who may not be familiar with the test, I will indicate its principal features. The test is open to all officers and enlisted men who are assigned to an Infantry unit and who have an Infantry MOS. There are two phases of the test. In phase one, which is conducted by the unit, the soldier must qualify as sharpshooter or better with his primary individual weapon, or as first-class gunner or better with a crew-served weapon. He must also qualify in field stripping and cleaning his primary weapon and one crew-served weapon. He must successfully complete a 12-mile march with combat pack in three hours, and he must receive a character rating of excellent.

Phase two is a battery of tests conducted by a test team on a wide

The Expert Infantryman Badge provides an excellent means of recognizing proficiency and of developing esprit de corps.

Units that fail to conduct EIB tests lose a training stimulus and deny their men an opportunity to achieve this distinction.

BRIG GEN DAVID W. GRAY received his commission in the Infantry when he was graduated from the United States Military Academy in 1933. During World War II he served with Headquarters, Army Ground Forces, and later with the G3 section of General Walter Krueger's Sixth U.S. Army. During the Korean War he was Operations Officer of the Eighth Army, commanding officer of the 27th Infantry Regiment and G3 of X Corps. He was graduated from the U.S. Army War College in 1952. General Gray was later appointed chief of the Operations Division, ODCSOPS, Department of the Army. In March 1957 he became assistant division commander of the 11th Airborne Division (now the 24th Infantry Division). At present he commands the elements of the 24th Infantry Division which are stationed in Lebanon.

variety of subjects. Each of the tests must be passed with a satisfactory score. The tests cover the following subjects: military courtesy and discipline; demolitions, mines and booby traps; first aid; patrolling; map reading and use of compass (night and day); military intelligence; adjustment of artillery and mortar fire; individual camouflage; field proficiency in weapons; basic signal communication; hand grenades; bayonet; and physical fitness (included as a prerequisite to taking the test and given in phase one).

Successful completion of both phases of the test entitles the soldier to wear the Expert Infantryman Badge. A streamer is awarded to the unit in which 65% of the men have earned the badge. This streamer is retained permanently by the unit.

Before initiating our program for EIB testing, a review was made of past programs in the 11th Airborne Division as well as other divisions of Seventh Army. Then the following principles for the conduct of the test were developed:

Adequate time must be authorized in daily training schedules for proper preparation for the tests. In the past, units had not been allotted sufficient time in their training programs for this purpose. As a result, candidates had to accomplish much of their preparation on their own time with inadequate guidance and training aids. Therefore, in our program, battle groups were to be re-

quired to develop their own testing areas and to run all personnel through the test whether they would qualify for the final test or not. This had the advantage of exposing the entire command to the test and immeasurably increasing the general proficiency in advanced individual training throughout the command. It also increased the prestige accruing to the wearer of the badge by giving all personnel in the unit an adequate appreciation of the requirements to be met.

The tests must be valid, and on the appropriate level of difficulty. Too often in such a series of tests an attempt is made to make a man an ex-

pert in each subject. However, this is not the intent. If a soldier passes all of the subjects, he is considered an expert Infantryman. Therefore, our tests were carefully designed so that a passing grade would be reasonably obtainable. It was hoped in this way to prevent the men from feeling that successful completion was beyond their capability. Of course a proper balance had to be effected so that the test would not be so easy as to down-grade the accomplishment.

Participating units must understand the general nature of each test so that preparatory instruction will be properly oriented. We believe that many failures in the past could be attributed to the fact that men were given the wrong type of instruction for the test which they actually had to take. It was therefore decided to inform all commanders whether a particular test would be practical or written. In the case of written tests, the nature of the subjects to be covered in the questions, together with specific field manual references, was included in the instructions. As a result, men who had been preparing for a written test in a subject would not be confronted

EIB candidates are tested in use of the compass . . .





in field sanitation . . .

with a practical test, and vice versa.

There must be maximum participation in the tests. The key to maximum participation is to qualify the maximum number in the preliminary requirements. In an airborne division the required 12-mile march in three hours should disqualify no one. The men are fit. Also, field stripping the weapon should present no problem. However, weapons qualification may be more difficult. Commanders were expected to make a special effort to qualify a maximum number of men as sharpshooters as this would be the real key to achieving maximum participation. The goal was to qualify 85% of each unit as sharpshooters. Some of our units achieved this goal and some did not quite make it. I should point out that our commanders were given complete say as to who would participate. Some entered all who had passed phase one, while others selected their most likely candidates and concentrated on "prepping" them. I believe the former procedure is best.

Soldier interest must be properly stimulated through publicity and awards. Starting in October the division newspaper carried articles on Expert Infantryman Badge training. Units soon picked this up and started inserting articles of their own. A radio broadcast was prepared, discussing the history of the badge and its significance. The division offered trophies for first and second place to the units qualifying the largest percentage of their eligibles. In addition each unit offered trophies for best company and for high individual score.

After these general principles were established, a project officer for the test was designated by G3. He developed his program to include preparation of the tests, organization of the testing team, preparation of the testing area, issuance of administrative instructions, and liaison between division and the testing team during conduct of the test.

The task of preparing the tests was simplified by allotting specific tests to units or agencies best qualified to prepare them. Thus first aid and field sanitation were prepared by the medical company; demolitions, mines and booby traps by the engineers; map reading and patrolling by G2; and communications by the signal battalion. Pure Infantry subjects, such as bayonet, grenades and field tests of weapons, were prepared by G3. When the tests were completed they were tried out on selected personnel in an effort to eliminate questions that were incorrectly stated, or which were too easy or too difficult.

The problem of forming the testing team was simplified by assigning specialists in a subject to conduct the test in that subject. The engineer battalion conducted the test on mines, demolitions and booby traps; the medical company, tests on first aid and field sanitation; and the signal battalion, tests on basic signal communications. Men who had already earned an Expert Infantryman Badge or a Combat Infantryman Badge were

utilized in administering the strictly Infantry tests. The division medical company was given the responsibility for administrative support for the tests as a whole. This included such items as tents for the statistical center, warming tents and a mess tent for the noon meal. All told, administration of the tests required 11 officers and 212 enlisted men.

The test area was divided into two parts, an indoor and an outdoor area. The indoor area consisted of barracks classrooms where the following tests were given: military courtesy; first aid; map reading; military intelligence; and adjustment of artillery and mortar fire, using a puff range. In the outdoor area the following practical tests were given: field sanitation; demolitions, mines and booby traps; patrolling; compass; individual camouflage; field proficiency for weapons; hand grenade; bayonet; and physical fitness. All of the outdoor tests were conducted in one

in individual camouflage.



general area so that the participants could move from one test to another, following the station principle.

The tests themselves were conducted in the following manner. Three days were allotted for the testing of each major unit. Several days prior to the test each unit submitted its list of qualified participants. The participants were numbered in accordance with a block of numbers assigned by division. A summary score sheet showing only the soldier's number was prepared for each participant. On the first day, participants were assembled, briefed and divided into groups to take the indoor tests. As each man completed a test, it was graded and his score was placed on a score sheet for that test, as well as on his sum-

They are tested also in first-aid . . .



mine warfare . . .

mary score sheet. If he passed, his summary score sheet, together with his score sheet for that test, was placed in an envelope, and he was directed to proceed to the next test. If he failed, his score sheet was retained, and he was excused from further participation in the test. Each man's score as obtained was phoned from the testing area into the statistical center, where a master score sheet was maintained. This served as a double check against discrepancies and gave the statistical center an opportunity to keep abreast of the progress of the tests. The outdoor tests were conducted in the same manner. In all, the tests required 19 days.

Of the 2879 who started, 701 officers and enlisted men passed—or 24.35% of the total who participated. However, based on the total eligible present for duty, which was 6046, the division percentage of passing was 11.59%. As we had hoped for a higher percentage, this number at first was a disappointment. But on second thought it seemed about right.

It must be remembered that this is a battery of tests and not just one test. A participant must pass each subject and cannot use his superior performance in one to cover his deficiency in another. The weaker candidates were eliminated early in the series by giving the written tests first. Of the 2879 entries, only 35% or 1007 successfully completed the written tests and continued to the first practical test. The group became progressively more select as the tests continued. On many of the practical tests there were few failures. This can be attributed partly to the selective process and partly to the fact that the fundamentals to be mastered in these subjects are relatively simple. Some of our tests may have been too easy, some too difficult. Our next tests will enable us to evaluate and validate our initial findings. In the meantime these statistics may prove of interest and value to others engaged in Expert Infantryman Badge training.

The soldiers' attitude toward these tests proved most interesting. At

first, when preliminary instruction began, there was only mild interest. Then as each battle group conducted its part of the test, interest mounted rapidly. Many men, including those with several years of service, were shocked at their failure to pass the battle group tests; some company commanders were surprised at the poor showing of their units. As units approached the division tests, interest was stimulated and competition rose to a high pitch. Men industriously studied field manuals and worked out on the bayonet course at night and on weekends. Most men showed genuine disappointment when they failed. Some actually cried when they failed on one of the last stages after successfully completing most of the test. Many expressed a desire to repeat and wanted to know when the next test would be held.

It is not possible to gauge directly and accurately from statistics alone the benefits of this program. However, we know that there were definite benefits. For one, it enabled us to provide a highly instructive and stimulating form of training for the troops during a period which, due to the weather in Germany, can be very difficult. Then, too, immediately following the tests the division

participated in Exercise Sabre Hawk. Even though we had received many new men since the last period of extensive unit field training, the individual soldiers of the division conducted themselves in a highly professional manner. The commanders in the division were unanimous in attributing this fine performance, at least in part, to the high standards of training achieved in preparing for the Expert Infantryman Badge tests. In fact, the results were so gratifying that all commanders were of the opinion that, if the training calendar would permit, the tests should be required semi-annually in all active Infantry units. Such a program would improve the proficiency of a unit in individual training and give proper emphasis to the importance of the role of the individual Infantryman on the battlefield.

Since General Gray's article was written several changes have been made in the test prescribed for the Expert Infantryman's Badge. These changes are incorporated in AR 600-73, dated 20 June 1958.

The new regulation places the responsibility for appointing the EIB board on the battle group commander. Major changes in Phase I of the

bayonet fighting.



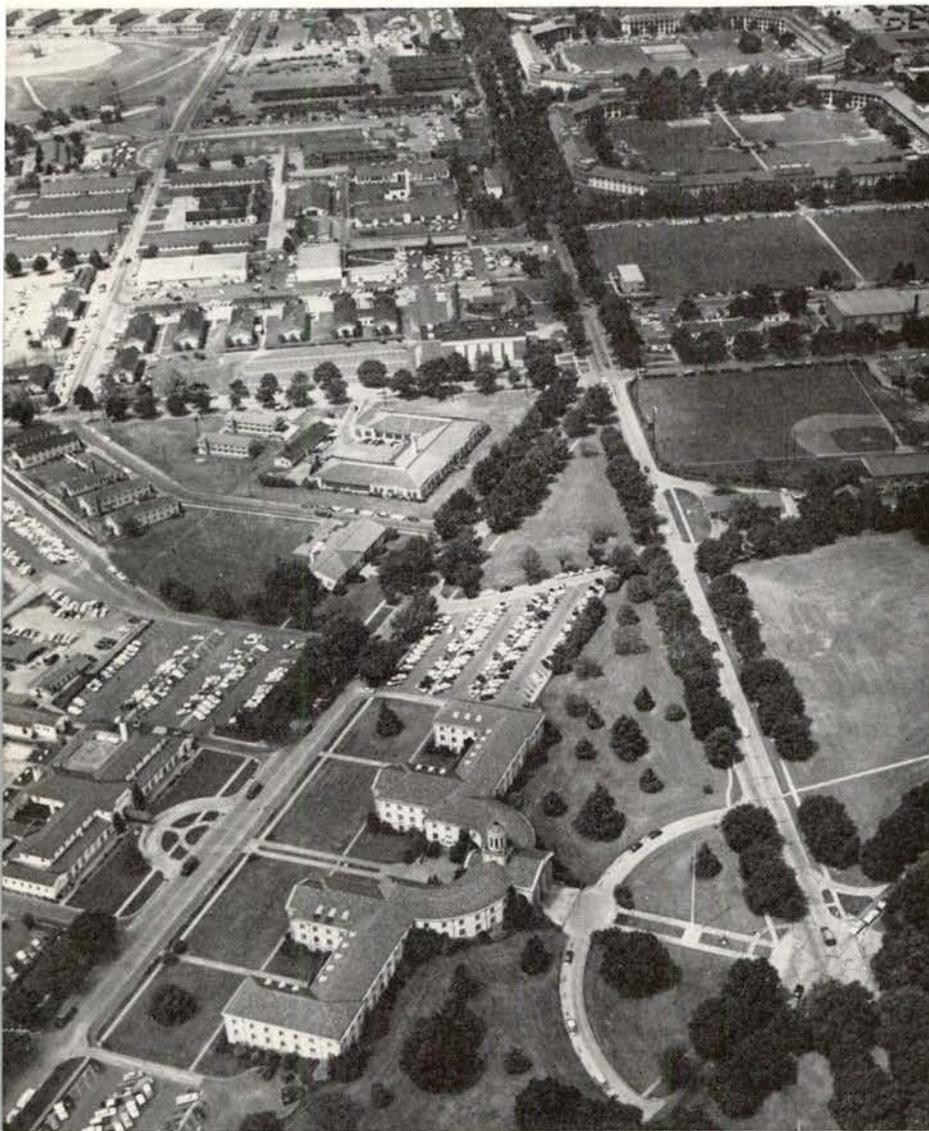
Shortly after writing this article General Gray became commander of 24th Infantry Division troops in Lebanon. He is shown here boarding an Army aircraft in Beirut.

test are the elimination of the 12-mile march and the bayonet course requirements. However, Infantrymen armed with the service rifle must be rated expert with the bayonet as a prerequisite to taking the test.

The physical fitness standards have been raised 25 points so that a total of 250 points now must be scored out of the possible 500 to achieve qualification. Another change adds an escape, evasion and survival requirement to the written portion of the intelligence test, and an entirely new test section has been devoted to individual protective measures against CBR warfare. The first aid requirement has also been modified so that the candidate is tested on methods of treating wounds he might receive on the atomic battlefield. Knowledge of the Code of conduct is required in the military courtesy segment. Each EIB candidate is required to explain what the articles of the Code mean.

—Editor

THE INFANTRY



FORT Benning is the home of all Infantrymen and the focal point of Infantry activities. Most Infantry officers and many enlisted men begin their careers here and return periodically for duty or for schooling. But such tours generally are infrequent and many Infantrymen find themselves "out of touch" with their Infantry home.

We are introducing a pictorial feature to give Infantrymen who are scattered around the globe a periodic look at the constantly changing facilities and activities at their Infantry Center.

In this first feature we shall take a look at the main post and at some of the more recent construction at Benning. The aerial photo at the left shows the hub of the Infantry Center. In this beautifully landscaped and highly attractive area are located most of the facilities which serve the main post community. Starting at the bottom of the photo, most Infantrymen will recognize the Infantry School Building and the Main Officers Mess which is just across the street at the rear of the School.

- Shown here are the eight 450-man barracks built near the jump tower area several years ago. Eighteen 225-man barracks of similar construction were built in the area of the 1st Brigade and eight 225-man barracks have been completed in the Kelley Hill area. Eight 326-man barracks are under construction at Kelley Hill and are to be completed before the end of this year.

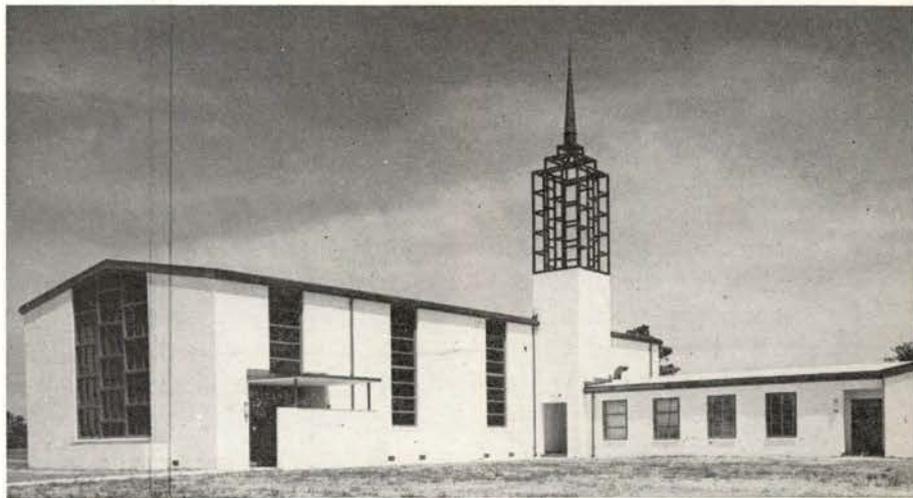


CENTER

If we move up the left side of the photo we see the book store, the Army field printing plant, the main post theater, the library, bus terminal, new post exchange, commissary, milk bar, new service station, and at the top of the photo some of the new troop quarters.

Returning to the lower right hand corner of the picture and moving up the right side of the main thoroughfare (Wold Avenue), we see a portion of Chapel Field, the garden and toy shop. Gowdy baseball diamond, the service club, snack bar, field house, new Fort Benning National Bank, Stilwell Field and two of the large troop cuartels. Just off the picture to the right are the Protestant and Catholic chapels, Doughboy Stadium, Red Cross headquarters, the post office, fire station and finance office.

The other photos in this feature show a few of the numerous facilities that have been constructed at the Center during the past several years. Other new construction will be covered in our next issue.



- **TOP:** Martin Army Hospital was opened at the Infantry Center on 1 July 1958. Constructed at a cost of \$8,000,000, the new nine-story, 500-bed hospital can be expanded to 1000 beds.
- **CENTER:** This modern chapel was completed approximately two years ago in the area of the 1st Brigade.
- **BOTTOM:** The new National Bank of Fort Benning is completely modern in every respect. It was built last year on the Wold Avenue end of Stilwell Field, across from the post library.
- **LEFT:** These quarters for enlisted families are part of the Capehart housing under construction at Fort Benning. The first of 752 enlisted units and 248 officer units were opened in February. All are to be completed by next month.



HOW WOULD YOU DO IT?

By Capt Robert F. Lynd and Lt Wesley B. Shull

Read the situations, study the maps and the requirements.

Then compare your solutions with those of the authors.

TACTICAL nuclear weapons and their inherent threat to large masses of troops are certain to affect future combat operations. It is visualized that warfare in which such weapons are used or in which their use is threatened may consist of actions between well-dispersed, hard-hitting, highly mobile task forces. These units must be able to form rapidly, strike with speed and power, and disperse quickly to avoid atomic retaliation.

It is apparent that commanders at all echelons not only must recognize the need for task forces but also must know how to organize, control and fight them. This applies to commanders of units down to and including the platoon. It is highly probable that small-unit task forces will be built around the rifle platoon of the pentomic Infantry company.

Because of their flexibility, task forces can be assigned independent or semi-independent missions of wide variety. They can act as an advance or flank guard; provide reconnaissance to the front, flanks or rear; maintain contact between friendly units; establish roadblocks and ambushes; mop up small, isolated or bypassed enemy groups; and seize, destroy or hold for short periods of time important point installations or critical terrain features.

In organizing a task force, a commander can be guided by the helpful word "METT." In essence, he should

make a hasty estimate of the situation and consider the following factors: **Mission, Enemy Situation, Terrain and Troops Available.**

The commander should also consider the span of control and the communication necessary for control. He should strive to maintain tactical integrity within the elements of the task force. To realize the full potential of this highly versatile organization, the commander should be fully acquainted with the capabilities and limitations of all means of tactical mobility, i.e., foot, vehicular and airborne. And he should know how to take maximum advantage of the mobility made available to him.

With this brief background (plus your general knowledge of tactics and any specific knowledge you may have concerning task forces¹), let's see how you would solve some of the problems that a platoon leader faces in organizing and planning for the employment of a helicopterborne, small-unit task force.

General Situation

It is 28 March. The 10th Infantry Division has been attacking to the east for the past three weeks and is preparing to continue the attack. Enemy dispositions and control measures are shown in Figure 1. The 2d Battle

¹Platoon-size task forces were discussed in the October, 1956 issue of the *Infantry School Quarterly*.

Group, 10th Infantry, and the 1st Battle Group, 87th Infantry, are now in a reserve area to the west. Commanding General, 10th Division, has ordered Colonel, 1st Battle Group, 87th Infantry, to pass through the 2d Battle Group, 15th Infantry, and continue the attack to the east to seize Objective 871 and be prepared to continue the attack on order. To assist the 1st Battle Group, 87th Infantry, the division commander attached one company of Infantry carriers, a platoon of trucks and a company of tanks. An engineer company will also support the attack. In addition, six H-34 helicopters are available. The operation will be supported by atomic fires as shown. These fires will be detonated at H minus five minutes. H hour is 290600 March. Time of detonation will be known as A hour. The enemy has been fighting a stubborn delaying action and has been using atomic fires to assist in his defense.

Colonel, 1st Battle Group, 87th Infantry, returned from division, formulated his plan of attack and issued the order to his company commanders. The 1st Battle Group, 87th Infantry, mechanized and supported by atomic fires, will pass through 2d Battle Group, 15th Infantry, and continue the advance at 0600 on two axes. Company A (reinforced) will be on the northern axis and Company D (reinforced) will move along the southern axis. Company B will follow Company A. Company C in reserve will organize a platoon-size, helicopterborne task force, using six H-34 helicopters, to provide flank security for Axis of Advance Red in the vicinity of the road junction at Highway 22 and Pine Road. Due to possible road obstruction and neutron-induced radiation along this axis, it is anticipated that the leading elements of the battle group will not reach the junction until H plus two hours. At that time the task force will rejoin its parent unit (Company C) to constitute the remainder of the reserve force for an attack on Objective 871.

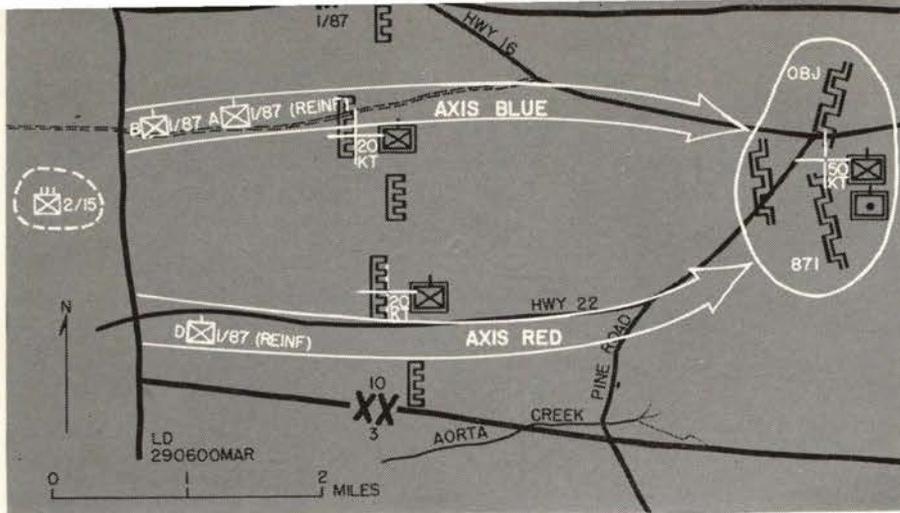


Figure 1.

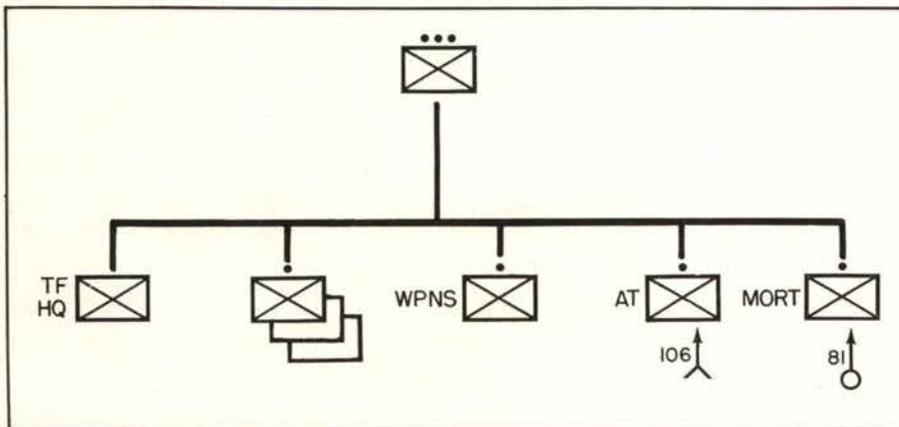
Special Situation

It is now 281400 March. You are the platoon leader, 1st platoon, Company C. You have just received from the company commander a fragmentary order, portions of which follow:

"Lieutenant, you will move your platoon at 0600 hours tomorrow morning by helicopter to RJ Highway 22 and Pine Road to provide flank security for the battle group attack along Axis of Advance Red. You will have six H-34 helicopters. Also, if you think you will need them, I'll let you have one antitank squad and one 81mm mortar squad from the weapons platoon. Because of the distance and the enemy situation, you won't be able to make a ground reconnaissance. At H minus 5 minutes, three atomic weapons will be detonated as

shown on the map (Figure 1). You can expect enemy stragglers moving eastward from their frontlines, and also there may be enemy reinforcements moving north along Pine Road to assist in the defense. I want you to establish a roadblock on Pine Road so that the attack along Axis of Advance Red will proceed uninterrupted. There are some AT mines at the company ammunition distributing point. You will be in the area at the roadblock for approximately two hours. When the elements proceeding along Axis of Advance Red pass by your position, withdraw on my order and rejoin the company. I have available some radiac equipment so that you can conduct radiological monitoring in the vicinity of your objective. The command dosage is 50 roentgens."

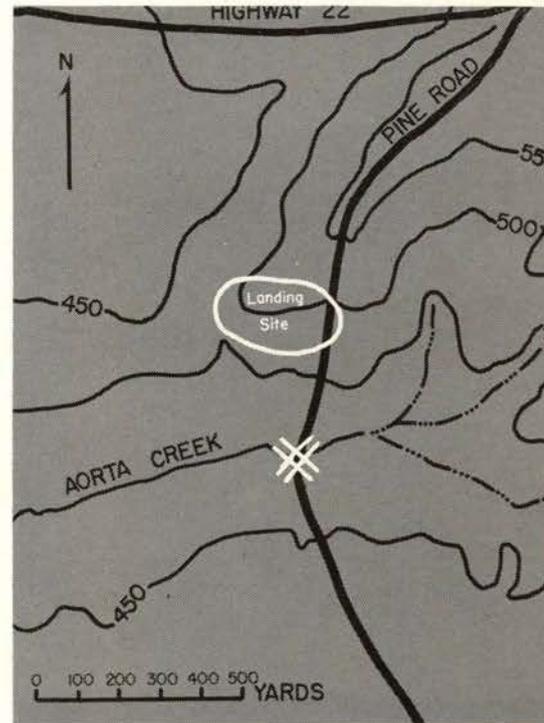
Figure 3. Task force organization.



First Requirement

Assuming you have a full strength rifle platoon, how do you plan to organize the terrain (Figure 2) to accomplish your mission? Do you plan to take the antitank and/or 81mm mortar squad? If so, where do you plan to employ them in your objective area? What additional communication equipment do you desire?

Figure 2.



Situation Continued

His plan having been approved, the task force commander begins his consideration of the means for transporting his force (Figure 3) to the objective area. Each of the six H-34 helicopters can lift 12 combat-equipped troops or the 106mm rifle and carrier (1/4-ton truck) on a sling. Weight limitations restrict any troops from being loaded into the helicopter that slings this weapon. Further experimentation with the 106mm rifle revealed that it was possible to dismount it from the carrier, leave the carrier behind and take the rifle inside the helicopter. In addition, there was still enough room within the aircraft to load the four members of the anti-tank squad.

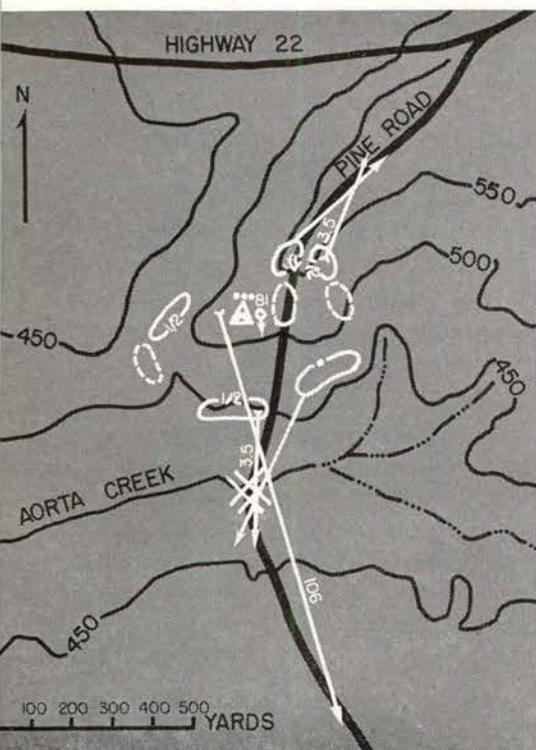
Second Requirement

As task force commander, what plans will you make for loading? You must load your full-strength platoon, one medic, the 81mm mortar squad, an FO, a computer and his radio-telephone operator, radiac equipment and the mines to be used in the roadblock. In addition, you must decide how you will carry the antitank squad and its 106mm rifle. Will it be slung with carrier or placed inside the aircraft? Whom will you appoint as helicopter commander for each aircraft, and what provisions will you make for communications within the task force while in flight?

Solution and Discussion of First Requirement

The general location of the roadblock (Figure 4) was selected by the company commander. The task force commander decides to bury and camouflage the mines on the enemy side of Aorta Creek. This will require the enemy to fight his way through the obstacle after being delayed by the roadblock. The lieutenant initially made a map reconnaissance and de-

Figure 4.



termined the enemy's best foot and vehicular approaches leading into the area. Because the task force will be operating deep in enemy-held territory, he realizes that a threat exists from all directions. However, his mission dictates that the bulk of firepower be placed to cover the roadblock. By placing the 1st squad to the east of the roadblock and Alfa team of the 2d squad to the west, the task force commander can adequately cover this major approach. He plans to locate one machinegun in the 1st squad's area and a 3.5-inch rocket launcher with Alfa team of the 2d squad to cover the roadblock with automatic weapons and antitank fire. Bravo team of the 2d squad is located to cover the approach from the northwest. A supplementary position oriented to the west enables this unit to cover the high ground approach leading into the area and also permits the commander to bring the firepower of two full squads to bear on the roadblock if it becomes necessary. The 3d squad is disposed on either side of Pine Road, facing to the north. A machinegun team and a 3.5-inch rocket launcher team are located within the squad's area to cover the high-speed approach from the north. Fire team supplementary positions permit the 3d squad to reorient to the east or west as demanded by the situation.

The commander requests one antitank squad to provide longer range fire support. He places the squad in partial defilade to cover the high-speed approach from the south. From this position the 106mm rifle can make the best use of its long-range fire to take on targets as they initially appear on the high ground. One 81mm mortar squad is also requested to provide indirect fire support. It is centrally located in defilade, and because of its 360-degree traverse, it can furnish all-round support. Since it is anticipated that the task force will be in position for only two hours, the commander plans to engage the enemy at the maximum ranges of these

supporting weapons. This should assist in delaying the enemy movement for the specified time. The CP-OP is located where the most complete observation of the area can be obtained.

Because of the dispersed condition of the task force, control is difficult. However, with sufficient communications, the commander can adequately control his unit. An AN/PRC-10 radio permits him to stay in contact with the company commander. The FO also carries an AN/PRC-10 as does the computer, who will be at the mortar position and will need to communicate with the FO. The task force commander and the antitank squad leader carry their organic AN/PRC-6 radios, and four additional radios are requested: one each for the 1st and 3d squads and one with each fire team of the 2d squad.

The task force commander has made adequate plans to accomplish his mission. He has prepared to establish the roadblock and defend it with antitank, indirect and small-arms fire. The remainder of his task force is dispersed to allow for all-round defense. The communications he has requested and his selection of supplementary positions permit the task force commander to be flexible enough to engage the enemy, regardless of the direction in which he may strike. Detailed planning by the squad leaders will complete this tactical plan. However, it should be kept in mind that it is a tentative plan, and it has been conceived from a map reconnaissance only. The commander may find it necessary to alter the positions of some of his weapons and units upon arrival at the objective area.

Solution and Discussion of Second Requirement

The task force commander loads his force as follows:

First helicopter: Platoon sergeant in charge; 1st squad (AN/PRC-6 radio with squad leader); mines; and radiac equipment. Total: 12 men.

Second helicopter: Squad leader,

2d squad (with AN/PRC-6 radio) in charge; Alfa team, 2d squad; machinegun team; 3.5-inch rocket launcher team; and weapons squad leader. Total: 12 men.

Third helicopter: Task force commander (with AN/PRC-6 radio) in charge; messenger (with AN/PRC-10 radio); forward observer (with AN/PRC-10 radio); Bravo team, 2d squad (AN/PRC-6 radio with team leader); medic; and machinegun team. Total: 12 men.

Fourth helicopter: Squad leader, 3d squad in charge; Alfa team, 3d squad; antitank squad (AN/PRC-6 radio with squad leader); and 3.5-inch rocket launcher team. Total: 12 men.

Fifth helicopter: 106mm recoilless rifle and carrier (¼-ton truck) on sling.

Sixth helicopter: Mortar squad (squad leader in charge); Bravo team, 3d squad (AN/PRC-6 radio with team leader); computer; and radio operator (with AN/PRC-10 radio). Total: 12 men.

In this loading plan the commander has followed certain basic principles. He placed his leaders in different helicopters, and he split his light crew-served weapons. Those units which will be used initially are loaded in the lead aircraft, and those which will organize the rear area take the trailing H-34s. The 1st squad is responsible for establishing the roadblock and therefore has been assigned the mission of emplacing the mines. To insure that the task force does not exceed the command dosage of 50 roentgens, the commander has decided to give the lead helicopter the radiac equipment. Alfa team of the 2d squad will also cover the roadblock and therefore is in the second helicopter. Notice that this aircraft also transports a rocket launcher team and a machinegun team, both of which will cover the roadblock. This gives immediate coverage of the most dangerous approach leading into the area and permits the remainder of the force to move into position with some degree of security. The antitank squad

CAPT ROBERT F. LYND received his commission upon graduation from Virginia Military Institute in 1950. He served as a platoon leader with the 516th Airborne Infantry Regiment, 101st Airborne Division, at Camp Breckinridge and then attended the Associate Company Officers Course at the Infantry School. In 1952 he went to Korea where he served as an executive officer and later as a company commander with the 224th Infantry Regiment, 40th Infantry Division. Upon returning to the United States, Captain Lynd commanded a company of the 3d Infantry Regiment at Fort Myer. He then became aide-de-camp to the commanding general of Fort Ord. He was graduated from the Advanced Course at the Infantry School in 1957 and has since been assigned to the School as an instructor with the Platoon Tactics Committee of the Ranger Department.

LT WESLEY B. SHULL received an ROTC commission when he was graduated from Pennsylvania Military College in 1952. Upon completing the Associate Infantry Officers Course at Fort Benning, he became a platoon leader with the 19th FA Battalion at Indiantown Gap Military Reservation. In 1953 he went to Korea, where he served with the 9th Infantry Regiment, 2d Infantry Division. He returned to Fort Benning in July 1954 and for two years served with the 29th Infantry Regiment. During the next two years he was an instructor in the Tactical Department (now the Command and Staff Department) of the United States Army Infantry School. He is currently attending the Advanced Officers Course at the Infantry School.

lands just prior to the 106mm rifle and its carrier. The rifle is slung with carrier so that once on the ground, none of its mobility is sacrificed. With a reduced load of gasoline in the helicopter, the ¼-ton truck driver could have been carried in helicopter number five.

In the event that the landing site and objective area are occupied by enemy units, it will be necessary to land in an alternate location, attack the enemy forces and seize the ground. With this thought in mind, the task force commander has loaded his maneuver element and most of his direct fire support weapons forward and the indirect fire support weapons and a small reserve in the rear.

Tactical integrity has been maintained throughout the loading of the task force. Team organization of the ROCID rifle company lends itself to this type of reorganization for loading. The commander has made arrangements to communicate with each helicopter while in flight without disrupting his communication system on the ground. Only one AN/PRC-6 radio needed to be shifted. The 3d

squad leader gave his radio to the Bravo fire team leader in order to complete the platoon net while in flight. By using the antitank squad's AN/PRC-6, the 3d squad leader can contact the platoon leader if necessary. The commander assigned the ranking man in each helicopter to be in charge of the group while in flight.

After issuing his order, the task force commander brought together his helicopter commanders and pointed out a few helpful hints regarding movement in the aircraft. His conversation went something like this: "Now here are some things I want you to keep in mind. Load your men into the copters in the reverse order of the way you want them to unload. That is, the man you want to get out first should load on last. Those of you who have crew-served weapons, be sure that you also have the ammunition. In the case of the mortar, I want every man in Alfa team of the 3d squad to carry two rounds of 81mm ammo. On the way to your position drop it off at the mortar squad. Of course, you mortar squad men will carry ammo also. Without ammo

those weapons would be of little value if you were forced down before you got to the landing site. The crew-served weapons should be loaded last so that the rest of the men do not have to climb over them before getting into the copter. The gunner and his assistant should follow the weapon into the plane and be ready to exit rapidly as we touch down. A fast exit is essential in this operation. We have to move to our positions quickly and be ready to engage the enemy immediately. To assist you in getting to your position, each helicopter pilot will call you on the intercom system about two minutes prior to landing and will tell you the direction in which he plans to land. This should help you get oriented more quickly. Now for one of the most important points of all. I want each of you to position yourself near the door as we fly to the area and follow our route on

your map. Be sure that you know your position while in flight. This will be difficult, since we will be flying fast and very low in the draws most of the way. Here's the reason behind this: If you are forced to land before reaching the objective area, I want you to move toward it by foot. If you know where you are, you'll be able to get to the area a lot sooner. We need every man we have. No more and no less. Are there any questions? OK, I'll see you in the ready area 30 minutes prior to A hour."

Summary

The task force commander was given a mission which required thorough knowledge and detailed planning on his part. Because this mission was to carry him deep into enemy territory, a ground reconnaissance was impossible—he had to rely entirely on his map. His plan was a

tentative one, which was flexible enough to permit him to make changes if the terrain or the situation dictated.

To insure that his planning was complete and realistic, the task force commander used the technique of backward planning. He first determined how he would organize the terrain in the objective area. With this in mind he decided on the composition of his task force. Knowing that his forces would be moved by helicopter, he planned for the loading and order of flight of the aircraft available to him. By planning for these steps in detail, he was able to issue a complete, clear and detailed order to his task force.

Thus, by applying his knowledge of tactics and employing certain techniques in planning and execution, the task force commander organized his unit for the successful accomplishment of his mission.

REALIGNMENT OF COMBAT ARMS STAFF SECTIONS AT HEADQUARTERS USCONARC

Headquarters, U. S. Continental Army Command, recently announced the consolidation of the staff sections of its three combat arms—Infantry, Armor and Artillery—into existing USCONARC staff structure. Maj Gen John A. Dabney has been appointed Special Assistant to the Commanding General for Combat Arms at the command level.

This realignment was made by Gen Bruce C. Clarke, who took command of USCONARC on 1 August, to simplify his staff organization by placing combat arms responsibilities within the General and Special Staff Sections. Increased reliance will be placed on the combat arms Schools under General Clarke's command.

In addition to Maj Gen Paul L. Freeman, Jr., Commandant of the Infantry School, Fort Benning, Ga., the chiefs of the Schools include Maj Gen John L. Ryan, Jr., of the Armor School, Fort Knox, Ky.; Maj Gen Sam C. Russell of the Air Defense School, Fort Bliss, Texas; and Maj Gen Thomas E. DeShazo of the Artillery and Missile School, Fort Sill, Okla.

Speaking of the change, General Clarke has emphasized that no derogation of the combat arms should be inferred from the order. He has remarked that he feels this realignment within the staff—with a Special Assistant at the command level — will result in a better and more effective integration of the USCONARC staff with the combat arms Schools.

The change will give stronger and more positive supervision at the command level in Headquarters, USCONARC, and at the Schools. It should provide a better combat arms program Army-wide.

In every war which our Nation has fought, the final responsibility for victory has rested inevitably upon the Infantry, for only the Infantry closes with the enemy and destroys him. If in the future the United States should again be tested in battle, it will once more be the Infantryman who will determine our final success. Recognizing and accepting their responsibility, the Infantrymen of our modern Army are developing the new skills and mastering the new equipment which, together with their traditional qualities of valor and devotion, provide a major element of our Army's effectiveness in carrying out its vital mission.

GENERAL MAXWELL D. TAYLOR



Give Little Tube a Job!

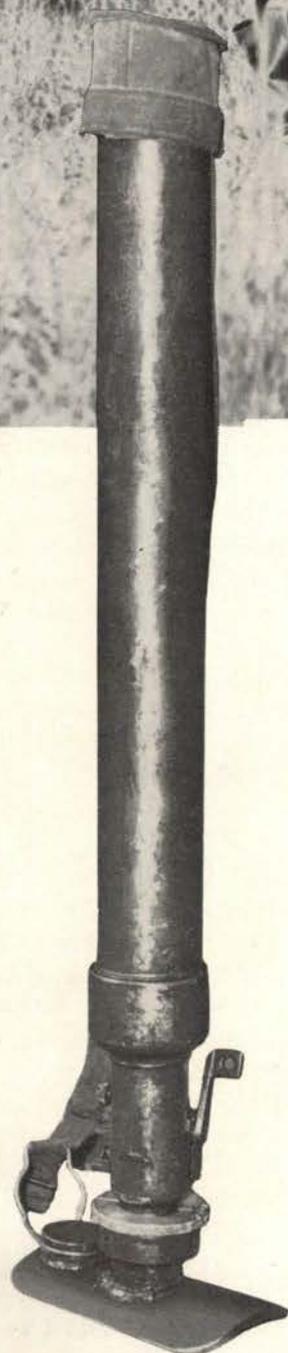
Versatile, uncomplicated and available, the hand-held 60mm mortar should be given to the rifle platoon as an organic indirect fire weapon.

By Maj Frederick M. McConnell & Sgt Calvin W. Sears

Too young for effective combat use in Korea, and outranked by his big brother the 81mm mortar during the reorganization of the rifle company, is the sad story of "Little Tube," the hand-held 60mm mortar. However, a closer look at the capabilities of this potent little fellow indicates that he might well be the answer to the rifle platoon leader's

dream of having his own organic indirect fire weapon.

"Gimme a stalk of bananas and I'll train a squad of monkeys to fire the 60mm mortar," remarked a rugged Infantry colonel with mortar experience from the sands of North Africa to the hedgerows of Normandy. With this comment he stressed the greatest advantage of the





Firing the "Little Tube."

hand-held 60—its utter simplicity. No complicated sights and aiming stakes, no gunnery, no fire direction center problems, not even a forward observer—just two Infantrymen, a gunner and a loader, willing to "shoot and scoot." Anyone on the battle-

field with the manual dexterity to raise or lower a 16-pound tube, cant it to the right or left according to *feel* with the right hand and press the trigger mechanism with the left, can "gun" the hand-held 60 and find himself raising more havoc, *pound-*

for-pound, and at a greater range, than anything the rifle platoon leader now has in his arsenal.

Speaking of range, the platoon's present organic weapons are pretty much confined to the platoon area, or at best, to five or six hundred yards out front. But our versatile little friend can reach out with the high explosive round to 2000¹ yards, if necessary. What might he want to do out there in the bailiwick of Medium and Big Tube? Ah! That's just the point—time is of the essence for the rifle platoon leader. Through his binoculars he picks up a small enemy party moving out fast. With Little Tube at his side, he pins them down until the 81 forward observer can effect a shift and take them under heavy fire. Or let's turn the enemy around and have them moving up at a range of 1500 yards. Once again the platoon leader waves a finger at Little Tube and a half dozen rounds are on the way. So what if he doesn't kill many of the advancing enemy? He stops 'em, even if only momentarily. He causes

MAJ FREDERICK M. MCCONNELL is the executive officer of the Mortar Committee in the Infantry School's Weapons Department. He received an Infantry commission in the Organized Reserve Corps at Fort Moultrie in 1938. During World War II he served with the 260th Infantry Regiment at Camp Shelby and with the 334th Infantry Regiment, 84th Infantry Division in Europe. After the close of World War II, he attended Clemson College, from which he was graduated in 1950. He then became an instructor in Military Science and Tactics and chief of the Infantry Section at Georgia Institute of Technology. In 1952 he went to Korea, where he commanded both a rifle company and a heavy weapons company with the 9th Infantry Regiment, 2d Infantry Division. Major McConnell began his current assignment at the Infantry School after completing the Infantry Officers Advanced Course in 1954.

SGT CALVIN W. SEARS first entered the military service in 1944. After training in the States he went to the European Theater of Operations, where he served as a machinegunner with the 2d Infantry Division. After the war, he was discharged from the service and spent a year in civilian life. He reenlisted in 1949 and was sent to the Far East Command, where he served in Korea and later with the 1st Cavalry Division in Japan. He returned to the United States in October 1955 and became an assistant instructor with the Mortar Committee of the Weapons Department, United States Army Infantry School. He left the School in April of this year and is currently a squad leader with an 81mm mortar platoon in Iceland.

¹While the field manuals state that the hand-held 60mm mortar normally is not used at ranges greater than 500 yards, these statements do not apply to the uses of the mortar proposed in this article; lengthy concentrations and barrages are not advocated. However, the gunner must keep in mind that, as the range increases, the necessity for keeping the M-1 baseplate firmly down also increases.

a regrouping—or, depending on their intent, he might even turn them around and send them back in the direction from which they came. At any rate, the platoon leader has been given a left arm with which to feint while he keeps his right arm cocked to throw his Sunday punch of direct fire weapons. But don't saddle Little Tube with barrages—that sort of thing isn't a part of his bag of tricks. Willing though he may be, he just doesn't carry enough ammunition to get involved in heavy concentrations or barrage-type fires. But, once again, he can stand by for action and lower the boom on anyone slipping by the 81 and 4.2 barrages. Remember, Little Tube's crew is a "shoot and scoot" crew, but even so, after they've learned the *feel* of the weapon, they can pump twelve rounds into the air over the enemy, scamper down into deep defilade and be rolling a cigarette before the last round hits the ground.

Let's switch again to the impact area. There are other things this many-talented fellow can do besides drop high explosives at 2000 yards. The platoon leader wants to mark a terrain feature some 1500 yards out in front on which the 81s can register. No sooner said than done. Little Tube puts a white phosphorus round right on the point desired, the 81 forward observer adjusts and another concentration is safely logged away in the records. The platoon leader is satisfied that everyone knows what he wants and where he wants it, and all in record time. Suppose he wants to mark a target for his own platoon weapons, or point out a boundary, or signal the company—Bingo! Little Tube and his white phosphorus are right there.

Then there's the ever present problem of illumination. Little Tube can do this, too. Sure the platoon leader has his close-in pyrotechnics and grenades, but Little Tube can throw an illuminating round of 150,000 candlepower up to 1100 yards in front of the platoon and with no

delay other than the time it takes to get permission from the next higher headquarters. He can do it, that is, provided the weapons platoon leader hasn't absconded with Little Tube for use on illuminating missions for his 106 recoilless rifles.

But Little Tube doesn't have to stay behind the lines and wait for something to happen. Word comes down for a combat patrol to go out far beyond the platoon limits. The two Little Tube boys are just what the doctor ordered for such a mission. They travel light but carry quite a punch every step of the way. It doesn't matter whether the landscape is mountain-goat crags or boaconstrictor jungle, Little Tube will be

right in there, ready to fire on a command no more complicated than a wave of the hand from the patrol leader. Of course, if the patrol leader wants to get sophisticated, he can hold up fingers for the number of rounds he wants.

The patrol moves off and no sooner passes beyond the protection of friendly direct fire weapons than it bumps head-on into an enemy of comparable size. Never underestimating the enemy, we'll say he knows the terrain slightly better than we do. After a brief exchange of rifle fire he begins to maneuver into known positions on higher ground, thus blocking the movement of our patrol but staying just beyond effective range of

Little Tube's effectiveness is demonstrated.



TIME: 1400 hours,
18 December 1957.

PLACE: Coolidge Range,
Fort Benning, Georgia.

WIND: 15 mph from SW.

VISIBILITY: Clear with slight haze
in impact area.

TERRAIN: Sharp ridges and gullies
in right sector, undulating in
left sector.

CREW: Sgt Calvin W. Sears and
Sp3 Alejandro Fernandez.

DEGREE OF EXPERIENCE: Gunner
had not fired the hand-held
mortar in eight months, was
only vaguely familiar with
the impact area and was un-
accustomed to firing the

hand-held mortar at ranges
in excess of 800 yards.

TYPE FIRE: Drop, Trigger.

AMMUNITION: Training Practice.

MORTAR: 60mm M19 with M1
baseplate.

PURPOSE: To fire on two widely
separated targets and dis-
place.

RESULTS: Sgt Sears, as gunner,
fired two rounds on the short-
range target. Without waiting
for results he shifted to the
long-range target, fired two
more rounds and went out of
action. Both targets were sim-
ulated patrol movements and
all four rounds were on tar-
get. *All in sixteen seconds.*

our patrol's direct fire weapons. Little Tube to the front! Needing only a stump, a clump of bushes or a fold in the ground to shield their activities, the tube boys move up ready to fire. But this patrol leader knows his weapons. He directs his rifles and automatic rifles to fire on the nearer enemy positions while simultaneously calling on Little Tube to reach over these fires. This makes things much too uncomfortable for the enemy force. Not only is Little Tube a fine fellow to have along at a time like this, but in giving his assistance he has no tell-tale backblast nor ear-shattering roar to mark the take-off of his small but effective missiles.

Now that we have discussed some of the things Little Tube can do the question arises, "Where should we put him?" Well, the battle group commander has a combination of direct and indirect fire weapons in his mortar battery and assault gun platoon; the rifle company commander has a similar pairing in the 81mm mortars and 106 recoilless rifles of his weapons platoon. In logical order it would seem that Little Tube should replace one of the 3.5 rocket launcher teams in the weapons squad of the rifle platoon. But don't throw that launcher away; put it in the rifle platoon headquarters for emergency use. Now, let's see how the squad looks with the addition of Little Tube.

PRESENT WEAPONS SQUAD

1 Sfc Sqd Ldr	(111.70) (R)
2 Sp3 MG	(111.10) (P)
2 Sp3 Rkt Gnr	(111.10) (P)
2 Pfc Ammo Br	(111.10) (R)
2 Pfc Asst MG	(111.10) (P)
2 Pfc Asst Rkt Gnr	(111.10) (P)

REVISED WEAPONS SQUAD

1 Sfc Sqd Ldr	(111.70) (R)
2 Sp3 MG	(111.10) (P)
1 Sp3 Rkt Gnr	(111.10) (P)
1 Sp3 Mort Gnr	(111.10) (P)
2 Pfc Ammo Br	(111.10) (R)
2 Pfc Asst MG	(111.10) (P)
1 Pfc Asst Rkt Gnr	(111.10) (P)
1 Pfc Asst Mort Gnr	(111.10) (R)

Close examination reveals that, even though the revised column is longer, the number of personnel is the same. But Little Tube's assistant gunner adds a very important rifle to the squad. Since the gunner carries the complete 20.5-pound weapon, his assistant furnishes the rifle power for him. This brings up the question of the duties of the two tube boys. Let's take a look.

The gunner positions the tube, aims and fires the weapon and carries a clover leaf of ammunition. The assistant gunner checks for mask clearance, fixes the charges (one to four), pulls the safety wire and drops the round in. He also carries a clover leaf of ammunition.

Speaking of clover leaves of ammo, what about the ammunition requirements for Little Tube? If all of S4's logistical problems were as easily solved, he could stock up on fat cigars, put his feet on the desk and watch the goods roll past. Light weight is one of Little Tube's cardinal virtues and the same is true of his ammo. Fighting weight for the deadly HE round is 2.90 pounds. In the container it goes up to about 3.50 pounds. Let's fill the clover leaf bags and see how they stack up.

The gunner carries ten rounds of HE—five in the front flap of the clover leaf, five in the rear flap. At 3.50 pounds per round his load is 35 pounds. The assistant gunner carries five rounds of HE in the front flap, weight 17.50 pounds. In the rear flap he has two white phosphorus rounds (9.00 pounds), two illuminating rounds (8.60 pounds) and one round of HE (3.50 pounds). His total load is 38.60 pounds.

Not a terrific amount of ammunition when you look at it—a total of just 20 rounds. But remember, Little Tube's ammo is potent. One of these little 3.5-pound packages can spread lethal fragments over a 20 by 10 yard rectangle. The smart patrol leader will take advantage of

this small package by filling up as many hip pockets as possible before he moves out. The company trains have no big worry, supply-wise. One ¾-ton trailer should suffice.

By carrying one 10-round case of white phosphorus (63 pounds), one nine-round case of illuminating shells (62 pounds), and 10 cases (100 rounds) of HE (490 pounds), the total load on the trains is 615 pounds.

Now that we have covered the logistics, what else can this mighty mouse do? Well, there's one other capability which ties right in with logistics. The 60mm tube is presently used as an insert for the 4.2-inch mortar. With a couple of steel bands and a lathed block of wood, the rifle company commander can use Little Tube with the 81mm mortar in the same manner and for the same purpose.

The company commander should be glad to have Little Tube join his rifle platoon. The missions this little fellow can take on would better the chances of keeping the 81mm mortars in battery where they could be used more effectively as the company commander's personal artillery.

Of course, this idea isn't new. The light mortar is used in a similar manner right now by both friendly and unfriendly forces. The weapon is simple but highly effective. The two tube boys need only know how to dig in the small base plate, how to lock their elbows in position, and how to get the *feel* of the tube. They can then start blasting.

This weapon exists right now in quantity. Until the experts with the slipsticks and drawing boards come up with something better and put it in the hands of the troops, let's give Little Tube a fulltime job.

The opinions expressed in this article are those of the authors and do not necessarily reflect thinking of the Department of Defense or the United States Army Infantry School.



The increasing importance of communication and less specialized maintenance require that rifle company commanders be able to make nontechnical inspections of signal equipment.

How to Inspect Commo Equipment

THE tactical employment of pen-
tomic units on the modern bat-
tlefield will make control more dif-
ficult for Infantry commanders than
it has been in the past. Increased
control problems will in turn require
more efficient use of all available
means of signal communication.

In warfare that will be character-
ized by dispersed and independent
operations, units frequently will have
to be self-sustaining during prolonged
periods of combat. Commanders
must be prepared to operate their
communication equipment for longer
periods of time without exchange or
specialized maintenance. Channels
for the resupply of maintenance items
may not be immediately available as
they have been in the past.

Recognizing the Infantry's need
for dependable, lightweight signal
equipment which will need minimum
maintenance, the combat develop-
ments program is creating equipment
which will have increased capabilities.
At the same time it is simplifying
preventive maintenance techniques
required to keep the equipment op-
erational. These activities will con-

tinue. However, the commander
must be prepared to operate with
what is immediately available when-
ever war begins. The equipment
now in the hands of troops can meet
increasing control requirements if it
is properly maintained. But this re-
quires more closely supervised main-
tenance programs and inspections.

Rifle company commanders have
always recognized the need for well-
supervised maintenance programs
for personnel, weapons and vehicles.
To insure the operation of their
communications, they must give even
more attention to the maintenance
of signal equipment, for without
properly operating communications,
the commander cannot effectively
utilize his personnel, weapons and
vehicles.

Nontechnical inspections of signal
items must be conducted with the
same emphasis as any other inspec-
tion. The commander who can suc-
cessfully inspect his weapons without
being an ordnance specialist is just
as capable of inspecting his com-
munication equipment without being
a signal specialist.

By Capt Emil J. Stryker, Jr., and Clarence J. Schlafer

There is no mystery involved in the inspection of signal equipment. For the most part, and certainly for the purpose of command inspections, it is concerned primarily with the relatively simple physical and operational aspects of the equipment. Furthermore, it need not be an arduous task. It can be accomplished by listening, looking, feeling, smelling and applying common sense.

The human element is the weakest link in the preventive-maintenance chain. This may be due to lack of training and/or to poor supervision. Therefore, to insure effectiveness, the importance of preventive maintenance must be impressed upon all personnel. It must be evidenced all along the chain of command, from the private on up, and it must include vigorous action by the commander. If the program is to be successful, time must be allotted for it. All too often it bogs down because insufficient time is provided. Consider, for instance, the radio man who also drives a vehicle. He is given a limited period of the day for maintenance. What does he take care of—the vehicle or the radio? If he is not given the time to do both, the vehicle may

be serviced while the radio is neglected. To eliminate such situations, the commander must provide sufficient time for preventive maintenance training and for preventive maintenance performance on all equipment. He must also give the program his close personal interest and supervision.

The pentomic rifle company today has seven back-packed radio sets (AN/PRC-10); nine hand-carried radio sets (AN/PRC-6); and one vehicular-mounted radio set (AN/VRC-18). It also has two emergency switchboards (SB-18/GT), two field telephones (TA-312/PT), 11 sound-powered telephones (TA-1/PT) and seven light, hand-carried reel equipment sets (CE-11), each of which has a sound-powered telephone. This is more communication equipment than was found in the rifle company of the triangular division. Yet the number of communication personnel in the new organization has decreased slightly. The pentomic company has only 15 communication personnel: a communication chief, six messengers, six radio-telephone operators and two wiremen. Consequently, there is in-

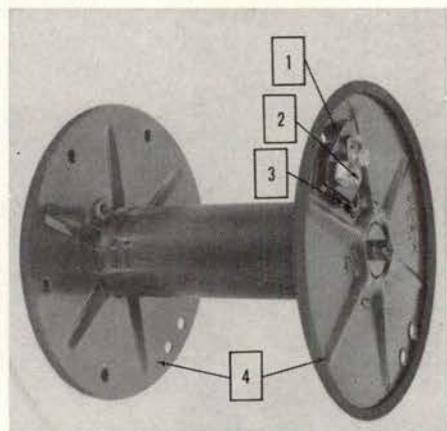
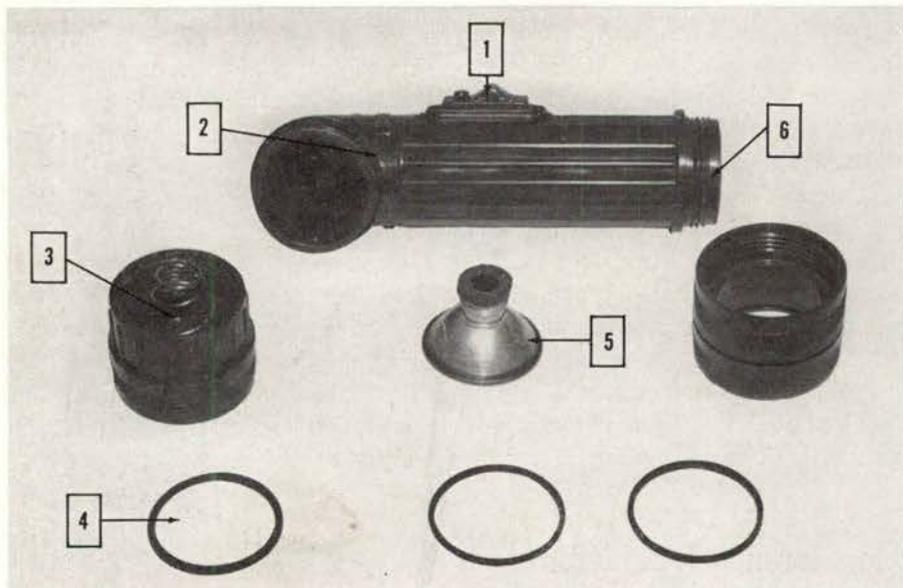


Figure 2. Spool DR-8. Inspect for the following: [1] Broken bakelite base; [2] Corroded or rusty terminals; [3] Missing rubber gasket; [4] Corroded, bent or rusty sides.

creased need for a well-coordinated preventive maintenance program.

Now let's consider a recommended procedure for the conduct of communication inspections. The inspection should begin with an operational test of the equipment. For radio sets, have one piece of equipment set up at a location far enough away to approximate the working range of the set under typical terrain conditions. Pick up the handset and talk to the operator at the distant site. Listen for clear, intelligible signals. In the case of telephone or switchboard equipment, pick up a handset and talk to another station. Listen for clear, understandable and noise-free signals without cross-talk. Operational checks of this type often can be conducted in conjunction with the unit's scheduled training. After the operational checks have been made, continue with the remainder of the inspection. Check for dirt, moisture, unnecessary oil, rust, corrosion, broken or missing components and abuse, just as would be done when inspecting any other type of equipment. Examine each item closely to insure that cables are intact and in good condition, that dial and meter windows are clean, that dial and meter calibrations are legible and that stocks of spare parts are adequate. Feel for loose knobs and switches. Look for deteriorated or

Figure 1. Flashlight MX-991/U. Inspect for the following: [1] Sticking or binding switch, or intermittent operation; [2] Cracked case; [3] Missing spare lamp; [4] Cracked or scratched glass; [5] Rusty reflector; [6] Rust or corrosion inside the case, or batteries installed in stored flashlights.



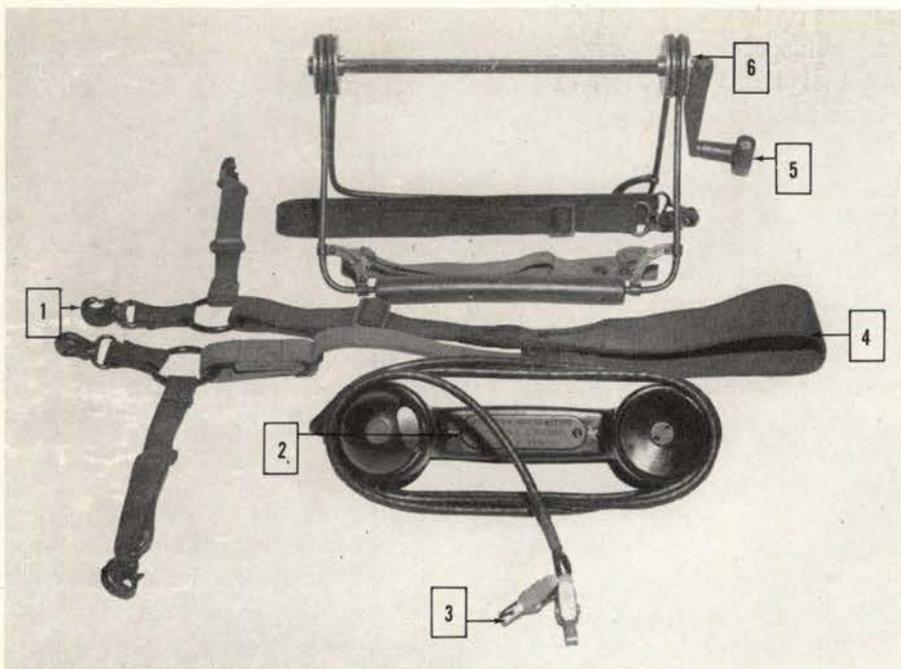


Figure 3. Reel Equipment CE-11. Inspect for the following: [1] Rusty or damaged snaps; [2] Cracked or broken sound-powered phone; [3] Corroded or damaged clips; [4] Incomplete or damaged straps; [5] Incomplete crank; [6] Painted axle.

broken insulation on cables. Make sure that switches have positive action, that the equipment is mounted firmly on its support, that rotating parts move freely and that the equipment is free of dampness. At the same time check for trouble-indicating odors, such as the pungent smell of burned or overheated insulating materials; the damp, sour smell of mold and fungus; the waxy smell of leaking, overheated capacitors; the burning-paint smell of overheated resistors; the tar-like smell of potting compounds. Finally, look for signs of poor housekeeping in the area where the equipment is stored, such as disorder, trash and general uncleanliness.

Many commanders when inspecting signal equipment are deceived by the "sharp" outward appearance of the equipment and therefore forego further inspection. While appearance is important, it can be misleading. Frequently, a "blitz" cloth is the only tool used in preparation for the inspection. Such a situation may be brought about by a commander's overemphasis on "spit and polish." Yet polishing a piece of signal equip-

ment may render it unserviceable.

A combination of practical experience and recommendations from the distributors of signal items has

Figure 4. Telephone TA-1/PT. Inspect for the following: [1] Cracked rubber; [2] Cut, torn or frayed strap; [3] Frayed cord or cut insulation; [4] Sticking or binding press-to-talk switch; [5] Sticking or binding generator switch; [6] Cracked or broken handset; [7] Rusty terminals.



resulted in a simplified technique which commanders may use in making nontechnical inspections of communication equipment. To obtain the best results, it is recommended that the items be displayed as pictured in this article.

There are 32 flashlights in the rifle company. When making an inspection, a number of the lights should be selected at random, inspected disassembled as shown in Figure 1, reassembled with batteries installed and tested for operational efficiency.

The spool DR-8 (Figure 2) and the reel equipment CE-11 (Figure 3) are used together when laying wire and therefore should be displayed and inspected together. The sound-powered telephone shown in Figure 3 is the TS-10, which is now obsolescent. However, this telephone is still being issued in lieu of the sound-powered telephone TA-1, which is shown in Figure 4. Either of these telephones may be issued as part of the reel equipment CE-11.

The spool DR-8 should be displayed with the 3/8 mile of wire which it is capable of carrying. In addition to the sound-powered telephones which may be issued as part of the reel equipment CE-11, there are also 11 sound-powered telephones which are issued as separate items. The carry-

ing case of the TA-1 should be very closely inspected for any damage which might cause it to lose its waterproof characteristics.

The two emergency switchboards SB-18/GT (Figure 5) should be checked for operational efficiency by stacking all seven plugs of each

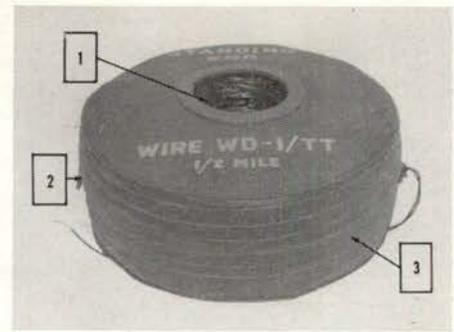


Figure 7. Wire Dispenser MX 306. Inspect for the following: [1] Unserviceable wire; [2] Missing D-rings; [3] Torn or damaged container.

Figure 5. Emergency Switchboard SB-18/GT. Inspect for the following: [1] Mildewed or torn case; [2] Broken snap; [3] Illegible numbers; [4] Corroded female connectors; [5] Corroded male connectors; [6] Missing, bent or damaged clamps; [7] Markings on luminous strips; [8] Unserviceable plugs.

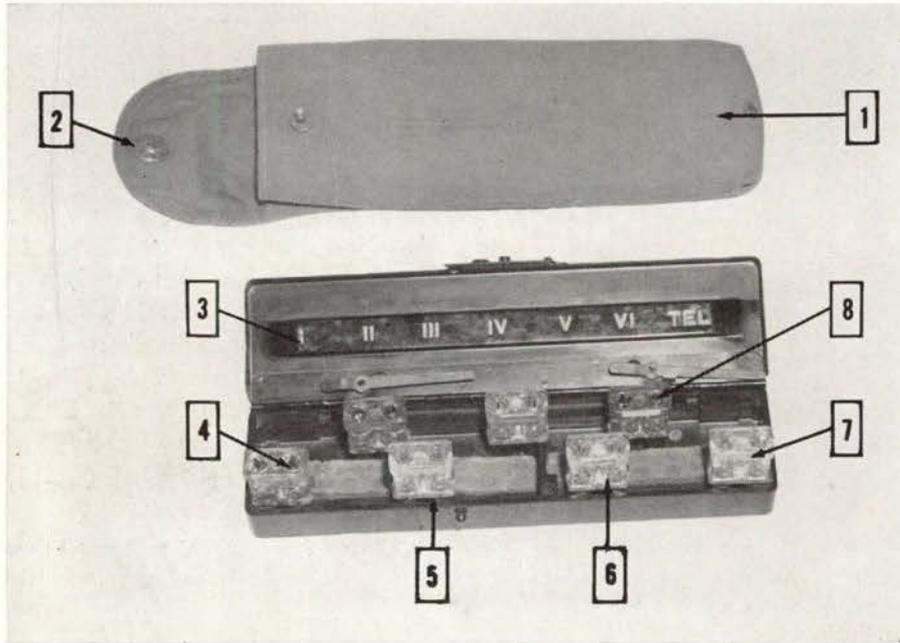
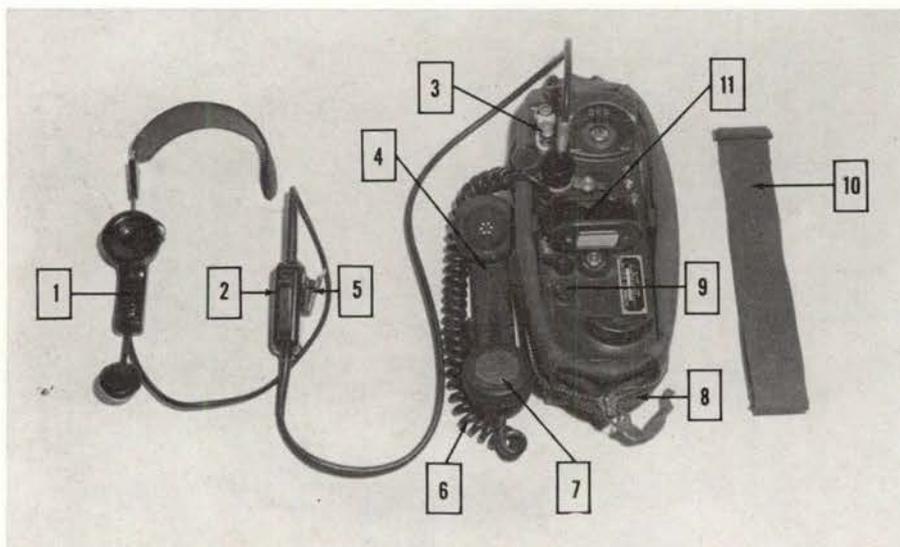


Figure 6. Telephone TA-312/PT. Inspect for the following: [1] Cracked or broken headset; [2] Sticking or binding generator switch; [3] Corroded or rusty terminals; [4] Cracked or broken handset; [5] Rusty or broken clip; [6] Frayed cord or cut insulation; [7] Moisture in the mouthpiece; [8] Mildewed or torn canvas; [9] Loose or missing knob; [10] Cut, torn or frayed strap; [11] Rust or corrosion inside the case, or batteries installed in stored telephones.



switchboard and placing the male connectors of the bottom plug on the terminals of a field telephone. Cranking the hand generator of the telephone should make the neon light in all seven plugs visible. The telephone terminals are shown in Figure 6.

Within the rifle company there are two field telephones TA-312/PT (Figure 6). The TA-312/PT telephone, which is currently replacing the TA-43/PT, has the added capability of accepting headsets, thus allowing the operator the free use of both hands. The items to inspect on both the TA-43/PT and the TA-312/PT are shown in Figure 6.

The nine miles of wire authorized a rifle company are contained in MX-306 dispenser (Figure 7). Since each of the dispensers holds 1/2 mile of wire, the company has a total of 18. The especially versatile MX-306 provides telephone communication while the user is moving. One end of the wire may be connected to a stationary telephone or switchboard. Another telephone may be attached to the dispenser. This permits telephone communication as the wire is being dispensed. To insure that the equipment will provide this capability, it must be carefully inspected. The serviceability of the wire can be checked easily by attaching field telephones to the ends of the wire which protrude from the sides of the dispenser. Cranking the generator of one telephone should

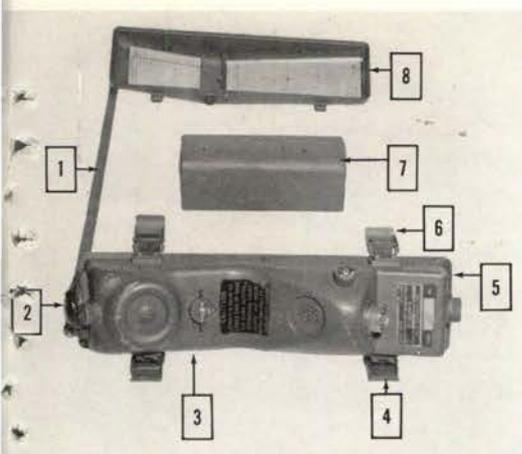


Figure 8. Radio Set AN/PRC-6. Inspect for the following: 1 Difficulty in erecting or retracting the antenna; 2 Moisture condensation in the whip antenna connector; 3 Sticking or binding push-to-talk switch (not visible); 4 Loose or deformed fasteners; 5 Dented or rusty case; 6 Cut, torn or frayed sling; 7 Batteries installed in stored radios; 8 Signs of physical abuse to the cover.

ring the other. If the wire is un-serviceable, it must be removed from the container to be repaired. As it cannot be replaced in the container, it should then be put on one of the DR-8 spools, shown in Figure 2.

Each of the nine AN/PRC-6 radios in the rifle company is assigned a primary function in the company commander's radio net. Since there are no spares, the maintenance of this equipment is most important. Although the radios may be displayed with batteries, as shown in the illustration, they should *not* be stored with the batteries installed. The operational check of this equipment may be made by assembling the radios with batteries installed and transmitting between sets. This may be done during field training when the radios are being used. Additional items to check are shown in Figure 8.

The seven radio sets AN/PRC-10 are also assigned a primary function in the company's communication system. As in the case of the AN/PRC-6, the maintenance of this piece of equipment takes on added importance since no spare sets are authorized. Before an operational

check can be made, the radio sets must be properly calibrated. Items to be inspected are shown in Figure 9.

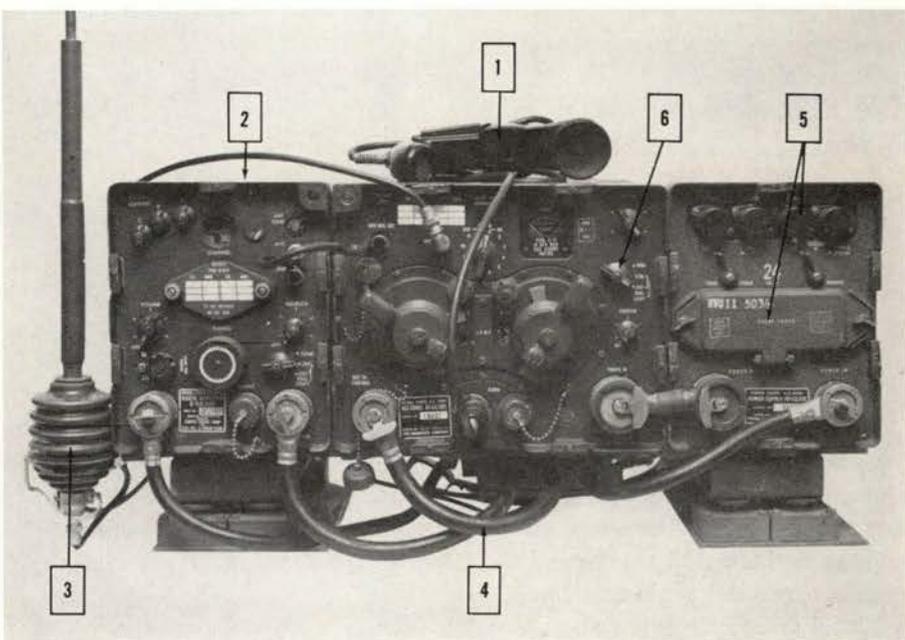
Radio communication between the

rifle company commander and the battle group commander is maintained by means of the radio set AN/VRC-18 (Figure 10). This is a very important link in the chain

Figure 9. Radio Set AN/PRC-10. Inspect for the following: 1 Sticking or binding push-to-talk switch; 2 Rusty or deformed fasteners; 3 Loose handset connection; 4 Corroded transmitter or earphone; 5 Sticking or binding knobs; 6 Cut, torn or frayed bag, or torn stitching; 7 Bent or damaged antenna; 8 Signs of physical abuse on the thread; 9 Corroded antenna base; 10 Broken snaps; 11 Cut, torn or frayed webbing.



Figure 10. Radio Set AN/VRC-18. Inspect for the following: 1 Cracked or broken handset; 2 Dented or rusty case; 3 Cracked insulator; 4 Cut or frayed cords; 5 Missing or incorrect size fuzes; 6 Sticking or binding switches.



This unit, which is assigned to the United States Army Infantry School for instructional and problem-support purposes, is the only one now in active service, but additional Scout Dog units could be quickly mobilized if the situation demanded. Only 16 weeks are required to mold a "civilian dog" into a Scout Dog. The dog's useful term of service is approximately four years, much shorter than the handler's. Handlers can therefore be kept in reserve and dogs trained as needed.

Scout Dogs are a valuable asset in many combat operations. Every commander or potential commander should have a general knowledge of the way Scout Dogs work and of the tasks they can perform. It is equally essential that the men who work alongside the dogs—patrol leaders and the individual Infantryman—grasp the significance and potentialities of the dog in modern warfare.

Instead of presenting this information in the usual academic manner, we are going to let you get it straight from the dog's mouth. We introduce Bozo and then let him take it from there.

Bozo is a Scout Dog in the 26th Infantry Scout Dog Platoon. A German Shepherd like most Scout Dogs, he has the sleek strength and endurance of his breed. But he also has that military carriage which always characterizes a soldier. He is not deflected by hydrants. He does not trifle with cats that come within sniffing distance. He will not pause

to imagine buried bones. He holds himself erect, and walks as if he knows where he is going.

Bozo has a three-day pass. He is on his way to visit his Granddog, a veteran Scout who is now retired and lives in Dogwood, a small town north of Fort Benning. Needless to say, Dogwood is small enough that it is not likely to be represented on any map.

Probably it is the trees that attract canines to Dogwood. In any case, Bozo is not alone on the road, though he pays little attention to the other travelers. However, he is not able to ignore for long one small individual who moves with swaying flanks, an erratic gait and an entire willingness to be delayed by an inconsequential scent the breeze happens to hold.

Bozo tries valiantly to contain himself but he finally weakens. "Straighten that back, Mutt," he barks. "Get that shimmy out of your hips. Where's your pride, where's your confidence?"

"Who do you think you are," Mutt barks back, "a police dog?"

Bozo is not amused. "Haven't you ever heard of Scout Dogs?" he demands. "Don't you know anything about the Infantry's four-footed weapon?"

"You're not . . ." Mutt begins.

". . . I am," Bozo finishes.

"What an honor! What a sheer privilege!" Mutt exclaims, falling in beside the Scout Dog. His head is thrown back. He moves with con-

viction. He matches his large friend stride for stride. "Tell me all about it," he urges. "Give me the word."

"Well, it was in the dark days of '42 that the War Dog was born," Bozo says, his bark lowered in reverence. "The nation was besieged by a legion of enemies. It needed a champion, a deliverer. Of course it turned to the dog, and he was ready. He had his four feet planted squarely on the ground. And, if I may say so, he served gloriously."

"But what's the difference between Scout Dogs and other military dogs?" Mutt inquires with tail-wagging interest.

"I'll give it to you right from the records—I've memorized it, word-for-word," Bozo replies. He growls once or twice by way of clearing his throat. "*On 26 September 1944 the Department of the Army authorized the activation of the Infantry Scout Dog Platoon, separating the Scout Dog from the Messenger and Sentry Dogs. The Messenger Dog is no longer employed but the Sentry Dog is still used to guard strategic installations. He is considered a non-combatant. The Scout Dog, however, is a combatant, at least in a manner of speaking, because he's right up front.*

"Briefly, the Sentry Dog is encouraged to attack strange individuals and to raise a commotion. The Scout Dog, on the other hand, is trained to give silent warning of any strange individual or group but not to attack."

"Ah," Mutt says appreciatively, "that clears it all up. I gather that since there are Scout Dog Platoons there must also be Sentry Dog Platoons. R-r-right?"

"Wrong. Sentry Dogs are assigned individually and are normally gathered together in detachments. Most of the Ammunition Supply Points in Korea were guarded by Sentry Dog Detachments."

"And is Korea the only place Sentry Dogs were used?"

"Patience, patience, my friend," Bozo admonishes. "A rolling bone

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The six-man Scout Dog Squad.

gathers no moss. A nip in time saves nine. A bird in the paw is worth several in a tree."

"You mean you were going to get to that. R-r-right?"

"I was indeed. Sentry Dogs are still used in Korea, in Germany and in Okinawa, too. The Air Force employs the majority of them, though."

"Look," Mutt interrupts, gesturing with one paw. "There's Dogwood."

Bozo quickens his pace. "And there's old Granddog, ancient hero that he is, waiting for us. Hello Granddog! How are you? It warms my shaggy heart to see you again."

"Fine, you young whippersnapper," says the old warrior. His whiskers are white and he has perhaps lost a bit of his youthful vigor. But he is still a proud figure. "Come on up to the kennel, and let's chew the bone a while. We have a lot to bark over. Bring your friend along."

"How kind of you to let me come, sir," Mutt acknowledges with perfect politeness.

"You're right," Bozo says, "when you remark that we have much to discuss. Have you heard about

the pentomic reorganization, for instance?"

"Yep! Been reading about it. Are you affected?" Granddog asks.

"Not in the least," Bozo responds. "As a matter of fact, we're the only unit *not* affected. We still have one officer, 20 enlisted men and 27 Scout Dogs."

"Guess that makes your platoon leader one of a kind."

"I hate to correct you, Granddog, but you obviously mean platoon *commander*. Frankly, an old dog like you ought to know we're not a sub-unit."

Granddog's tail drops. "I beg your collective pardons. But tell me, is your platoon sergeant a good one?"

"The best. He still doubles as the platoon supply specialist, and does a fine job at that, too. He got me this nifty collar."

Mutt, who had resolved to lie quietly in the corner and learn what he should learn, cannot keep from breaking in. "Fringe benefit. R-r-right?" he exclaims.

"You might say that," Bozo replies. "And we have medical bene-

fits, too—there's a veterinary specialist in the platoon. 'Doc,' as we call him, does an excellent job on first aid, prepares our clinical histories, ensures that our quarters are kept clean and sanitary, and regulates and prepares our diets."

Granddog objects to convenience on principle. "Not much to regulate," he snorts. "One and one-half scale marks of horsemeat and the same amount of commercial dog food per day."

"Scale marks?" Mutt inquires.

"'Pound' is a bit foreboding don't you think?" Granddog snaps.

"R-r-right. Let me be the first to change the subject," Mutt offers.

"Please do," Granddog urges.

"Well, then, I'd like to hear about squads and such."

"Let me quote again," Bozo says. "*In the Scout Dog Platoon there are three identical squads of six men and nine dogs each. The squad leader is a sergeant first class and his assistant is a sergeant. Both are dog handlers. The rest of the squad is made up of four scout observers who are also dog handlers. Their rank*

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finds a speaker who has something to say and who can stand up on his hind legs and really put over his ideas and thoughts, even the most advanced student becomes enthusiastic in his appreciation. Observation of all types of audiences from the lowest to the highest level gives convincing evidence that any audience listens to the man who stands in the middle of the platform and speaks frankly and convincingly. On the other hand, turn out the lights in the classroom or the auditorium, switch on the slide projector, start reading your nice, clean manuscript, and I'll give you ten to one that within 15 minutes a quarter of the class will be asleep. Make the hour 1315, and I'll gamble on half the class.

was said. But you still don't have to read the whole speech. Audiences appreciate the man who is careful enough to read important facts, direct quotes and figures to be sure that they are right. You can do this obviously, carefully and precisely, even calling attention to the fact that you are reading them. If you come to a particularly sensitive political statement on which you do not want to be misquoted, you are perfectly justified in saying, "So there will be no doubt or misunderstanding of my next statement, I will read it to you." Far from detracting from a well-delivered speech, these reading techniques tend to highlight the parts that are read. However, if you read the whole speech, you miss these highlights, and they become buried in your more or less uninspired delivery, depending on how well you read and how many times you read over your speech before you give it.

How about the rest of this critically important speech, the part that doesn't consist of facts, figures or acutely sensitive statements? Isn't it important, too, and isn't there a chance of slipping? The answer here is that anyone important enough to give such a speech owes his country the effort to learn how to give it without slipping too many times. The audience, even though it may be an entire nation glued to its television screens, will forgive a few slips from a speaker

who looks the viewers in the eye and talks to them rather than to a piece of paper. A live audience sitting in an auditorium or on a hillside is even more appreciative of the leader who can stand up and talk. Most of us can remember one or two speeches by important leaders who knew how to talk—speeches that carried impact and inspiration not so much because of what was said but because of the way it was said. Such speeches were no doubt the product of well-prepared manuscripts, but the audience was made to forget the manuscript and remember the man who spoke the words.

Next, let's examine the reasoning that whether you should read your speech or not depends on the audience. Supposedly the senior audiences found in the highest service schools and the learned audiences found in civilian graduate schools are interested in the substance of the lecture rather than in its form. To a degree this is true, but only to this degree: the more advanced student who is highly motivated is accustomed to rooting through much dull, poorly presented and unrelated information to gain knowledge. He has developed enough determination to sit through an excruciatingly bad lecture if the lecturer has something to say. The best public speaker with nothing to say leaves the advanced student cold. But when the student

Finally, we can group the manuscript slaves who distrust the smooth talkers with those who are afraid to talk without a manuscript. This is probably beneficial because it lets us help both groups by pointing out that a good speaker is not necessarily a smooth talker. This fact makes the road to good public speaking a lot easier. The man who wouldn't be caught dead trying to soft-soap his audience can relax and be his own honest, frank, one-hundred-percent manly, red-blooded American self. At the same time the man who is afraid he'll forget a well-turned phrase if he steps out from behind the podium can console himself with the relieving thought that the phrase doesn't necessarily have to be well-turned. This is the speaker's chance to be himself, and the more he is himself the more his audience will appreciate him.

Having thrown these few random shots at the reasons for not tossing away the manuscript, let's abandon our water wings and get on with the swimming lesson. Learning to talk without notes really is a lot like learning to swim. The thing that it requires most of all is confidence. At first you may flounder and get water up your nose—but hardly anyone ever drowns. And after you've

learned the basic strokes you'll find that you can move faster and with much more style than you could with water wings.

First of all, speaking without a manuscript doesn't mean that you have to memorize the manuscript. What you should do is read it two or three times for substance, concentrating on the thoughts rather than the words. As you read, visualize how the manuscript is organized, and after you've finished your reading make an outline. If you are fortunate enough to have a speech writer, ask for an outline to go along with the manuscript. The outline should be limited to about five main headings. You can't expect your audience to remember any more than this during an hour, and you should avoid talking more than an hour unless you're an exceptionally gifted speaker.

While you're reading the manuscript, it will be obvious that some points will be hard for you to remember while others can best be presented on a training aid. Generally these points will coincide, for what is hard for you to remember will also be hard for the class. It will therefore be just the sort of point that lends itself to a training aid. This is one place where you are ahead of the game if you use discretion. Most military installations have experts who can make training aids that compare with the best in the world. However, it's up to you to

avoid using too many and to encourage the training aids people to use their imagination. At the start you'll tend to use too many training aids, literally reducing your whole talk to chart form. The trouble with this approach is that the constantly changing charts will distract your audience's attention from you and your lecture. This trouble is heightened if your charts are on slides that must be projected in a darkened room.

If you are satisfied that your training aids serve the purpose, have them made up, and you're ready to rehearse. Try your first rehearsal by yourself in a room where you can use your training aids and talk in a normal voice. This is better than trying to rehearse mentally without talking. Mental rehearsals tend to wander and waste your time, so stand up, push aside the lectern and talk. Set a time limit against which to push yourself. Use your outline the first time. If you intend to use a chart changer later on, but don't want him in the room during your initial rehearsal, line up your charts around the room. If you are going to use a slide projector or view-graph, hold the transparencies in your hand and read them.

Don't worry if the exact phrase or wording doesn't come out the first few times. Don't worry if you forget part of your talk; go on to the next point. Many talks would be better if the speaker left out a num-

ber of sentences or paragraphs.

After a couple of rehearsals by yourself, get in any assistants (chart changers, slide operators, pointers, demonstrators) you may need, and run through a rehearsal to coordinate their actions with your talk.

One final rehearsal with an audience should finish up your preparation. At this run-through you should have your talk well enough in mind to let you concentrate on your audience and use a little showmanship. Look around the room, move naturally (not too much) on the platform and try to relax.

You will find it helpful to think about your talk for about an hour sometime within the eight hours before you give it. This is where a mental rehearsal will be of value. Here you can polish up your introduction and any key points that you want to make. Also, many people find that as the time to talk approaches, their adrenalin starts to build up, and some new and worthwhile ideas spring to mind.

When you give your talk, step to the middle of the platform, stay away from the lectern and keep the opening pleasantries to a minimum. As you talk, look at your audience and concentrate on keeping it interested. You'll find that the words will roll out in their proper order, and you'll never want to read a speech again.

The gift of good speaking isn't a gift at all. It's a reward that almost anyone can win with a little honest work.

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 seize 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 capability of the ground soldier. Man himself is the only "ultimate weapon."

SECRETARY OF THE ARMY WILBER M. BRUCKER

THE Infantry will continue to progress and to overcome obstacles only so long as it develops new ideas. Many Infantrymen have thoughts or suggestions which they feel will help the Infantry and the Army, but which never get into print. We wish to provide an outlet for such expression. Beginning with this issue, Infantry will publish selected suggestions received from its readers. We will publish as many as the volume received and the space available permit. Counter-ideas or extensions of ideas also will be published.

Please state your ideas as clearly and as briefly as possible—try to keep them under 200 words. The authors of all published items will receive a year's free subscription to Infantry. Mail your ideas to: Infantry Magazine, Editorial & Pictorial Office, U.S. Army Infantry School, Fort Benning, Georgia.

WHY DON'T WE . . .

Develop a Magnetic Direction-Finding Device

By Lt Paul B. Malone III



One limitation of the present lensatic compass is the fact that it is difficult to work with at night. The Infantryman using a compass is required to make frequent references to the small instrument, sometimes under adverse conditions. This poses problems, particularly when speed of movement is important.

A magnetic direction-finding device

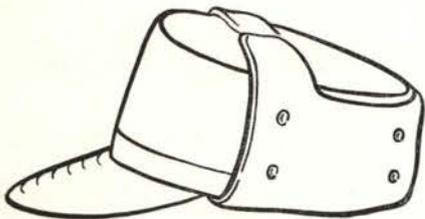
based on a principle similar to the airplane beacon may offer a faster method of directional guidance. This device could consist of a magnetic compass, a small battery power source, a signal assembly and connecting earphones. It could be mounted in a vehicle or suspended by a strap around the wearer's neck. To use the device, the operator would dial a predetermined azimuth on the compass and then turn on the power. The apparatus would then transmit signals through the earphones, indicating whether the operator is traveling in the desired direction or moving to the right or left of the selected azimuth.

Using this simple and light device, foot and motorized elements moving cross-country at night could increase their rate of movement considerably.

Infantry magazine will make no attempt to evaluate the items received. We will clearly state that the ideas are those of the individual authors and do not necessarily reflect official thinking of the U.S. Army Infantry School.

The initial items which appear in this issue were generated by Lt Paul B. Malone III and several of his classmates from a recent Infantry Officers Advanced Course. Viewing the academic atmosphere of the Infantry School as an ideal opportunity for reflection and creative thinking, Lieutenant Malone made several suggestions for improvement of combat equipment while attending the course. Feeling that some of his classmates might also have suggestions to solve problems, he solicited their ideas and forwarded them to Infantry. Their suggestions, along with Lieutenant Malone's, are printed here.—Editor.

Here is a new feature that provides an outlet for ideas which can be developed to help the Infantry.



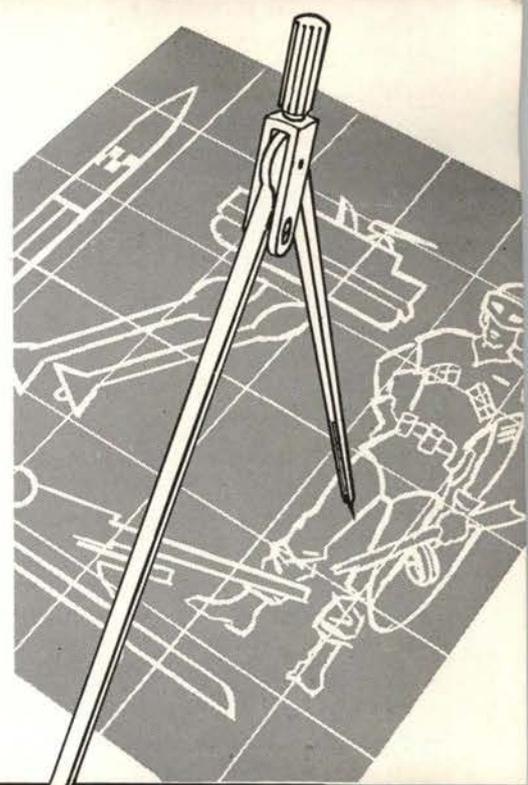
... A Smart Looking All-Purpose Cap

By Capt Richard S. Krafski

One noteworthy deficiency in our attempts to design clothing suitable for wear under all weather conditions in both garrison and the field is the present issue-type field cap. Because of its unmilitary appearance, this type of headgear is shunned by most line units, and the only cap acceptable to the commander is the one sold in the

local PX. Even the PX variety falls short of the ideal cap, since it offers no neck protection from the summer sun and no warmth in the winter. With its plastic stiffener, the cap becomes a major packing problem; without the stiffener it looks just as unmilitary as the official version.

An ideal cap could be modeled after some of the present European military headgear. It should be made of material with sufficient body to present a military appearance and yet be collapsible for packing. In addition to a visor, the cap should have a flap to protect the neck from the sun. With the addition of a wool or fur insert, this cap would provide excellent warmth and protection during cold weather. If possible, the cap should be designed to fit under the linerless helmet now being planned. Such a cap could replace both the field cap and the overseas cap, providing standardization for all except full-dress occasions.



... Self-Sealing Floats for Tactical Vehicles

By Capt Rufus C. Lazzell

The introduction of special fording equipment and waterproof electrical systems has made possible a fording capability for most of our tactical vehicles. Without major modifications, it appears likely that these vehicles also could be given a floating capability.

The addition of inflatable, self-sealing rubberized floats to the equipment of tactical vehicles would give them the capability of "swimming" small bodies of water. The floats could be inflated by carbon dioxide bottles, by vehicle exhaust, or even by lung power, and they could either be stored on the vehicle or brought forward for

use when needed. Propulsion of the vehicle in the water could be achieved either by paddling or by some expedient device such as a towing cable. The adoption of this simple suggestion would avoid reliance on bridges or barges during water-crossing operations and would provide greater mobility for units operating without engineer support.



... A Folding Foxhole Cover

By Lt Arthur J. Leary, Jr.

The threat of tactical atomic weapons and resulting requirements for a highly mobile defense tend to increase both the importance and the difficulties of providing protection for the individual on the battlefield. The need for concealment and deception, the scarcity of construction material and the restrictions on individual movement contribute to the problem. This is especially true of the construction of a cover for the foxhole.

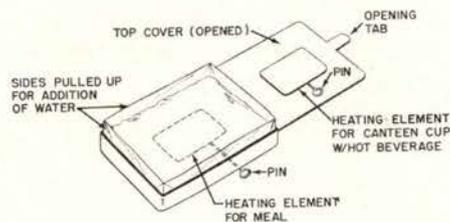
One possible solution to the problem would be the production of a ready-made cover which would provide overhead protection for the various types of field fortifications. The cover could be of a low, dome-shaped design and made of a strong, lightweight plastic capable of supporting 18 inches of earth. It should be made in sections so that it could be folded easily for transportation and storage. Such a device could be issued as a Class IV supply item to frontline units when defensive operations are planned, and recovered after the operation, if feasible. The necessity for troop survival, particularly in open areas which lack natural cover or concealment, should overcome any objections to the added burden such a device might place on logistical facilities.

... An Individual Pre-cooked Meal

By Lt Paul B. Malone III

The present system of serving kitchen-cooked meals to combat units on the battlefield is unsatisfactory in several respects. In addition to causing the troops to move from their positions to a messing area, this system unnecessarily exposes our troops to mass-destruction weapons and leaves them open to detection by improved surveillance equipment.

A solution to this problem would be the development of an individual hot field ration. Essentially, this ration would consist of a pre-cooked meal packed in a durable container with a built-in heating element. Ideally, the ration should be edible with or without the addition of water. The simple pulling of a pin would initiate the action of a heating element, quickly producing a hot meal and beverage without telltale smoke or flame. Using such a ration, the Infantry soldier would receive both the nutrition and the morale benefit of a hot meal, without being exposed to the dangers of mass feeding.



... An Anti-helicopter Mine

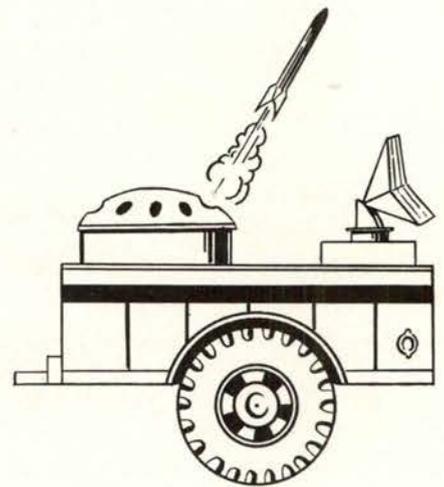
By Capt Ralph W. Girdner

The development of a suitable anti-helicopter mine appears to be both necessary and feasible. The mine should operate on a disturbance principle, being activated by the strong air turbulence caused by helicopters de-

scending to within 50 feet of the mine. Its explosion should produce a vertical danger zone effective against thin-skinned helicopters at altitudes up to 100 feet. Minefields of this type would have to be marked, but little effort would be required to install and protect them.

... An Anti-helicopter Missile Launcher

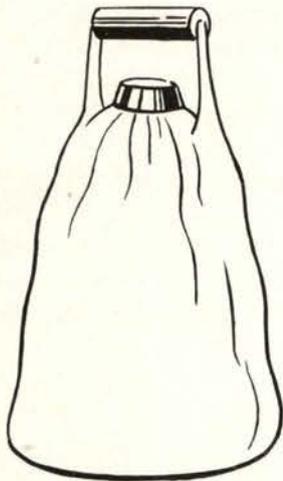
By Lt Henry G. Moseley



To insure that enemy helicopter-borne movement into friendly areas would be extremely costly, an automatic device capable of destroying hostile aircraft should be located along probable avenues of enemy approach. Basically this device would consist of a radar scanner and an automatic missile launcher mounted on a $\frac{3}{4}$ -ton trailer. The radar scanner would detect the presence of any aircraft in the area and transmit to the aircraft an IFF (Identification Friend or Foe) signal. Any aircraft failing to return the signal would be considered hostile. Upon detection of an enemy target, the radar would signal the missile launcher, initiating one of a series of missiles pointing in the general direction of the aircraft. When the missile is airborne, a homing device in its nose would guide it to a hit.

... A Plastic Five-Gallon Container

By Lt Donald F. Hanson



Great progress has been made in the field of plastics during recent years. Strong, durable, lightweight and inexpensive plastic fabrics have been used as substitutes for steel, paper, tin, rubber, cloth and other materials. Of particular value to the military are the greater durability, the resistance to wear and the appreciable saving in weight achieved by the new plastics.

One of the many uses to which plastics could be put in the Army would be as a substitute container for the five-gallon can. An inexpensive plastic bag would reduce the weight to be carried, require negligible storage space and eliminate the system of can-for-can exchange. Empty, it would take up very little space, and when filled it would be quieter and less difficult to handle—particularly when manhandled by personnel. Stuffed into the combat pack, it would be far easier to carry than the metal five-gallon can.

This very minor item could well provide a significant contribution to the Army's present trend toward flexibility and reduction in weight of equipment.

The ideas expressed in these items are those of the authors and do not necessarily reflect thinking of the Department of Defense or the U. S. Army Infantry School.



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. Which of the following statements pertaining to zones of action are correct?
 - a. The use of zones of action allows companies little flexibility of movement.
 - b. A zone of action need not be cleared of enemy unless the commander of the next higher unit so directs.
 - c. An axis of advance is not used within a zone of action.
 - d. Zones of action may be used as tactical control measures.
2. The precedence of a written tactical message is determined by the
 - a. sergeant major.
 - b. originator.
 - c. commanding officer.
 - d. chief message clerk.
3. Which of the following combinations contains the four principles of night vision?
 - a. dark adaptation, off-center vision, keep the head high, confidence.
 - b. dark adaptation, keep both eyes open, off-center vision, confidence.
 - c. off-center vision, scanning, pointing technique, confidence.
 - d. dark adaptation, off-center vision, scanning, confidence.
4. "Moderate damage," as used in atomic damage template analysis, is best described as
 - a. damage which is sufficient to preclude economical repair.
 - b. complete destruction of the material.
 - c. damage which requires some repairs but does not preclude use of the material.
 - d. damage which precludes use until extensive repairs are effected.
5. The type of motor march which offers the greatest passive protection against hostile aircraft is
 - a. close column.
 - b. double staggered column.
 - c. open column.
 - d. infiltration.
6. Field maintenance for elements of the battle group is performed by
 - a. roving teams of 2d echelon mechanics.
 - b. Infantry units in a battle group supply and service area.
 - c. designated maintenance units in direct support of using units.
 - d. battle group mechanics.
7. Which is the most important element of a sight picture—sight alignment or positioning of the bull's-eye? Why?
8. What is the difference between civil affairs and military government?
9. What method normally is employed in the distribution of the five classes of supply from division to the battle group?
10. The fire direction net of the rifle company consists of
 - a. rifle platoons and the weapons platoon.
 - b. forward observers of the weapons platoon headquarters and the fire direction center of the 81mm mortars.
 - c. artillery forward observer, 81mm mortar forward observer and the 81mm mortar fire direction center.
 - d. rifle platoons, weapons platoon and the 81mm mortar fire direction center.

For answers turn to page 70



ANSWERS TO QUARTERLY QUIZ *(See page 69)*

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. **b & d.** A zone of action is an area bounded by the line of departure, the final objective and the boundaries on one or both flanks. The use of zones of action without additional control measures within the zone allows companies maximum flexibility. Each company has complete freedom of maneuver and fire within its assigned zone. When a unit desires to enter an adjacent zone, its commander must coordinate with the adjacent unit commander and the next higher commander must be notified. This measure is used principally to control the fires or maneuver of adjacent attacking companies, or to denote responsibility when an area is to be cleared of enemy forces. If a zone must be cleared, the commander who assigns it must so state. If clearance of the zone is not required, bypassed resistance must be reported to the next higher commander. (Chap 1, Sec I, par 6b(1) and (2), Advanced Sheet, Infantry Division Battle Group, USAIS, October 1957.)

2. **b.** The assignment of precedence to a message is the responsibility of the originator and is determined by the subject matter and the time factor involved. (Chap 3, Sec IV, par 362a, Communication Instruction General, ACP #121(C), Department of the Army, July 1956.)

3. **d.** Tests have proved that the ability to see at night can be increased by applying the four principles of

night vision. They are (1) dark adaptation, (2) off-center vision, (3) scanning, and (4) confidence. (Chap 2, Sec III, par 26c, FM 21-75, June 1957; and Chap. 2, ST 23-5-2, USAIS, July 1956.)

4. **d.** Damage levels are described as light, moderate and severe. Moderate damage is that which precludes use of the equipment until extensive repairs are effected. In the atomic attack of tactical targets, only moderate and severe damage are of military significance. (Par 20, DA Pamphlet 39-1, June 1956; and Chap 5, par 2b, Atomic Information Handbook, USAIS, 1956.)

5. **d.** When sufficient time and road space are available, movement by infiltration is used to provide the maximum of secrecy, deception and dispersion as a means of passive protection against enemy observation and attack. (Chap 5, Sec I, par 76a, FM 25-10, February 1953.)

6. **c.** Field maintenance is that maintenance authorized for and performed by designated maintenance activities in direct support of using organizations. This category normally will be limited to repair and/or replacement of unserviceable parts, assemblies or components. Field maintenance usually incorporates the 3d and 4th echelons of maintenance. (Par 5, AR 750-5, October 1957.)

7. Sight alignment. An error in sight alignment will increase with the

range to the target, whereas an error in positioning of the bull's-eye will remain constant with an increase in range. (Chap 3, Sec II, par 77d(5), FM 23-5, October 1951; and Chap 5, fig 20, FM 23-71, September 1957.)

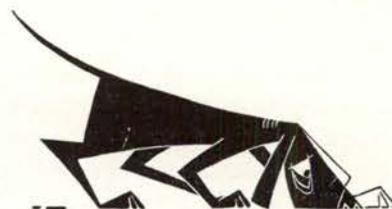
8. **Military government** is the supreme authority exercised by an occupying armed force over the lands, properties and inhabitants of an enemy, allied or domestic territory. Military government is exercised when an armed force has occupied such territory, whether by force or agreement, and has substituted its authority for that of the sovereign or previous government. The right of control passes to the occupying force, limited only by the rules of international law and established customs of war. *Civil affairs* is the assumption, by the responsible commander of an armed occupying force, of a degree of authority less than the supreme authority assumed under military government, over enemy, allied or domestic territory. The indigenous governments would be recognized by treaty, agreement or otherwise as having certain authority independent of the military commander. (Chap 1, par 6a & b, FM 41-10, May 1957.)

9. In normal situations, the division transportation battalion will deliver all class I, II, III and IV supplies by unit distribution. Class V (ammunition) resupply is obtained from Army ammunition supply points, utilizing the transportation organic to the battle group. (Part 2, Chap 1, Sec II, par 162c, FM 7-21, August 1957; and "Logistical Support—Pentomic Infantry Division," *Infantry* magazine, January 1958.)

10. **b.** (Sec X, Fig 94, Communication Data, Infantry and Airborne Battle Groups, USAIS, July 1958.)

ON YOUR TRAIL . . .

We'll try to track you down anywhere in the world . . . but our supply of bloodhounds is limited. Next time you take off be sure to send us your new address so your *Infantry* magazine can follow you. Write Circulation Section, The Book Department, USAIS, Ft. Benning, Ga.



YES SIR!

The successful commander creates, by word and action, an atmosphere in which his desires and orders are clearly understood by his subordinates. He avoids the automatic "Yes Sir!" which can lead to frustration, friction and inefficiency.

WHAT does the response, "Yes sir," mean to you after you have issued an order? There is probably little doubt in your mind that the order, as the recipient understands it, will be carried out. But how well? With what enthusiasm? With what degree of actual feeling that "this is really needed, and this is the best way to do it"?

Just as industry is beginning to realize that profit is not the be-all and end-all of business, the Army, in its tactical as well as its non-tactical activities, is acquiring the philosophy that the autocratic issuance of an order plus the time honored follow-up, does not produce the most efficient utilization of personnel; nor in fact does it make for the most effective accomplishment of the mission.

We may say this is nothing new, that the Army has always known and understood this. Yet the standard characterization of a successful Army officer as a square-jawed, hard-faced individual of autocratic appearance who is often "chewing someone out" for a minor infraction, makes it reasonable to assume that this widespread mental picture is

founded on a certain amount of fact.

Of course, as an Army officer, you say to yourself, "I am not that kind of an officer," and yet, being intellectually honest with yourself, are you sure you are not? Any individual in a high position, whether in political life, industry or the military, inevitably becomes isolated from many of the happenings around him. As an illustration, it is reported that during World War II a ranking officer in the Pacific casually asked where he could get a refrigerator for his island hutment. This was not a demand or an order, but it caused a four-engine bomber to be flown 3000 miles across the Pacific and back with an item of priority cargo—a refrigerator. Normally, I suppose the officer would never have heard of this. Through some freak of circumstances, however, he did in this particular case and he was appalled. He preferred charges against the junior officer responsible. The senior officer knew that he had never requested to be coddled in that way, and certainly would not have had reacted explosively if he had merely been told no refrigerators were available on the island. And yet how often are

things done for and around us, the results of which we see, but the ramifications of which remain completely unknown to us? If the atmosphere of your organization is such that your immediate subordinates do not feel free to talk over problems with you, a "refrigerator incident" may well result without your knowledge. In fact, there may be one, or more, in progress right now.

A part of the shift of emphasis in the Army is probably due not only to the changing times in which we are living and the fact that we no longer have a volunteer Army, but also to the sheer complexity and size of the Army itself. There appears to be less emphasis in higher level positions on "How much does he know from a technical viewpoint?" and more emphasis on "How does he get along with people, how competent he is in forming a team, an organization that will pull together toward common objectives?" In normal circumstances, this latter goal cannot be accomplished through the motivation of fear or statutory authority.

When the going gets tough, there is a very natural tendency for the top command to get jumpy and jittery. This often manifests itself in outbursts such as, "Can't anybody around here do anything right except me?" "Do I have to do everything myself?" "Why is it that nothing gets done on time?" This is a very human reaction when the pressure is on. And yet, what does it accomplish? Does it aid teamwork? Does it speed up getting the job done? Does it relax the pressure and the tension? I doubt it seriously.

Certainly it is part of the commander's job to conduct himself in such a manner that his actions, as well as his comments, communicate to his associates and subordinates a proper appraisal of the urgency of the situation, and reflect faith in their ability to do their part of the job. If they cannot live up to this faith, they must be trained or relieved. There is no justification for

LT COL LELAND S. DEVORE, JR., is a 1935 ROTC graduate of West Virginia University. In 1941 he was assigned to the staff and faculty at The Infantry School and two years later joined the ordnance section, Second Army Headquarters at Memphis, Tenn. He then went to the Pacific, where he served with the ordnance section of Headquarters, IX Corps. Colonel Devore was graduated from the Command and General Staff College in 1946, following which he was on duty in the Office of the Chief of Ordnance. He then attended the British Staff College at Chamberley, England, after which he became ordnance officer for the 1st Infantry Division in Germany. Upon returning to the United States, he served two years as executive officer of Erie Ordnance Depot, Lacarne, Ohio, and two years later returned to the Office of the Chief of Ordnance. In 1955 he became a member of the faculty at the Command Management School, Fort Belvoir, and in August of this year he received orders to join the Military Assistance and Advisory Group in Turkey.

capable, competent, well-trained people to "burn out" on the job. It is no service to the nation to become incapacitated by ulcers, a nervous breakdown or a physical breakdown at the age of 50 or 55 when years of training and experience should be paying off at the highest levels.

There is perhaps somewhat of a paradox in this discussion. The present-day trend toward a consultative approach, delegation, giving responsibility with authority and so forth, does not and cannot mean an abdication of command. A commander still is, and I trust always will be, responsible for everything his unit does or fails to do. His is the final decision. He can rely on group advice, staff studies and opinions of experts, but on him and him alone rests the responsibility for the final decision. We often hear individuals complaining that they do not have sufficient authority. It is my opinion that, from a practical viewpoint, authority never equals responsibility. Certainly, no one has complete authority for his action. No one is an absolute monarch, and yet he may have complete responsibility for accomplishing a mission. There are always outside forces working — higher headquarters, laws, governmental responsibilities, moral responsibilities, economic responsibilities, etc. Many of these

tend to hem in the higher commander and detract from his authority. But this curb on authority may in no way detract from his responsibility. Equality of authority and responsibilities is certainly a desirable target, but it probably never is achieved in real life. There is growing up too much of the feeling that "I can't do it, because it doesn't say so in regulations." I submit that the opposite approach is the one that should be taken. "I can do it unless it is specifically forbidden in regulations." This philosophy alone permits any individual in the service to assume a considerably greater degree of authority.

It is possible many individuals feel that asking advice and consulting on problems prior to making a decision is to some degree a sign of weakness. I believe nothing is farther from the truth. Not only will consultation increase the chance for a correct decision, but it will go much farther. It will tend to create the atmosphere that there is a team at work, not a martinet; that the opinions of individuals are desired and valued; and that there is logic and necessity behind the directed action — not just a personal whim.

Another factor which will go far toward getting the most out of your subordinates, without the motivation

of fear, is to let them know what is expected of them. From time to time tell them how they are doing in their attainment of these standards from your point of view. This may seem to some a rather difficult task, or one on which it is hard to get started. Others may claim this is no problem—that they do it constantly. In general, I doubt the validity of this latter claim. One mechanical approach, which has shown good results, is to have each subordinate write a paper once or twice a year stating what he believes to be the responsibilities and standards of the superior's job, as well as the responsibilities and standards of his own job. A frank discussion of this paper between the subordinate and the superior will often bring out surprising oversights, overlaps and just plain misunderstandings which have existed. Furthermore, this discussion gives the superior an excellent opportunity for pointing out the weaknesses and strength of the subordinate over a period of the past several months or year.

Delegation and decision-making were mentioned previously. It was emphasized that delegation must carry with it a faith in the subordinate's ability to do the job. When you delegate, you must have the willpower to accept the risk that the individual to whom you delegated a task may make a mistake. You cannot delegate and still hold the reins yourself. The mere thought that a mistake is being made deserves some soul-searching in itself. How do you know a mistake is being made? Perhaps the task is not being accomplished the way *you* would do it, but isn't there the possibility that the method suggested or being undertaken is just as good—or even better? If you have delegated, this does not mean you lose control. You must require progress reports or some similar means of determining whether or not the activity is going according to schedule. But you have given up the right to exercise the very human desire to "keep your fingers in the

pie." You cannot pull the string on the puppet if you delegate. The chance that an error is being made is a part of the price you pay for the creation of responsibility in others. It is a form of risk-taking, and is part and parcel of the activity of command management.

If there is one basic ingredient to this entire area, it probably is the possession of a mind which is trained and alert to inquire into why people are reacting as they are. This is a cliché of sorts, and yet, probably one of the greatest improvements that could be made in the field of getting results through people would be for persons in positions of responsibility to analyze the probable reaction of others to the course they are considering or the policy they are promulgating before it is implemented. They should try to determine why people are reacting as they are when something goes amiss. I believe it is fair to say that most of the difficulties which we encounter every day are due, not to a failure of a system or the failure of some material piece of equipment, but rather to the failure of some individual or some group to have the desire to do a good job and a proper job. It is probable that motivation is nothing less than instilling in an individual (or a group) the idea that doing

what he desires is going to fill one or more of his basic needs. There are a number of these, such as physical needs; the need for recognition; the need for belonging; the need for security; and a less known one, the need for new experiences. If you can appeal to any one or more of these, at the same time showing how the job to be done or the proposed change to the job being done will further these needs, you've achieved a basic step in the required motivation. Phrased another way, it probably is insufficient merely to ask for more work or production if that production only increases tensions already present and does not satisfy any other basic need as a counterbalance to the additional effort required.

It is also probable that the pattern of reward which your action sets has a large part in the motivation of those working for you. For example, if your subordinates have reason to believe that they will get a good efficiency report by appearing busy at all times, they will keep up a real flurry of activity. In fact, the emphasis will be on mere activity regardless of its effectiveness. On the other hand, if your action indicates that receiving a good efficiency report is based on the volume of acceptable work produced, even though now

and then an individual is observed leaning back at his desk in a relaxed posture, the majority of discerning people among your subordinates will tend to emulate your approach.

The primary thing, of course, is for you to analyze and be aware of exactly what you consider to be important. And as a corollary, consider whether or not your words and actions communicate to your subordinates the proper degree of importance, or whether some personal idiosyncrasy of the emphasis of some "pet idea" tends to overshadow what you really believe is important. This probably is another way of saying that communication is more than what you say—it's how you say it and how you act. The manner in which you communicate creates a climate or an atmosphere. In the absence of a favorable climate, you may be reasonably sure that misunderstandings will occur frequently, and that frustration, failure, friction and inefficiency will result.

I feel strongly that in the new approach to command management, if we can call it that, there must be something far deeper than lip service or the application of techniques. To quote Thomas Fuller: "He does not believe who does not live according to his belief." This probably is a summary of the new philosophy.

SMALLER RIFLE COMPANY TESTED

A provisional 191-man rifle company has been tested at the United States Army Infantry School.

The test is part of a study being conducted by U.S. Continental Army Command to determine the feasibility of reducing the strength of the current rifle company to make room for an additional company-size unit in the battle group without increasing the total personnel strength.

With a total strength of 243 men, the current rifle company has four rifle platoons. The test unit was reduced to three rifle platoons, a weapons platoon and a company headquarters. Officer strength of the test unit was reduced

from seven to six. There is one less platoon leader.

Personnel eliminated from current-size companies would provide the battle group with a fifth rifle company. This would create a pentagonal structure for the 1427-man battle group.

The test at the Infantry School was conducted in two phases. The first phase tested the defense and surveillance capabilities of the reduced company, with two platoons forward and one in reserve. In the second phase, these capabilities were tested with the company deployed in a strong-point type of defense. In each instance, the company was responsible for a 2400-yard frontage.

Aggressor patrolling activity conducted throughout both phases of the test played a key role in assessing the frontage which the proposed company could adequately defend and protect by surveillance.

Sir:

... I am especially delighted to see the magazine take a new look, not that it was not good before, but so many officers of the military rely so heavily on this publication to keep them posted on current thinking that I feel the additional size is warranted.

ANSEL B. GODFREY
Maj Gen, Infantry
51st Infantry Division

Sir:

The new size of *Infantry* is far superior and more inviting than the old size, but it seems to me that you have gone a bit backward in toning down the layout and artwork. As a former member of *Infantry's* staff I may be a bit prejudiced, but I believe that some of the high class artwork done by the "boys in the back room" did much to add to the class of the magazine. Your current reliance on photographs, to the almost complete exclusion of artwork, reminds me of the copies of the old *Infantry*, circa 1945-1950, which line the shelves of the Infantry School library. Perhaps a happy medium can be found between realistic photos and stylized artwork.

DONALD FEINSTEIN
Bethpage, Long Island, N. Y.

Battle Drill

Sir:

Since my last letter (October 1957 issue of *Infantry*), two further questions have come up concerning battle drill. They both concern *maneuver left* under simulated combat conditions. I would appreciate your opinion on these.

My first question arose when I was observing a fire team which was conducting *maneuver left* from a squad column. The normal positions are, from left to right, numbers 3, 4, 2, 5 and 6. The team leader (a trainee) was moving his men on line so they could support the *maneuver element* which was going around to the left.

He moved Number 6 to the right of Number 5 as "the book" recommends, but this left Number 6 in an exposed position. There was sufficient cover to the left, so I ordered the team leader to find a spot for Number 6 to the left of Number 5. I felt the team leader still had control of his men using this formation and that no harm was done. I told him that in this instance it would have been foolhardy to follow parade-ground positions and lose a man just because the book said it should be done that way. Is it wrong in a situation like this to use a formation that's not found in the field manual?

My second question concerns a situation where the squad moves up to occupy the objective. As soon as its fires are masked, the fire team joins the *maneuver element* to participate in the assault and consolidate on the objective. We teach our trainees that after the *maneuver element* sweeps across the objective from left to right, the fire support team moves up on the left. In other words, the teams criss-cross. While I was teaching the trainees this procedure, one of them pointed out that "that wasn't the way they taught us at Fort So-and-so." He said that the two teams were reversed from the normal *as skirmishers* formation. I pointed out that it would not be feasible for the *maneuver element* to retrace its steps just to be in the proper *as skirmishers* formation, since this would add to the confusion on the objective. I tried to impress upon him the importance of getting on the objective with the least amount of confusion, and then consolidating and getting ready for a counterattack.

I would appreciate your opinions on the above situations. I realize the enemy situation and the terrain affect all situations, but what struck me was the way the trainees insisted on sticking rigidly to the battle drill plays they had learned. Battle drill I agree with wholeheartedly, but I don't think that changing the position of one or two men on the teams will make that

much difference, as long as the team leaders still exercise good control.

ROBERT R. RATOFF, M/Sgt
2d Battle Group, 1st Brigade
Fort Ord, Calif.

Your letter was referred to the Infantry School's Command and Staff Department. Their comments are as follows: With respect to Sergeant Rattoff's first question, the combat formations shown in training literature are appropriate for most combat situations. However, they should not be thought of as the only formations which may be used. Alteration of these formations may be necessary or desirable in certain situations. In combat, formations may be modified so that a few individuals are not habitually in the most exposed positions. Within the fire teams, individual riflemen may be rotated to different positions within the formation.

It must be emphasized that combat formations, to include the positioning of individuals, are not stereotyped. The realities of terrain and situation frequently require deviations from the guidelines of the various formations.

Concerning the second question, the following is quoted from draft FM 7-10, which is expected to be published early next year: "The fire support element assists the *maneuver element* in its advance toward the enemy position. . . . It continues its fire until its fires are masked by the *maneuver element*. . . . When the *maneuver element* masks its fires, the fire support element moves forward immediately to join in the assault or assist in consolidation."

Again, emphasis upon battle drill not being stereotyped is required. It is apparent from the problem outlined in your letter that the fire support element would continue its fires until the *maneuver element* had seized the objective from left to right. The fire support element would then move forward to assist in the consolidation by occupying the left portion of the objective. Also, the "as skirmishers" formation may be either ALFA team left or ALFA team right.—Editor.



WHAT'S NEW FOR INFANTRYMEN

Changes • New Developments • Items of Specific or General Interest to Infantrymen

Portable Radar Sets

A contract for production of "silent sentry" portable radar sets has been awarded by the Army.

The radar sets are designed to provide mobile advance forces with "electronic ears" capable of detecting enemy movements despite smoke, darkness or fog. The sets are characterized by their lightness and ruggedness, and they are highly mobile.

Any enemy movement, whether by vehicle or foot, is picked up by the sets and, as distinctive sounds, is transmitted to the operator.

The set is capable of detecting a single individual walking a half-mile away, and it can reveal the difference between fixed and moving targets at ranges up to three miles. In the hands of a trained operator it can distinguish a vehicle from moving personnel and indicate whether a vehicle is moving on treads or wheels.

First disclosed by the Army in 1956, use of the portable radar sets will greatly reduce the enemy's prospect of maintaining an element of surprise. It is claimed that elevation and range data supplied by the portable sets is accurate within better than 25 yards. They literally provide night-time eyes and ears for the protection of exposed ground troops.

Airlifted Honest John

The practicability of moving an entire Honest John rocket battery by airlift was demonstrated by the Mojave helicopter in a recent experiment at Fort Bliss.

During the experiment, a complete Honest John system and its 11-man firing crew were loaded, transported 10 miles and unloaded in an hour, using one Mojave.

Five trips were required to move the body of the rocket, the warhead, a special launcher, meteorological equipment and a jeep and trailer by the single aircraft. All equipment was sling-carried outside the aircraft.

Using the helicopter eliminates long road marches over hazardous terrain and lends additional mobility to the Honest John.

Night Vision Aid

The development of a new night vision device has been announced by the Department of the Army. Designed to

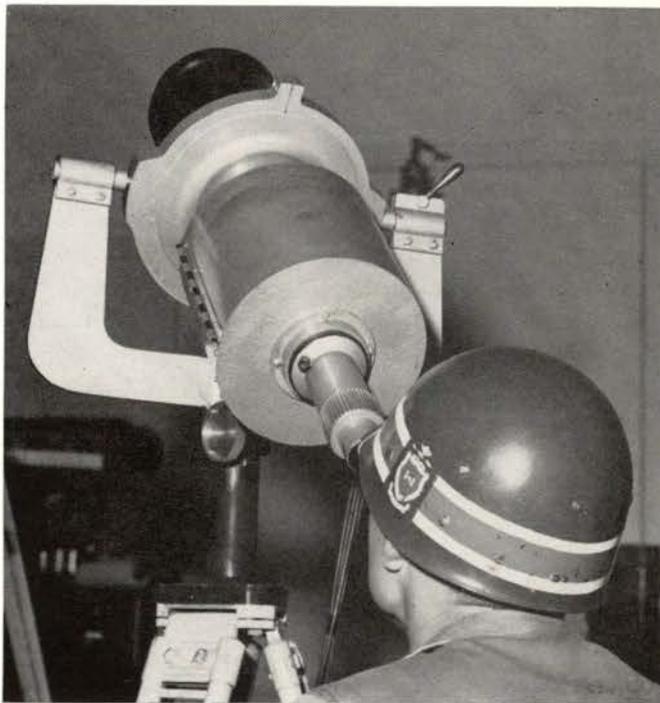
aid troops in the field to see military objectives obscured by darkness, the new development is known as the "cascaded photosensitive intensifier."

The new instrument differs from infrared and radar devices, for it requires no source of artificial light or radiation. The intensifier simply gathers the reflected starlight or diffused light from skyglow falling upon the objective. It then intensifies or amplifies the diffused light sufficiently to present a distinguishable image.

Developed by the Corps of Engineers Research and Development Laboratories and the Radio Corporation of America, the instrument consists of two tubes working in a series and operating through an optical system which focuses reflected light from objects in the field. The first tube acts as a preamplifier for the second, which in turn further amplifies the light and casts the image on the viewing surface.

Ordinarily the intensity of light from the stars is so low that it is of little or no value to the unaided eye. According to the Army, however, with the new night vision device it will be possible to see at greatly increased ranges.

Night Vision Aid





Mohawk YAO-1

New Observation Aircraft

A new higher performance prop-jet observation airplane, the YAO-1 Mohawk, will soon join Army ranks. The Army has been authorized to order 35 of the planes, and prototype models are already in production at the Grumman Aircraft Engineering Corporation.

The Mohawk will be one of the largest fixed-wing airplanes to be used by the Army and it will be the first to utilize prop-jet power. The craft is designed to operate from small unimproved fields and will be used for tactical observation purposes. Its "bug-eye" canopy affords exceptional visibility to its two-man crew.

The plane features a 55-knot stall speed and short take-off and landing capabilities which are relatively the same as the Army's present lightweight single-engine airplanes.

The prop-jet power for the craft will be supplied by two Lycoming T-53L3 engines mounted in above-the-wing nacelles. Originally fitted with a single vertical stabilizer, the Mohawk has been redesigned as a triple-tail airplane in an effort to further simplify its operation.

Weighing 7700 pounds and equipped with tricycle landing gear, the airplane has a wing span of 42 feet and an over-all length of 42 feet, 9½ inches.

Paper Uniforms

Fatigue-type uniforms made of paper have been tested by soldiers at Fort Devens.

Made of strong, soft-textured light green corrugated paper, the garments consist of a coat, stitched with buttons and buttonholes, and pajama-type trousers with draw-string waist.

The paper garments are designed to be worn over other clothing to protect it from dirt and wear. The

experimental fatigues are not oil- or waterproof, but they are disposable.

Troops used during the test included mechanics, heavy equipment operators, duty soldiers, cooks, tool-keepers, truck drivers and firemen.

New Assault Weapon

The bazooka of World War II and Korea may be replaced by a new 90mm recoilless rifle as the rifle platoon's assault weapon.

The new rifle is designated a medium assault weapon and is effective at ranges up to 500 yards. The weapon is described as extremely accurate. Ordnance officials say the new recoilless weapon has a high probability of making a direct hit with the first round.

Testing of the weapon was conducted by the U.S. Army Infantry Board at Fort Benning. That the tests were successful is indicated by a recent procurement request for funds to purchase 140,000 rounds of ammunition for the weapon in fiscal year 1959.

Battery-Warming Vest

A vest that captures human body heat to keep dry cell batteries warm and active for radio operators in cold weather has been developed by the U.S. Army Signal Research and Development Laboratory.

The vest-like garment containing the batteries is designed to be worn beneath parkas to capture body heat. A cord running from the vest can be plugged into standard Army radios.

By using the vest, batteries developed for low-temperature operation are expected to stay in service up to 10 times longer than unprotected batteries, even in 40-degree-below-zero weather.

New Radio Fuse

A Fort Monmouth radio instructor has devised a radio fuse which he claims can be used in electronic equipment by all branches of the armed forces.

The fuse, according to its inventor, is similar to regular radio and television fuses, but can be employed with any size or type of fuse holder. Stockpiles of different types of fuses may thereby be eliminated.

New Tank Killer

A new, armor-protected tank killer has been unveiled by the Army.

The new weapon combines the lightweight aluminum T113 personnel carrier and the DART antitank missile. The vehicle weighs less than 10 tons.

A crew of either two or three men may service the new tank destroyer. The gunner may launch the DART and guide it to its target using a periscopic telescopic sight, while fully protected by the carrier's armor plate. One or more loaders assemble the DART body and wing and attach guidance wires to the launcher rack. The driver serves as an additional crew member.

The new fuse is composed of components similar to those used in regular fuses and would be inexpensive to produce.

Instant Bread Mix

Army bakers may soon be able to supply field troops with fresh bread but without the use of conventional heavy mobile bakeries.

A time- and labor-saving mix, developed by the Quartermaster Corps, is expected to revolutionize present methods of supplying bread for combat units.

By substituting chemical shortening and dry flavoring materials for the usual fermenting process in the pre-mix, time required to bake bread will be cut 70 percent.

In field operations, troops are presently supplied with crackers, canned bread or bread baked in a heavy mobile bakery. With the new process, small field bakeries can be designed to accompany highly mobile combat groups of about 2000 men.

New Helicopter Tested

The U.S. Army Aviation Center at Fort Rucker recently conducted operational tests of a new, two-man helicopter. (See "What's New for Infantrymen," *Infantry* magazine, July 1958.)

The new helicopter, Model 269A, was designed for simplicity and economy. It weighs only 890 pounds but can carry a load of 600 pounds.

A four-cylinder engine powers the new aircraft, which has a top speed of 90 mph and a cruising range of 150 miles.

Production of the first five of the new helicopters to be ordered by the Army is under way at Hughes Tool Company Aircraft Division in California.

Lightweight Turbine Engine

A turbine aircraft engine weighing only one-fourth as much as conventional piston engines of like horsepower has been ordered by the Army.

The 250-horsepower engine weighs only 106 pounds and is 39 inches long.

The engine will be used in observation and utility aircraft. It may also serve as a power plant for target and surveillance drones and flying jeeps.

High Speed Message Printer

A message device capable of handling 750 words per minute has been produced by the Army. The device operates 12 times faster than the average typist and five times faster than normal conversation.

The machine prints with a whirling wheel rimmed with letters. While it spins, a tiny hammer presses a tape against the wheel when the correct letter is in position.

Messages are typed out on a 7/8-inch tape. At the same time coded holes are punched out. As a part of a combat

communications center, the machines will be able to rush high-priority messages to widely dispersed command points. The device is not only faster than voice communication, but it gives a permanent printed record of the message.

The printer-puncher may also be used to feed battle information into a new mobile combat computer now under development. This "electronic brain" will be able to evaluate tactical information and determine priority targets faster than any human.

MILITARY READING PROGRAM

A Military Reading Program is being devised by the Department of the Army to encourage its personnel to read current thought-provoking books about military science and related subjects.

Currently, 1000 military science book kits containing 33 titles each are being purchased for Army-wide distribution to Special Services libraries. Called "The Contemporary Military Reading List," these kits are designed to expand, not replace, local procurement of military science library materials. The first list contains the following books:

- THE CENTURY OF TOTAL WAR, by Raymond Aron, 1954.
- MILITARY HERITAGE OF AMERICA, by Cols R. Ernest & T. N. Dupuy, 1956.
- HOW RUSSIA IS RULED, by Merle Fainsod, 1953.
- A HUNDRED YEARS OF WAR, by Capt Cyril Falls, 1953.
- POWER AND POLICY, by Thomas K. Finletter, 1954.
- SOVIET STRATEGY IN THE NUCLEAR AGE, by Raymond L. Garthoff, 1958.
- PANZER LEADER, by Gen Heinz Guderian, 1952.
- COMBAT ACTIONS IN KOREA, by Maj Russell A. Gugeler, 1954.
- INSIDE RUSSIA TODAY, by John Gunther, 1958.
- THE SOLDIER AND THE STATE, by Samuel P. Huntington, 1957.
- MILITARY POLICY AND NATIONAL SECURITY, edited by William W. Kaufman, 1956.
- REALITIES OF AMERICAN FOREIGN POLICY, by George F. Kennan, 1954.
- THE DIRECTION OF WAR, by Air Marshal Edward J. Kingston-McCloughry, 1955.
- FORGING A NEW SWORD, by Col William R. Kintner, Col Joseph I. Coffey, and Raymond J. Albright, 1958.
- NUCLEAR WEAPONS AND FOREIGN POLICY, by Henry A. Kissinger, 1957.
- THE POTENTIAL OF NATIONS, by Klaus E. Knorr, 1956.
- THE MIDDLE EAST IN WORLD AFFAIRS, by George Lenczowski, 1956.
- ROCKETS, MISSILES AND SPACE TRAVEL, by Willy Ley, 1957.
- THE SOVIET ARMY, edited by Capt B. H. Liddell Hart, 1956.
- ECONOMICS OF NATIONAL SECURITY, by Brig Gen George A. Lincoln and Associates, 1954.
- PSYCHOLOGICAL WARFARE, by Lt Col Paul M. A. Linebarger, 1955.
- SOLDIERS AND SCHOLARS, by John W. Masland and Laurence I. Radway, 1957.
- ATOMIC WEAPONS AND ARMIES, by Col Ferdinand O. Miksche, 1955.
- ARMS AND MEN, by Walter Millis, 1956.

LIMITED WAR, by Robert E. Osgood, 1957.
 GUIDED MISSILES IN WAR AND PEACE, by Maj Nels A Parson, Jr., 1956.
 GOVERNMENT AND SCIENCE, by Don K. Price, 1954.
 THE INFLUENCE OF FORCE IN FOREIGN RELATIONS, by Capt (USN) W. D. Puleston, 1951.
 AMERICAN STRATEGY IN THE ATOMIC AGE, by Col George C. Reinhardt, 1955.
 SOLDIER, by Gen Matthew B. Ridgway and Harold H. Martin, 1956.
 STRATEGY FOR THE WEST, by Air Marshal John C. Slessor, 1954.
 AMERICAN DEFENSE AND NATIONAL SECURITY, by Timothy W. Stanley, 1956.
 NEW DEVELOPMENTS IN ARMY WEAPONS, TACTICS, ORGANIZATION AND EQUIPMENT, by Capt Marvin L. Worley, Jr., 1958.

MANUALS

The following manuals and training literature are being written or rewritten. Publication cannot be expected until later this year or during the coming year.

FM 7-21, C1, Headquarters and Headquarters Company, Infantry Division Battle Group (change).

FM 7-24, Communication in Infantry and Airborne Divisions (revision).

FM 21-5, Military Training (revision).

FM 21-75, C1, Combat Training of the Individual Soldier and Patrolling (change).

TC (S) ()-(), The Antitank Guided Missile (SS-10) Platoon (Organization and Operational Concept) (part one) (U) (new).

TM 57-210, Air Movement of Troops and Equipment (revision).

The following manuals have been forwarded to USCONARC for review and approval:

FM 22-100, Military Leadership (new).

ROTCM 145-4-2, The Junior ROTC Manual (revision).

TM 57-220, Technical Training of Parachutists (revision).

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

FM 22-5, Drill and Ceremonies (revision).

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

ROTCM 145-100, Service Orientation (revision).

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

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

FM 22-5A, Drill and Ceremonies (Cadel Drill) (new).

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

FM 23-72, Carbine Marksmanship Courses, Trainfire I (new).

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

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

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

TRAINING FILMS

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

GF 10-35, Cooking Methods and Terms, 28 minutes.

MF 3-8937, Antipersonnel Biological Warfare (U), color, 30 minutes.

R&D No. 5, Army Research and Development Film Report No. 5—Army Research in Greenland (U), color, 22 minutes.

TF 3-1860, Individual and Unit Decontamination of Toxic Chemical Agents, 20 minutes.

TF 3-2593, Nerve Gases—Part I—Field Recognition and Self-Aid Procedures, 27 minutes.

TF 7-2550, Reporting Enemy Information, 23 min.

TF 7-2636, Leadership—Pre-Commissioned Series, Assumption of Command, Problem No. 1, 5½ minutes.

TF 7-2637, Leadership—Pre-Commissioned Series, Assumption of Command, Problem No. 2, 5½ minutes.

TF 7-2638, Leadership—Pre-Commissioned Series, Assumption of Command, Problem No. 3, 5½ minutes.

TF 7-2639, Leadership—Pre-Commissioned Series, Senior Subordinate Relations, Problem No. 1, 4 minutes.

TF 7-2640, Leadership—Pre-Commissioned Series, Senior Subordinate Relations, Problem No. 2, 7½ min.

TF 7-2641, Leadership—Pre-Commissioned Series, Senior Subordinate Relations, Problem No. 3, 5 minutes.

TF 7-2642, Leadership—Pre-Commissioned Series, Physical Leadership, Problem No. 1, 4 minutes.

TF 7-2643, Leadership—Pre-Commissioned Series, Physical Leadership, Problem No. 2, 7½ minutes.

TF 7-2644, Leadership—Pre-Commissioned Series, Physical Leadership, Problem No. 3, 7½ minutes.

TF 7-2645, Leadership—Pre-Commissioned Series, Instructional Techniques for Small-Unit Leaders, Problem No. 1, 5 minutes.

TF 7-2646, Leadership—Pre-Commissioned Series, Instructional Techniques for Small-Unit Leaders, Problem No. 2, 6½ minutes.

TF 7-2647, Leadership—Pre-Commissioned Series, Chain of Command, Problem No. 1, 3½ minutes.

TF 7-2648, Leadership—Pre-Commissioned Series, Chain of Command, Problem No. 2, 5 minutes.

TF 7-2649, Leadership—Pre-Commissioned Series, Chain of Command, Problem No. 3, 5 minutes.

TF 9-2572, Transportation of Ammunition—Part IV—by Aircraft, 16 minutes.

TF 11-2552, Introduction to Automatic Data Processing, 31 minutes.

TF 30-1890, Security—Part I—Guarding Against Espionage in Military Installations, 23 minutes.

TF 55-2557, Automotive Preventive Maintenance, After Operation, 7 minutes.

TF 55-2588, Automotive Preventive Maintenance, Before Operation, 7 minutes.

INSTRUCTIONAL MATERIALS

The following instructional materials are suitable for resident as well as nonresident instruction and may be obtained from the Book Department, U.S. Army Infantry School, Fort Benning, Georgia, at the prices shown:

Mechanical Training and Crew Drill, 81 mm Mortar, 1601-USAR, six hours. Mechanical training for the 81 mm mortar, to include weapon characteristics, organization of the squad, ammunition and fuzes, mounting and dismounting, use of the sight, firing tables and fire commands. Crew drill for the 81mm mortar, to include mounting the mortar parallel; crew positions and duties, safety checks; loading and firing; removal of misfires; referring and realigning; and angles of shift. 15¢.

Introduction to Target-Grid Method of Fire Control with the M10 Plotting Board, 1665-USAR, four hours. Conference covering the target-grid method of fire control with the M10 plotting board, to include organization and operation of the fire direction center and duties of the FDC personnel. Integrated conference and practical exercise covering use of the M10 plotting board for controlling all Infantry mortar fire. 15¢.

Introduction to Forward Observation Procedure, 1666-USAR, four hours. Integrated conference, demonstration and practical exercise covering forward observation procedure for control of mortar fires utilizing the target-grid method of fire control, to include elementary ballistics, mil relation formula, initial fire requests, sensing, corrections and methods of adjustment depicted by Vu-graph. 50¢.

Coordinated Fire and Barrier Planning, 2222-USAR, four hours. Conference covering coordinated fire and barrier planning to include the four phases of defensive

fires; the employment of the fires of weapons that are organic to or in support of the rifle company in defense; the consideration of barrier planning at battle group and company level; types of artificial obstacles; responsibilities of commanders and staff officers; and coordination of the barrier plan with other operational plans. Map exercises in which students plan both fires and barriers within a company defensive area. \$1.10.

Battle Group in Night Attack, 2318-USAR, four hours. A conference and terrain exercise to discuss the principles of offensive combat as applied to a night attack and how such an attack is conducted. The importance of night training of the battle group is stressed. 90¢.

Battle Group Employment of Task Forces, 2324-USAR, four hours. A conference and map exercise covering the employment of small, mobile task forces generally corresponding in size to battle group or smaller, with emphasis on the battle group-size task force.

Battle Group in the Attack, 2328-USAR, six hours. A map exercise under nonactive atomic conditions dealing with two different situations which illustrate the basic principles applicable to an Infantry battle group in: (1) an attack on a broad front, and (2) an attack on a narrow front. Mobility is limited to that of the foot soldier. \$3.00.

Battle Group in Position Defense, 2401-USAR, six hours. A map exercise involving basic considerations for the organization, occupation and conduct of the position defense by a forward battle group on both narrow and extended frontages. 90¢.

Battle Group in Defense, 2408-USAR, eight hours. A terrain exercise encompassing the employment of an Infantry battle group (with tanks and truck transportation attached) which has the mission of defending a wide front



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Infantry, Book Department, U. S. Army Infantry School, Fort Benning, Georgia.

while participating as a forward battle group of an Infantry division conducting the mobile defense. \$1.20.

Battle Groups of the Brigade in Delaying Action, 2503-USAR, four hours. Map exercise in which the student acts as a commander of a battle group operating as part of a brigade task force. Emphasis is placed on differences between operations of battle group under brigade headquarters and operations directly under division. The student is required to evaluate an existing delaying position, in order to determine changes to be made in light of atomic weapons employment by the enemy. The student must then plan the employment of atomic weapons to support the delaying action, to include daylight and night withdrawals. A final situation presents the student with a penetration of his unit's delaying position and requires him to decide the actions to be taken by his unit. 95¢.

Battle Groups of the Brigade in Attack—Mobile Operations, 2506-USAR, four hours. Map exercise covering the battle groups of the brigade task force engaged in mobile offensive operations. The brigade task force includes tanks and elements of the reconnaissance battalion in addition to the battle groups assigned. It is assigned the mission of breaching an enemy position in conjunction with the support of atomic weapons and moving rapidly in the exploitation to seize objectives deep in enemy territory. Emphasis is placed on differences between operations of battle groups operating under brigade headquarters and operations directly under division control. The student is required to develop detailed recommendations concerning the atomic fire support plan required for the action, to include both scheduled and on-call atomic fires. The conduct phases of the problem include both the exploitation and the pursuit utilizing preplanned on-call atomic fires against targets of opportunity. \$1.75.

Introduction to Armor, 2600-USAR, one hour. Conference covering the salient features of the courses of armor instruction; historical background developing the three roles of armor; and the employment, formations, and organization for combat of the armored division. Map exercise illustrating armored division attack formations and organization for combat. 40¢.

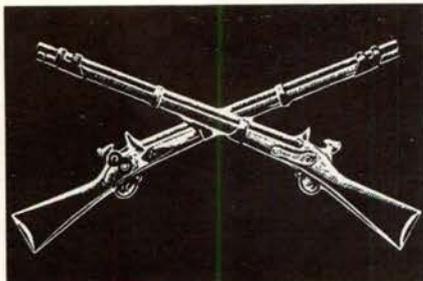
Armor Company Team, Attack, 2624-USAR, four hours. Integrated conference and map exercise involving an armor company team in the attack. The fundamentals of employing the armor company team in the attack are applied to specific combat-type situations and include an attack by tanks and dismounted Armored Infantry on the same axis. \$3.00.

Armor Battalion Task Force, Attack, 2632-USAR, two hours. Integrated conference and map exercise covering the composition, organization for combat, formations, control measures and principles of employment of Armored Infantry-heavy and tank-heavy battalion task forces in the penetration and envelopment. 40¢.

Combat Command in Defense, 2640-USAR, two hours. Conference covering the employment of armor units in defense with emphasis on the combat command, armored division, in mobile defense. 30¢.

Engineer Organization, 2707-USAR, two hours. A problem dealing with organization, capabilities, equipment and principles of employment of the divisional engineer combat battalion and the engineer platoon of the battle group.

Defense Measures Against Atomic Explosions, 2795-USAR, two hours. A problem on the tactical use of the atomic weapon. The problem reviews the blast, heat and prompt and residual radiation effects on individuals and units. 25¢.



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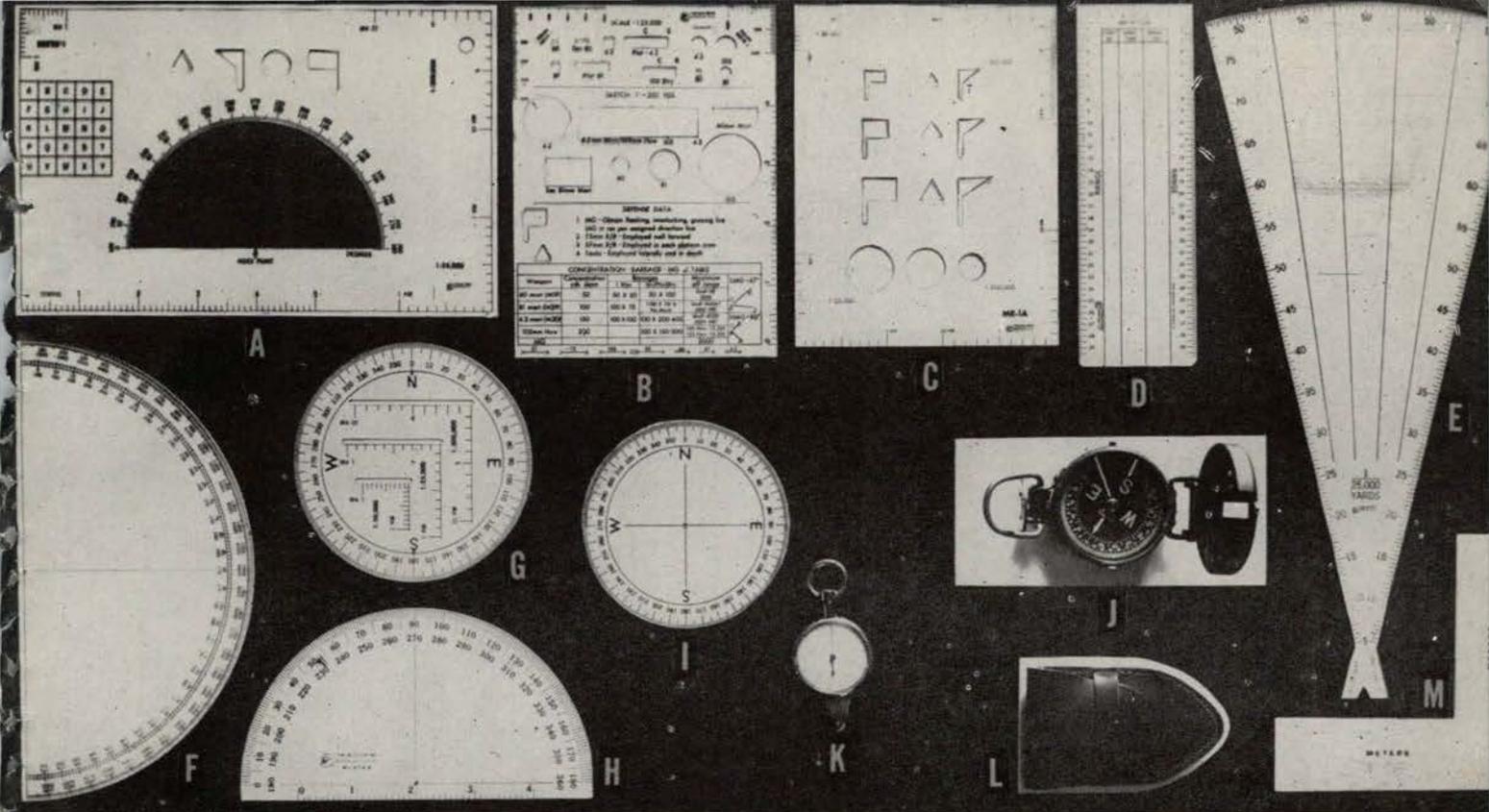
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For the Infantryman

MAP READING MATERIALS

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A.	Scale Coordinate Combination w/scales 1:25,000	1.10
B.	Defense Template	.90
C.	MR-1A w/scales 1:25,000, 1:50,000, 1:100,000	.25
D.	Scale, Range Deflection	1.00
E.	Scale, Range Deflection Fan	.80
F.	Semi-Circular Protractor, graduated in degrees and mils	.50
G.	Compass Protractor w/coordinate scales, 360 degrees	.25
H.	Semi-Circular Protractor (6 inch), 360 degrees	.25
I.	Compass Protractor, 360 degrees	3.25
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M.	Scale, Metric, R. F. 1:25,000, 1:50,000	

SWAGGER STICKS

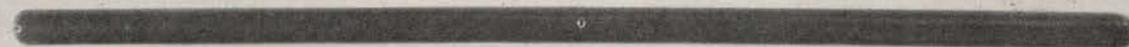
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P



Q



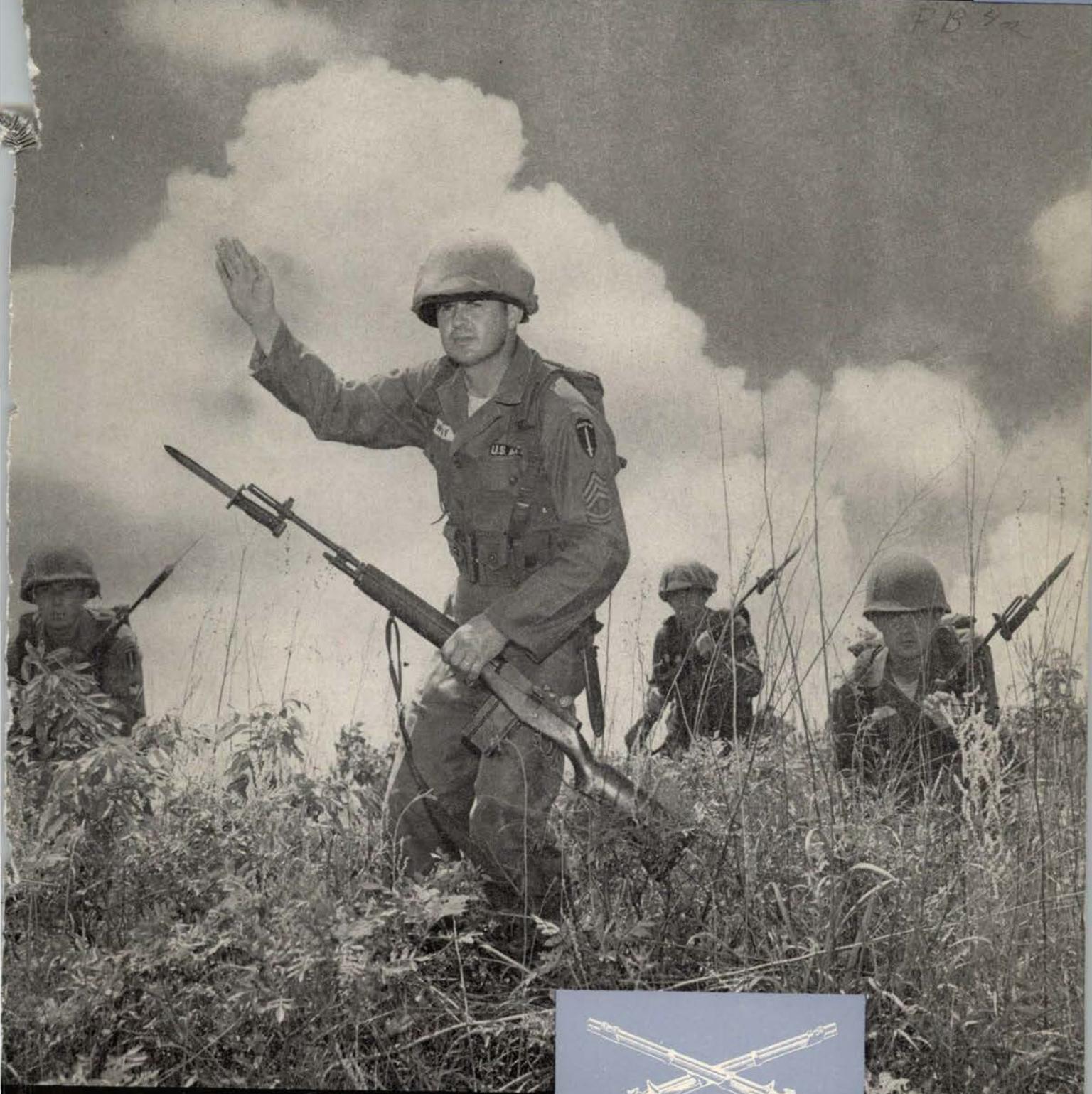
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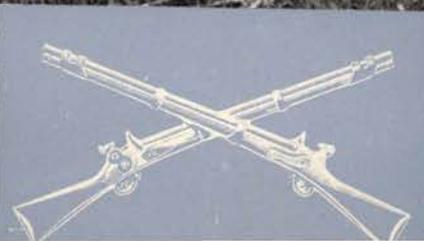


THIS man wins wars—closes with and destroys the enemy. He deserves the best in leadership. Providing that leadership is the job of every Infantry officer and noncommissioned officer. To lead today's Infantryman you have to know your stuff. Bluffing won't do. Nor will guessing. You have to be sure of yourself. You have to be well informed. You must *know* Infantry. Much of this know-how is provided by instruction at the Infantry School. But between periods of schooling you must keep up with changes and new developments if you are to provide the leadership needed and expected by the Infantry soldier. This is a challenge. *Infantry*, your professional journal, is published to help you meet this challenge. Every Infantry officer and noncommissioned officer should read *Infantry* regularly. Lend this copy to another Infantry leader. Encourage him to subscribe so he will receive future copies of his own.

Infantry



The Professional Journal for Infantrymen



July-Sept 1958

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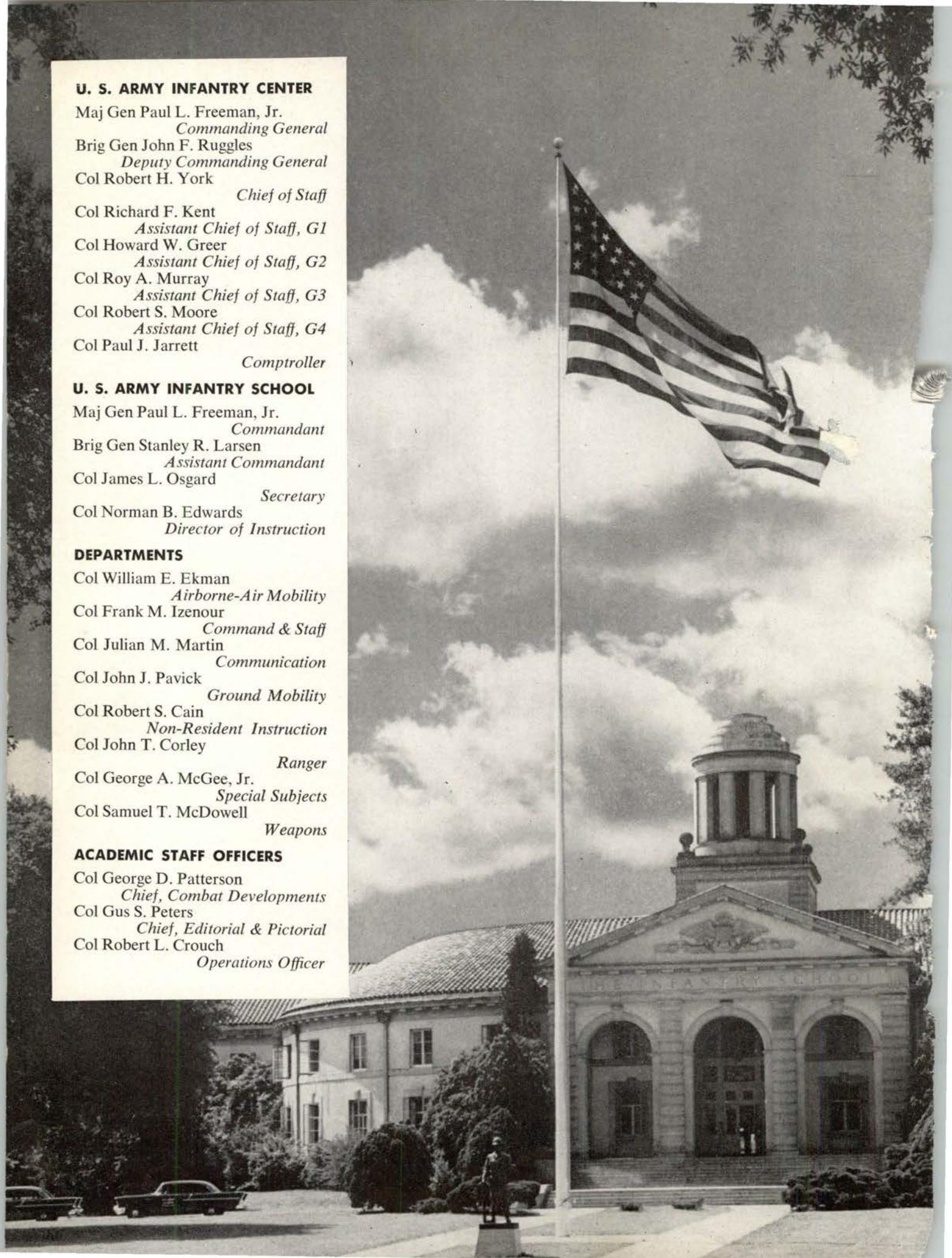
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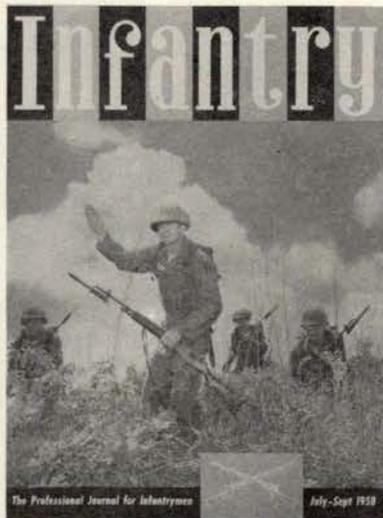
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THE COVER

The Infantry soldier with his feet on the ground and his rifle in his hand is still the ultimate weapon in modern combat. His ability to close with and destroy the enemy is the dominant factor in any kind of warfare. At the moment of decision, there can be no substitute for the small-unit leader who stands at the head of his men and shouts: "Follow Me!"



Infantry

The Professional Journal for Infantrymen

OFFICIAL PUBLICATION

UNITED STATES ARMY INFANTRY SCHOOL

VOL 48

Third Quarter July-September 1958

NO 3

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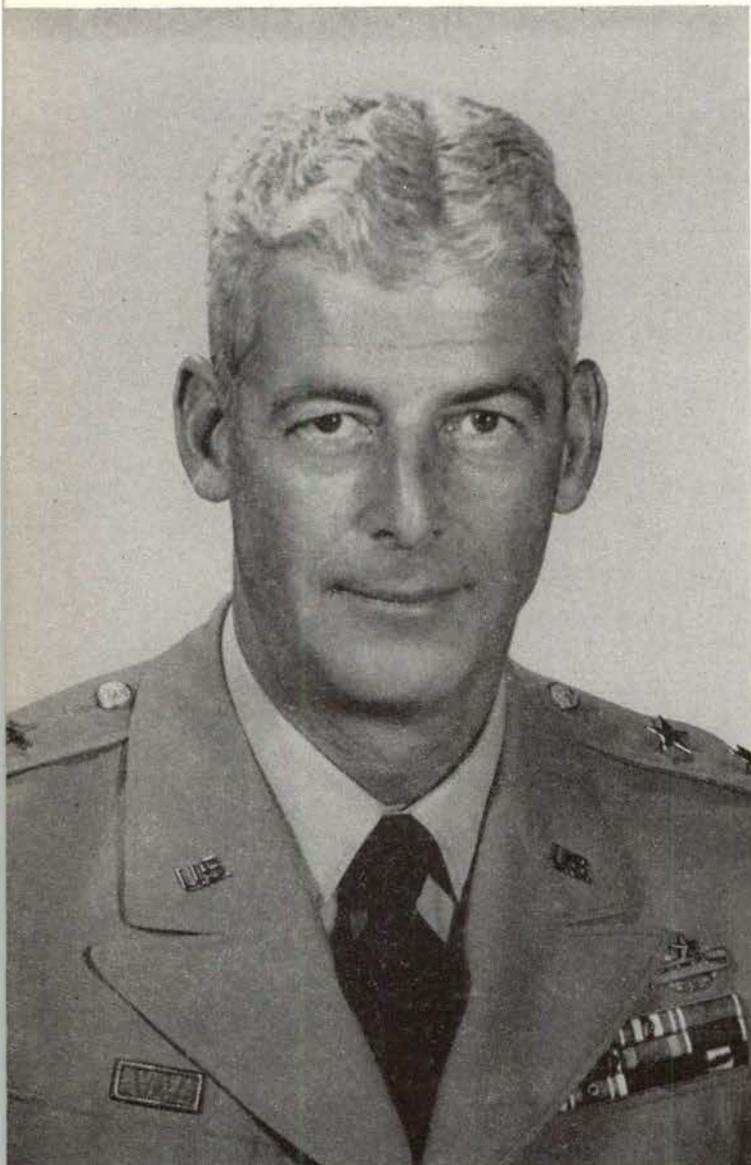
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Dear Infantrymen:

I consider my assignment as Commandant of the United States Army Infantry School the most challenging of my military career. The Infantry School has achieved wide recognition for its outstanding instruction and training of Infantrymen. It has had a major role in the development of many of our greatest commanders and in the production of Infantry leadership which has been vital to the defense of our country in two world wars and in Korea.

The high standards and forward thinking of former commandants and of the officers and men who have served on its staff and faculty have made our Infantry School the foremost institution of its kind in the world. I accept the challenge presented by my predecessors in this assignment and assure you that I intend to maintain their standards and to advance the Infantry in every way possible.

It is my desire that Infantrymen, and those who work with the Infantry, regard the School as a focal point for all matters pertaining to the Infantry. I want to encourage progressive thinking on organization, equipment, tactics and techniques which will enable the Infantry to fulfill its historic and continuing role as the backbone of our Army. I am particularly interested in developing a greater exchange of information between Infantrymen in the field and the School. Through personal letters, our *Infantry School Notes*, *Infantry* magazine and other media, I shall endeavor to keep Infantry commanders informed on changes, new developments and thinking here at the School. At the same time, I solicit your comments and suggestions. I hope that you will keep me informed of your experiences and problems as you work with new organizations and equipment. Write to me personally or use this professional journal as a forum for your thinking and recommendations which will benefit the Infantry.

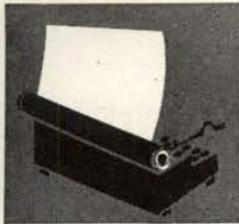


Maj Gen Paul L. Freeman, Jr.

NEW COMMANDANT

PAUL L. FREEMAN, JR.
Major General, USA
Commandant

INFANTRY



THE EDITOR SAYS

DEAR READER:

Here is your new *Infantry*, in a larger, more effective format.

The Infantry wants the best—the best trained soldier, the most efficient organization, the most modern weapons and equipment, the most effective tactics. And it wants the best possible professional journal. Carefully considered changes in the appearance of *Infantry* have been undertaken with this in mind.

Like the “sack” and the “chemise,” *Infantry’s* new dress is deliberately calculated to stimulate interest and to allow greater flexibility, while still covering the same basic features.

Underneath its bright, new (but we hope uncontroversial) exterior, *Infantry* is still the official publication of the United States Army Infantry School and the only professional journal published specifically for Infantrymen and those who work with the Infantry. It is still an important vehicle for Infantry School instruction which bridges the gap during the revision and approval of field manuals and other training literature which take longer to produce and distribute.

You can continue to look to *Infantry* for the latest information on new developments and trends. Except for occasional personal-opinion articles which will be published to stimulate thinking and to foster the best interests of the Infantry, all of the material in *Infantry* will be official, “need-to-know” information on Infantry doctrine and techniques. Most of the articles will still be written by the same experts who prepare the

School’s courses of instruction, field manuals and training texts, or by other experienced Infantrymen throughout the Army.

Much thought and effort has gone into the format for your new *Infantry*. A larger and more readable type face has been selected for your reading ease. The larger format has been adopted to make room for additional material and to permit greater flexibility in the use of illustrations. And you will get more for your money as these improvements have been accomplished without any increase in subscription rates.

We are looking for no bouquets or kudos, but we do want to know what you think of your new professional journal. We want honest opinions, suggestions and constructive criticisms which will enable us to make *Infantry* more helpful to you.

EDITOR



LETTERS TO THE EDITOR

“Our” Magazine

Sir:

. . . I consider that the *Infantry* magazine has always been an outstanding publication and that the scheduled increase in size should increase not only its circulation, but more important, its value to the Infantry. We are taking steps to publicize “our” publication and assure you that the magazine will continue to be widely supported by the officers and men of the 1st Infantry Division . . .

David H. Buchanan
Major General, USA
1st Infantry Division
Fort Riley, Kans.

We are gratified that the “Big Red One” considers Infantry “our” publication, for that is exactly what we try to make it. This official publication of the Infantry School is your professional journal. We hope that Infantrymen everywhere will regard Infantry as “our” journal. Let us know what we can do to make it more helpful to you.—Editor.

Infantry Journal

Sir:

As a former Infantryman I’m interested in keeping abreast of current developments in arms, tactics and organization. In the past there was a periodical known as the *Infantry Journal* which I believe was considered the official organ of the Infantry. I understand from friends in the Infantry that the name has been changed . . .

I should like to subscribe again to this magazine but have forgotten the

procedure. I would greatly appreciate it if you would furnish me with the necessary information and subscription cost. Thanks!

James M. Trowbridge
Jacksonville Beach, Fla.

The Infantry Journal was the unofficial publication of the Infantry Association. When the Infantry Association merged with other branch associations to become the Association of the U.S. Army, the Infantry Journal combined with the journals of those associations to form the Combat Forces Journal. This publication is now Army magazine.

Infantry magazine, published by the United States Army Infantry School, is the only official publication of the Infantry. Infantry covers the latest changes, new developments and trends in organization, weapons, tactics and techniques. Our Book Department is sending you a sub-

Continued on page 4

scription form and other necessary information.—Editor.

Valuable Source

. . . The material and articles which have appeared in your fine magazine have been of great value to me and my contemporaries during the last year here in Europe. This was especially so during our pentomic reorganization. We have the fullest confidence that *Infantry* will continue to be an available source of doctrine and Infantry School teaching during our next few years in Germany and in any other assignment in the future.

Theodore T. Niemczyk, Jr.
1st Lt, Infantry
APO 36, New York

You may be assured that Infantry will continue to keep you posted on changes and new developments. — Editor.

Handy Reference

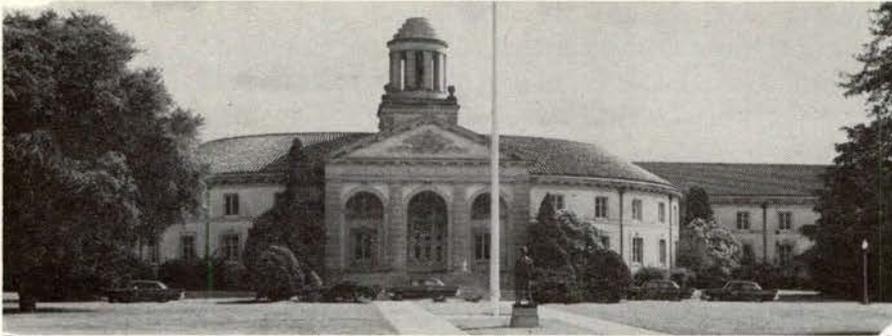
Sir:

I find *Infantry* a very handy publication in my present job in the (Philippine) Army. I still refer to my 1955 issues of *Infantry* for reference material. While I don't have the chance to avail myself of the facilities of the Army Extension Courses at Fort Benning, I find that *Infantry* has kept me abreast of developments in tactics, techniques and doctrine since I attended the Associate Company Officers Course at Fort Benning in 1955 . . .

I am sending the necessary information to continue my subscription . . . Best wishes to *Infantry* and to its hardworking staff.

Antonio N. Venadas
1st Lt, Infantry
Manila, Philippines

We are pleased to learn of another instance in which allied officers are able to keep abreast of U.S. Infantry developments through our magazine. We would be happy if you will pass this information to any of your friends



INFANTRY SCHOOL REORGANIZED

THE United States Army Infantry School has been reorganized to facilitate the presentation of integrated instruction in all leadership courses. While the Infantry School has always stressed the close relationship of staff considerations to command decisions, the new organization will insure that instructional problems present the practical application of command and staff techniques under the centralized direction of a single department. Subjects of a specialized nature, such as leadership, training management and nuclear weapons employment, will be conducted by a separate department.

Under the reorganization, the former Staff and Tactical Departments of the School have been reorganized to form two new departments — a Command and Staff Department and a Special Subjects Department. All functions previously performed by the old Staff and Tactical Departments have been rearranged in the two new departments with the exception of the following subjects which have been transferred to the Ranger Department: dismounted drill, combat conditioning, hand-to-hand combat, survival, evasion and escape, squad tactics, platoon tactics and the tactical training of the individual. This will centralize responsibility for field-type training under the Ranger Department and will make that department generally responsible for the instruction given in the Basic Infantry Officer Course.

All of the other departments of the School remain essentially as they have been organized in the past.

The missions of the departments affected by the reorganization are as follows:

MISSION OF THE COMMAND AND STAFF DEPARTMENT

1. To prepare and present resident instruction in all aspects of organization, staff functions, tactics, and command of Infantry units (less rifle squads and rifle platoons) and combined arms, up to Infantry and Airborne divisions and armored combat commands; and in the techniques and employment of supporting arms and the U. S. Air Force.

2. To develop, review, and coordinate tactical doctrine and staff

(Continued in box, next page)

who might also be interested in Infantry.—Editor.

Keep the Captain

Sir:

Re Capt Hadley's letter to the Editor in the January issue: I agree. Add my opinion to the stack arguing for the battle group commander to be a lieutenant colonel and company commanders to remain captains. See the USMC new battalion TOE—it will do the job just as well or better than ours.

J. B. Love
Capt, Infantry
Hq, 77th Special Forces
Group
Fort Bragg, N. C.

You may be interested in reading Colonel Wermuth's thoughts on this subject. See page 61, this issue. — Editor.

Suggestion Offered

Sir:

As training officer of an Infantry Reserve Company, I find *Infantry* an invaluable aid in keeping abreast of the recent changes within the Army. Since I was released from active duty in August 1956, many tactical and organizational changes have taken place which would be lost to me without *Infantry* or a similar publication.

Even though the Reserve division has not yet converted to the pentomic organization, important changes are posted on our bulletin board and interjected into our regular classroom and field training. I feel that this inspires pride in the Infantry by showing that it is not a stagnant branch of service and forges ahead to set the pattern for modern concepts of warfare.

As training officer I also find it a problem to file changes to field manuals. Changes may make the difference between correct and incorrect instruction, but they are easily overlooked or lost. We usually insert them in the back cover of the FM to which they refer. Since there is nothing to retain them, they fall out or get tattered edges where they protrude past the cover.

continued on page 72

procedures relating to Infantry and Airborne units up to the reinforced battle group.

3. To furnish information and conduct studies pertaining to areas of instructional responsibility.

4. To develop, review, and evaluate new doctrine, organization, procedures, techniques, and materiel requirements in respective areas of instructional responsibilities, based on guidance provided by the Combat Developments Office.

5. To prepare and revise field manuals, Army training programs, training circulars, training film scenarios, and miscellaneous training literature pertinent to assigned areas of instruction.

MISSION OF THE SPECIAL SUBJECTS DEPARTMENT

1. To prepare and present resident instruction in the conduct and management of military training; map and aerial photograph reading; military management; leadership; atomic weapons characteristics, effects, and target analysis; military medicine; civil affairs and military government; military justice; effective writing; special forces; and monograph writing.

2. To furnish information and conduct studies pertaining to areas of instructional responsibility.

3. To develop, review, and evaluate new doctrine, organization, procedures, techniques, and materiel requirements in respective areas of instructional responsibilities, based on guidance provided by the Combat Developments Office.

4. To prepare and revise field manuals, Army training programs, training circulars, training film scenarios, and miscellaneous training literature pertinent to assigned areas of instruction.

MISSION OF THE RANGER DEPARTMENT

1. To prepare and conduct for selected officers and non-commissioned officers a Ranger Training Course that uses a maximum of practical field training in developing military command and leadership qualities.

2. To prepare and present resident instruction in tactics and troop leading of rifle squads and rifle platoons, including special operations, patrolling and battle drill.

3. To prepare and present resident instruction in the tactical training of the individual soldier, to include battle indoctrination, combat conditioning, bayonet and hand-to-hand combat, escape and evasion training, and drill and command.

4. To develop, review, and coordinate Ranger doctrine and procedures, and assist the Command and Staff Department in the preparation of doctrine for rifle squads and rifle platoons.

5. To furnish information and conduct studies pertaining to areas of instructional responsibility.

6. To develop, review, and evaluate new doctrine, organization, procedures, techniques and materiel requirements in respective areas of instructional responsibilities, based on guidance provided by the Combat Developments Office.

7. To prepare and revise field manuals, Army training programs, training circulars, training film scenarios, and miscellaneous training literature pertinent to assigned areas of instruction.



Army Rifle Marksmanship Today

General Wyman answers questions on our new rifle marksmanship program and explains its superiority over systems we have had in the past.

By Gen Willard G. Wyman

THE adoption of Trainfire I and the announcement of its scheduled implementation as the basic rifle marksmanship course for the United States Army has generated considerable discussion. Some comment and many questions have been received at this headquarters concerning the validity of Trainfire I as a replacement for the present known-distance system.

It is apparent that additional information on this subject is needed to clarify the many advantages which Trainfire will bring to our training for combat. I shall attempt to provide

some of this information as I answer a few of the more important questions that are being asked about our rifle marksmanship training.

Has Trainfire demonstrated that it can develop battlefield riflemen more efficiently, in large numbers and with greater economy than the conventional system?

To fully appreciate and accurately evaluate Trainfire, one must under-

stand the entire Army rifle marksmanship program, not just Trainfire I, which is the basic individual marksmanship phase. The system, in addition to Trainfire I, will eventually include Trainfire II (squad firing), advanced marksmanship training and competitive shooting. All of these elements combine to provide more complete and more effective rifle marksmanship training than we have known in the past.

Our rifle marksmanship program is designed to accomplish two jobs. The first, and obviously the most important, is the rapid and economical pro-

duction of effective combat marksmen. The second is the development of precision marksmen for combat and competitive firing.

Before discussing the manner in which Trainfire I accomplishes its portion of the mission, let us see how the various components of the system fit together to accomplish the total mission.

Trainfire I introduces the soldier to his weapon, teaches him the fundamentals of shooting, and trains him to adapt these fundamentals to combat-type firing.¹ Trainfire II, through technique of fire, prepares the individual to function effectively as a member of a rifle squad in combat operations. These two phases are to be given to all trainees during the first eight weeks of basic training.

We know that during the second eight weeks the soldier receives advanced individual training designed to make him a military specialist. It has been proposed that the Infantry soldier, since the rifle is his basic weapon, should receive an advanced marksmanship course during this second eight-week period to make him a *rifle specialist* or precision marksman. The development of a rifle specialist is something that our marksmanship training should have been de-

¹Detailed information on Trainfire I is contained in FM 23-71.

signed to do all along. The additional training would be designed to teach the Infantryman some of the principles of advanced marksmanship and precision shooting to further refine combat marksmanship as taught in Trainfire I. The instruction would teach the Infantry soldier how to engage battlefield targets which are at ranges greater than 300 meters.²

Other Trainfire courses are under research which will have as their aim the training of individual and organizational rifle specialists. Only the best firers from Trainfire I and the Advanced Marksmanship Course would qualify for these advanced Trainfire courses.

The various components of the marksmanship program form a cycle which is completed at this point. For it is primarily from the pool of exceptional marksmen produced by the entire program that we would draw and train our competitive shooters and rifle marksmanship coaches. These individuals would be outstanding precision shooters with the ability to win rifle matches and thus uphold the prestige of our service and nation. Also, they should be experts in the art of coaching and teaching others to coach. A pool of such distinguished shooters will aid materially in raising

²Department of the Army recently directed that ranges be converted to the metric system.



GENERAL WILLARD G. WYMAN

the Army's marksmanship standards. However, it should be pointed out that anyone can enter the competitive marksmanship program and all personnel are encouraged to do so early in their Army training careers.

Aware now that Trainfire I is only the *individual combat marksmanship* phase for *all* basic trainees, it is necessary to evaluate its effectiveness in this light.

The purpose of any combat marksmanship course is to give the individual the best possible preparation to meet the enemy on the battlefield. World War II and Korea have shown

Field firing range. Targets appear at 75, 175 and 300 meters.



GENERAL WILLARD G. WYMAN, recently retired commander of U. S. Continental Army Command, was commissioned in the Coast Artillery upon graduation from the United States Military Academy in 1918, and he transferred to the Cavalry two years later. During the first World War, General Wyman served with the AEF in France and in the Sino-Japanese War with the Chinese Nineteenth Route Army in the defense of Shanghai. In World War II, he first was General Stilwell's G3 representative to the Chinese Fifth Army in Burma and later G3, U. S. Forces in the CBI. Moving to the North African Theater, he was a staff officer in Allied Force Headquarters and then assistant division commander, 1st Infantry Division, in Sicily, the Normandy landings and in the campaigns of France and Germany. He then returned to the United States to take the 71st Infantry Division overseas and led it across Germany into Austria, where it linked with Russian forces at the River Enns. Upon returning to the United States, he became G2, Army Ground Forces, and later chief of staff, First U. S. Army. In Korea, he was commanding general IX U. S. Corps. General Wyman next went to Turkey as commander, Allied Land Forces, Southeastern Europe. In 1954, he returned to the United States to serve as commanding general, Sixth U. S. Army. The following year, he became deputy commanding general of USCONARC. For the past two years he has been commanding general, USCONARC.

some respects from the known-distance sequence. For example, the soldier actually fires the rifle at a target during his second period of instruction, and a transition-firing stage is not required since there is no transition to be made. A comparison of the two systems is shown in Figure 1.

In the first two-hour period of Trainfire I instruction, the soldier is oriented on the history and development of his rifle and on the relationship that should exist between the firer and his weapon. He is taught basic nomenclature and how to load, fire and unload his weapon. Also during this period he is shown two training films: "This is the Infantry" and "Infantry Weapons and Their Effects."

The soldier then moves immediately to the 25-meter range, where he receives an anti-fear demonstration. He observes as the rifle is fired from the groin, stomach and chin. This is designed to remove any fear he may have of recoil, so that he can concentrate on proper sighting and aiming and trigger squeeze.

Following brief instruction on fundamentals, he goes to the firing line and shoots one three-round shot group for familiarization. A trained rifleman then fires the same exercise. This gives the soldier an opportunity to compare his firing with that of an experienced marksman and to see for himself that he needs training.

The student then returns to the classroom for mechanical training.

that a rifleman's battlefield target has certain general characteristics. Extensive studies of combat reports and interviews with combat-experienced personnel have led to the formulation of the following premises concerning targets and the battlefield:

1. Most combat targets are numbers of men or objects, linear in nature, irregularly spaced, along tree lines, ditches or other objects which will provide cover.

2. Targets are detected by smoke, flash, dust, noise or movement and usually are seen in a fleeting manner.

3. Targets can be engaged by using a nearby object as a reference point.

4. The selection of an accurate aiming point in elevation is difficult because of the low outline and obscurity of the target.

5. The present zeroing technique (using a six-o'clock hold to strike the center of the bull's-eye) further complicates the problem of hitting the battlefield target.

6. The range of battlefield targets will rarely exceed 300 meters.

7. Enemy personnel targets are rarely visible except in close combat.

8. Conditions in battle rarely permit or require the use of a windage adjustment.

9. The nature of the target, the terrain, and the defensive requirement of digging in often preclude the use of the prone position; these conditions favor the use of the foxhole and supported positions while standing, kneeling, etc.

Our rifle marksmanship training has always been conducted in progressive stages. In the known-distance system, training is presented in four major phases: preliminary rifle instruction, practice firing, record firing and transition firing. While Trainfire I instruction is progressive, it differs in

Figure 1.

TRAINFIRE I		KNOWN-DISTANCE	
Subject	Hours	Subject	Hours
Orientation	2	Mechanical Training	3
Mechanical Training	4	Preliminary Rifle Instruction	
Preliminary Rifle Instruction		& 1000" Firing	37
& 25-meter Firing	26	Zeroing	4
Zeroing	4	Practice Firing	18
Field Firing	18	Record Firing	8
Target Detection	16	Transition Firing	16
Record Firing	8		
	—		—
Total	78	Total	86

The instruction is essentially the same as that given in the known-distance course, except for the sequence in which it is presented. By firing the weapon before he receives this training, the firer is motivated to learn about the functioning and the care and cleaning of his rifle.

Returning to the 25-meter range, he continues the 26 hours of preliminary rifle instruction. During this phase he is given considerable live-firing experience as he learns sighting and aiming, trigger squeeze and shooting positions.

Trainfire I employs the "whole" method of instruction. In this technique, the soldier performs an exercise immediately after receiving instruction in it. For example, as soon as he learns a position he moves to the firing line to fire from that position. He does not wait until he has been instructed in all positions before going to the range.

The positions taught in Trainfire I are those outlined in FM 23-5, "U.S. Rifle, Caliber .30, M-1." However, Trainfire I also teaches adaptations of the positions to take advantage of supports for the rifle that are normally found on the battlefield. For this purpose, stumps and foxholes are used at each firing point on the 25-meter range.

The positions are taught without sling support. In combat, a rifleman will rarely adjust a loop or hasty sling. Rather he will fire from a position

Figure 2. 25-meter modified target with dimensions.

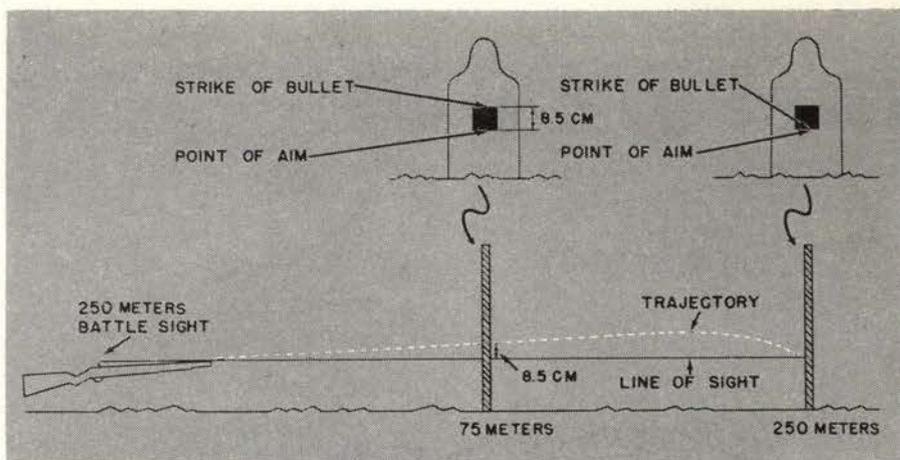
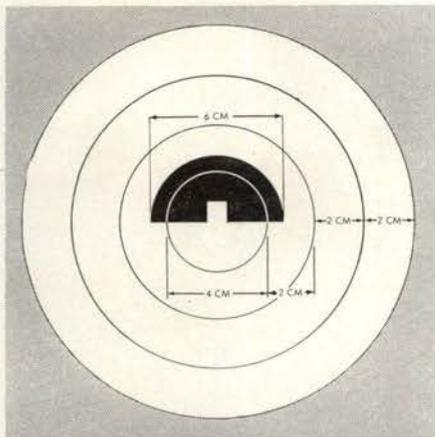


Figure 3. Principles of zeroing.

that provides support, cover and, if possible, concealment. Since the soldier must select his own firing position, the advantages and disadvantages of the various positions are stressed. He is shown the types of targets for which each can be most successfully used. For example, the prone position offers maximum support and concealment for the firer; however, it gives him minimum visibility and takes longer to assume. The standing position is the quickest to assume and provides the utmost visibility, but it is the least stable and presents the best target to the enemy. The standing position is best for close-range targets where speed is of the essence. A distant target generally permits the firer to take more time and requires support. The kneeling position, or under some conditions the prone position, could be more appropriate.

Throughout all firing, the soldier wears the combat pack and steel helmet.

The target used on the 25-meter range is the half bull's-eye (Figure 2). With this target, the point of aim is the point of intended impact. The soldier retains all targets he fires, so that he can check his daily progress and provide the instructor with a ready reference for target analysis.

Soldiers having difficulty are sent to the corrective platoon, which is a formal part of the Trainfire I program. In this platoon, experienced

coaches detect errors and help to correct them before they develop into bad habits. When the errors have been eliminated, the soldier returns to his own platoon to continue his training. Throughout this corrective training, sighting and aiming and trigger control continue to be stressed.

Finally, the soldier is given a shot-group test to determine his readiness to progress to the next step, the zeroing of his rifle. If he fails to pass this test, he is given additional training by the corrective platoon.

Before discussing zeroing, however, I want to point out that a revision of FM 23-5³ will change known-distance marksmanship instruction to include several of the new features provided in Trainfire preliminary rifle instruction. These will include early firing, the "whole" method of instruction, and use of the 25-meter range for live firing to replace the current PRI circle. This narrows considerably the differences between the two programs.

Trainfire I teaches zeroing at 75 meters for a 250-meter battlesight setting. This is accomplished by aiming at the bottom of a black paster on an "E" type silhouette target at 75 meters and adjusting the sights so that the strike of the bullet is at the top of the paster (Figure 3). This gives the

³Although the M-14 rifle has been adopted as the Army's standard rifle and Trainfire I has been adopted as the standard method of basic individual rifle marksmanship training, the weapon will not be completely distributed nor the training program entirely implemented for several years. Consequently, FM 23-5 is being revised for use during this interim period.



Instruction in target detection is presented concurrently with both 25-meter and field firing.

correct 250-meter zero, since the bullet drops the same distance as the height of the paster from 75 meters to 250 meters. This method could be very useful in combat, where zeroing at 250 meters may not be possible.

With his weapon zeroed, the soldier is ready for *practice firing* at ranges up to 300 meters. The Trainfire I field-firing range is similar to the conventional known-distance range in that it is flat and open. However the foxholes and stumps on the firing line lend cover and support as the soldier engages his targets. These targets are the electrical pop-up type which fall when hit. No pit detail is required.

At this point in his training, the firer learns hold-off in both windage and elevation. It is here, also, that he is taught to assume the best position and to get off accurate shots quickly.

While there are no sustained fire exercises in Trainfire I similar to the "nine rounds in 50 seconds" of the known-distance program, the student is trained to fire accurately within a time limitation. This is accomplished by a number of individual targets which are dispersed laterally and in depth on the range. This arrangement approximates the distribution of targets that might be encountered on the battlefield. Up to 200 meters the targets are exposed for five seconds. Beyond this range they are exposed for

10 seconds. Since the targets appear individually and in no fixed sequence, the soldier must assume a good firing position and get off an accurate shot, at a "surprise" target, within a few seconds. This method actually provides more realistic training in accurate, rapid firing than we have had in the past.

During the latter stages of preliminary rifle instruction, and throughout field firing, the soldier is given 16 hours of concurrent training in target detection. This is a new subject in marksmanship instruction. It trains

the rifleman to find his target by detecting target indicators such as sound, flash, dust or movement. Single or multiple, moving or stationary targets are detected by one or more of these indicators.

Now we will consider, briefly, *record firing*. It is in this stage that we find the most significant differences in the programs. In direct contrast to the known-distance record range, targets on the Trainfire I range, as in combat, are hard to find. They are exposed for just a few seconds and are located at unknown ranges. They are engaged from supported and unsupported positions. The range is in its natural state, with trees, tall grass, bushes, etc., and it has not been seen by the soldier prior to firing.

The soldier fires 112 shots at 112 targets for the record course. This is accomplished in two firing periods. He fires 56 rounds in the morning of one day and 56 rounds in the afternoon of a second day, or vice-versa. During each firing period, he fires 32 rounds from a supported position — eight rounds from each of four foxholes located on the firing line. He fires at surprise targets which appear at ranges of 50 to 350 meters. He then fires 24 rounds — eight rounds in each of three lanes — from unsupported firing positions of his choice,

Record firing—supported phase. Hits are tabulated by a scorer at the firing point.



while moving forward from the firing line to the 50-meter line. As in the supported firing, the targets appear at varying ranges up to 350 meters. Throughout the course, he is allowed one round for each target, and no credit is given for unexpended rounds.

The two systems were troop tested at Fort Jackson, South Carolina, and Fort Carson, Colorado, by firing over 12,000 trainees on a combat-type course. One half of the test troops received the conventional known-distance training and the other half Trainfire I instruction. Both groups fired under similar weather conditions and, since the test lasted a full year, all seasonal difficulties were experienced. Every possible precaution was taken to insure equality and validity in test conditions. Without going into details, the tests showed that Trainfire I personnel hit an average of five (approximately 29%) more targets per man than the conventionally trained soldier.

The tests also established that the addition of target detection to the known-distance system would not achieve the results obtained by Trainfire I. Some of the conventionally trained test companies were given the target detection course along with their known-distance firing. Their proficiency on the Trainfire record range did not match that of the Trainfire I troops. In fact, their scores were comparable to those of the other conventionally trained companies. The success of the Trainfire I program stems to a great degree from the training the soldier gets in *rapidly* assuming *correct, steady* combat positions from which to fire *accurately*.

The tests also indicated that Trainfire I ranges are more economical to construct and maintain. However, there has been some controversy on this point, due to the wide variations in cost estimates for known-distance ranges. This resulted from differences in the type and elaborateness of facilities considered, the amount of earthmoving required, etc. Cost estimates for Trainfire I ranges were more consistent and were uniformly lower than



Record firing—unsupported phase. The scorer follows the firer. Targets are generally obscure—note the circled area.

those for conventional ranges.

Another economy effected by Trainfire I is the eight-hour reduction in training time and the many man-hours saved, particularly those resulting from the elimination of pit details.

Trainfire I has been referred to as an attempted "short cut" to marksmanship proficiency. This, of course, is not true. The proven principles of good shooting remain in this program. The changes are methods of presentation which produce an effective combat rifleman instead of a precision target marksman.

Our last three wars have indicated that our conventional system of rifle marksmanship training left much to be desired. We know that the problems facing the combat rifleman are confidence in his ability to engage the enemy, ability to detect fleeting targets, ability to assume steady firing positions rapidly, skill to hit a detected target and the will to kill the enemy. Known-distance marksmanship obviously does not provide instruction to meet all of these requirements. On the other hand, Trainfire

I has been developed specifically to solve these problems, with the possible exception of the will to fight, which must be accomplished by strong leadership. Troop tests have shown that Trainfire works. I am convinced that combat, the real test, will provide conclusive proof that this system of training does develop combat riflemen more efficiently, in large numbers and with greatest economy.

Is there a current and continuing military requirement within the Army for precision marksmen?

The armies of most nations have used expert marksmen or snipers of some form. Our own Army has used men known as "sharpshooters" since the days of the American Revolution. In the Civil War expert riflemen, known as "The Sharpshooters," reached a peak of perfection under the leadership of General Hiram Berdan.

The only nation known to have de-

voted any time to the techniques of sniping after World War I was Russia. The Soviets began the training and equipping of snipers in 1930. By the time of World War II, they had carefully integrated sniping tactics into all of their tactical doctrine. The Russian sniper took a heavy toll of key German personnel in that conflict.

The Japanese also produced a type of sniper, but their product lacked many of the characteristics traditionally associated with snipers. Experts at camouflage, they frequently took up positions in trees and waited for targets to appear. Luckily for us, they were poor shots. At the short ranges of jungle fighting, they averaged only one hit in 20 to 30 shots.

Today, our mobile concepts, the requirement for increased dispersion and the covering of gaps between units, enhance the value of expert riflemen. Individual, long-range targets can be expected to appear more frequently, and infiltration by enemy snipers and small units may be common. This will present unlimited possibilities for the use of precision marksmen. The rifle squad of the pentomic Infantry organization has a squad sniper who should be able to employ his rifle more effectively than the average rifleman. However, some

thought has been given to calling this individual by some other name, such as "senior marksman," since his duties are not those of a true sniper.

While Trainfire I assumes that battlefield targets will rarely exceed 300 meters, it is still important that all members of the rifle squad be able to deal effectively with targets of significance which appear at longer ranges. All Infantrymen, therefore, should be able to perform this "long-range" mission when the situation demands it. As I pointed out earlier, they should have additional marksmanship instruction in the advanced individual phase of training. This advanced training will include firing to at least 500 meters and will utilize known-distance ranges.

The individuals trained as precision marksmen, upon the completion of their training, would also serve as trained coaches for Trainfire instruction and would form the nucleus of competitive programs. This would further the development of the individual marksman and would also benefit our marksmanship and competitive shooting.

Precision marksmen, like weapons, must be integrated into the fire plan. Their use must be considered in our planning if they are to be effective.

In the attack, these exceptional marksmen should be used to engage specific targets which may hold up the advance. By operating in the rear or flanks of the assault platoons, they can position themselves to engage such targets.

Precision marksmen can be used to infiltrate, prior to the attack, to concentrate on automatic or crew-served weapons. However, when this is done it is of utmost importance to effect close coordination with the attacking forces. During the reorganization phase of the attack, they can be positioned on the approaches leading into the captured objective to provide security and to kill key enemy personnel leading the counterattack.

In the defense, precision marksmen normally would occupy prepared, camouflaged positions and operate in pairs as stationary observer-shooter teams. However, if observation is restricted or large areas of responsibility are assigned, it might be necessary for them to operate as mobile teams.

Precision marksmen can be employed also to prevent the removal of obstacles in front of the battle position. They can deny the enemy the use of certain areas, disrupt communications, or act as observers. Generally, they would be assigned definite sectors of responsibility, particularly along dangerous avenues of approach.

Precision marksmen may be profitably employed with the general and combat outposts where they will help delay and disorganize the advance of the enemy. In static situations, they may be placed in front of the forward edge of the battle position. Employed in depth, they can protect rear-area installations from infiltrating enemy.

When enemy snipers are active, our own precision shooters should be used in a counter-sniping role, operating either singly, in pairs or in conjunction with patrols.

In general, the precision marksman concentrates on enemy leaders. By eliminating key personnel and harassing troops, he weakens enemy morale. He is an expert. If put to proper use as a weapon, he is effective in any

The program will develop precision marksmen.





Competitive firing. Outstanding marksmen will be selected to represent their units in marksmanship competitions.

tactical situation. The requirement for precision marksmanship will continue as long as we have wars.

Does the adoption of Trainfire I eliminate the need for marksmen who will require training on known-distance ranges?

While the Army has adopted Trainfire I because it is considered the best method of training the soldier for combat, known-distance firing will not be eliminated. The need for some known-distance instruction and facilities to complement the Trainfire system is recognized. In fact, the order implementing Trainfire I for Continental Army Command units requires that a minimum of 50 known-distance firing points per division, or equivalent, be maintained at each major installation.

For those who are concerned that adoption of Trainfire I will prevent the development of expert riflemen for competitive marksmanship, I want to point out that we not only will retain, but will seek to vitalize our competitive marksmanship program.

Competitive marksmanship is a part of our way of life. Section 113 of the National Defense Act of 1916, *as amended*, provides for the promoting of interest and raising the standard of performance in the use of individual

arms by the citizenry of our country. It aids the National Rifle Association, “. . . to foster a knowledge of small arms and the ability to use them among members of law enforcement agencies and the armed services and all other citizens who would be subject to service in the event of war . . .”⁴ The act also prescribes the type of shooting and the courses of fire.

In the early days of this country, our ancestors were the foremost shooters in the world. They depended upon the skillful use of firearms for their livelihood. Their shooting embraced the very things that we need for combat: field firing, fast-moving targets, rapid assumption of a steady position and accuracy.

But times have changed. As a nation, we have become progressively poorer as marksmen. During World War I, the American soldier expended 7000 rounds for each enemy casualty that was produced. In World War II, the figure was 25,000 rounds and in Korea 50,000 rounds. While much of this increase in ratio must, of course, be attributed to weapons with greater rates of fire and to the doctrine of volume of fire versus aimed fire, at least a part of it stems from the general decline in our male population's familiarity with the rifle. Competitive

shooting and increased interest in marksmanship by our citizenry, as well as by our military forces, is vital and will help to improve our military marksmanship.

Known-distance firing has been the predominant method used for competitive shooting and certainly will continue to be used. It provides a simple and exacting method of judging the precision of the competitive shooter. It accommodates large numbers of both military and civilian shooters and permits standard methods of marking shots and scoring. And it provides for teaching and competitions in expert shooting with similar facilities and under like conditions, not only throughout our own nation but, in general, throughout the world.

Furthermore, competitive marksmanship develops precise shooting at ranges greater than those used in our normal military marksmanship training. Competitive known-distance ranges go up to 1000 yards. Skill at such distances is developed only by much practice. Interest in developing this kind of skill must be continued.

Actually, competitive small-arms marksmanship is a part of military training. This is one of the reasons why known-distance ranges will be retained. Commanders of all installations and units are directed to support the competitive marksmanship program and to afford every individual

⁴From the official statement of purposes of the National Rifle Association of America.

in the Army the opportunity to compete. This is to be accomplished at all levels so that the best talent becomes available to represent the Army in the National Matches.

Since the soldier with the rifle is the backbone of our ground forces, the Army should dominate the small-arms marksmanship field and should produce the outstanding rifle experts in the world.

The program of competitive small-arms marksmanship directed by this headquarters is aimed at improvement of our marksmanship. It is designed to emphasize, promote and expand the spirit of competition and to provide advanced marksmanship training for selected individuals. I cannot overemphasize the value of continued effort in this field. The competitive program has great value not only for the active Army, but also for the National Guard, the Reserve and our civilian counterparts. It helps to produce competent instructors and to train individuals for competitive

shooting. However, when Trainfire is implemented in the civilian components, instructors will require supplementary training in the combat marksmanship principles.

There is no conflict between the Trainfire system and the competitive marksmanship program. As I have said before, they complement each other. When the Trainfire system is fully implemented, it will help to provide the expert marksmen needed for competitive shooting. The system will determine, annually, the best shooters in the Army. Individuals who score the highest during annual qualification firing will be selected to represent their organizations in marksmanship competitions. After additional training on the known-distance range under the supervision of trained coaches, further competitions will determine the representatives on higher unit teams. Eventually, the All-Army Team will be formed for the National Matches at Camp Perry. However, individuals not selected for this team

may participate in these matches as members of Army area or major unit teams.

Upon completion of the National Matches, some firers will be assigned to the United States Army Advanced Marksmanship Unit (U.S. Army Rifle and Pistol Team) and the others will return to their organizations.

The United States Army Infantry School provides two specialist courses, the Advanced Marksmanship Coaching Course and the Sniping Course, which are designed to improve their respective phases of the marksmanship program within the Army. These courses are two weeks in length and are conducted twice each year by the Infantry School and members of the United States Army Advanced Marksmanship Unit.

I am convinced that the Trainfire system, while it is designed to accomplish the primary mission of producing effective combat riflemen, also provides for the production of precision and competitive marksmen.

And now I wish to summarize briefly the major conclusions that we have reached concerning the Army's rifle marksmanship program today. Trainfire I provides an efficient and realistic method of training the soldier in basic rifle marksmanship for *combat*. It facilitates the training of large numbers of effective combat riflemen, rapidly and economically. With the addition of the proposed Advanced Marksmanship Course, during the advanced individual training of the Infantryman, it will provide the rifle specialist we need.

Trainfire II, which is now being troop tested, will enable the individual rifleman to function effectively as a member of the rifle squad.

The system provides for the retention of the known-distance facilities and instruction required to implement the advanced marksmanship training and to meet the needs of competitive shooting.

An understanding of the complete Army rifle marksmanship program, as it is being implemented, can leave no doubt as to its superiority over any other system we have had in the past.

Outstanding Army marksmen will participate with civilian sharpshooters in rifle competitions.





Old Jumpers- New Technique

A couple of veteran jumpers discuss the technique of parachuting from our new transport aircraft.

AN early morning chill amplified the high-pitched roar of the carrier aircraft overhead as they broke formation and made their final approach to the landing field. As each plane passed low over Company A's area, the breakfast-table conversation and the sound of rattling pans in the mess hall became inaudible. In the noncoms' mess area, partitioned off from the rest of the dining hall, the steam of hot coffee mingled with an occasional cloud of cigarette smoke.

"When they replaced the C-47 with the C-82 and later the C-119, a lot of jumpers felt they had lost a good friend," said Master Sergeant Louie Davis as he snuffed out his first cigarette of the day. "But it didn't take 'em

long to find out that the 82 and the 119 had it all over the C-47 as a workhorse. Right, Jordan?"

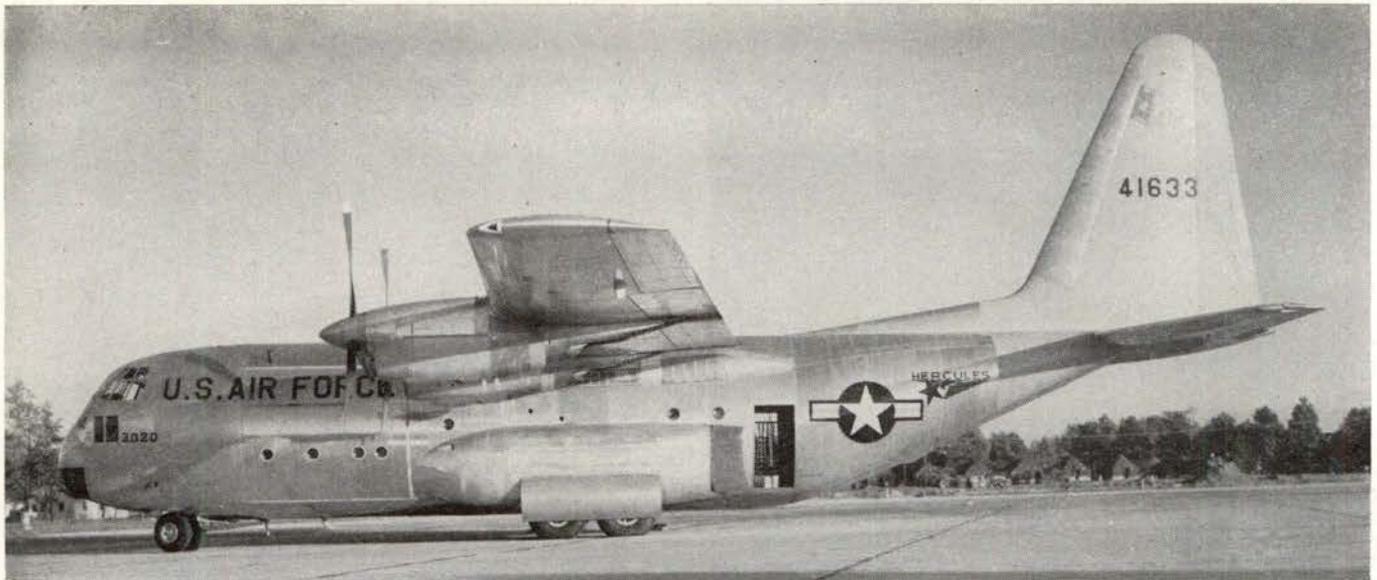
"Yeah, I guess you're right," replied Sergeant Hubert Jordan. "Everytime I jump there's always some bird yearning for the 'good old days.' He doesn't come right out and admit it, but he lets you know that he's gonna jump the left door, even though he's been told one door's the same as the other. Sometimes I think those guys are like gamblers. They believe a change of doors might mean a change of luck. Hell, there's *nothing* left to chance these days! What difference does it make *which* door they use?"

"None that I can think of," said Davis. "I've jumped everything from

the C-33 to those C-130s that just passed overhead, and I've always been able to work with anything the Air Force makes available. Except for a few changes here and there for safety's sake, or to fit the shape of some new plane, jumpers are doing basically the same thing today in the C-130 as they used to do in the C-47. It's the *jumpmaster's* job that's been changed. Pass me the sugar."

"That's what the Old Man said during the briefing for today's jump," remarked Sergeant Julio Caesar. "Seems to me that the jumpmaster of a C-130 has a helluva lot more to do than one man can handle."

"You're right, Caesar," replied Sergeant Davis, "but there are three



The C-130 troop carrier aircraft.

other men to help him do his job — an assistant jumpmaster and two safety officers or noncoms.”

“Then the jumpmaster does the same job he has always done,” said Caesar, “but he delegates some of his duties to his assistant and the two safety personnel.”

“In a sense, yes,” answered Davis. “But responsibility for the conduct of the jump still rests with the jump-

master, who is always the ranking man. Before station time he personally inspects the plane and each man who is to jump, just as he has always done. ‘Course he’ll use his assistant for such things as checking seat belt adjustments and taping sharp edges around the jump doors. But it’s in flight, when he’s about six minutes out from the drop zone, that he really begins to use his help.”

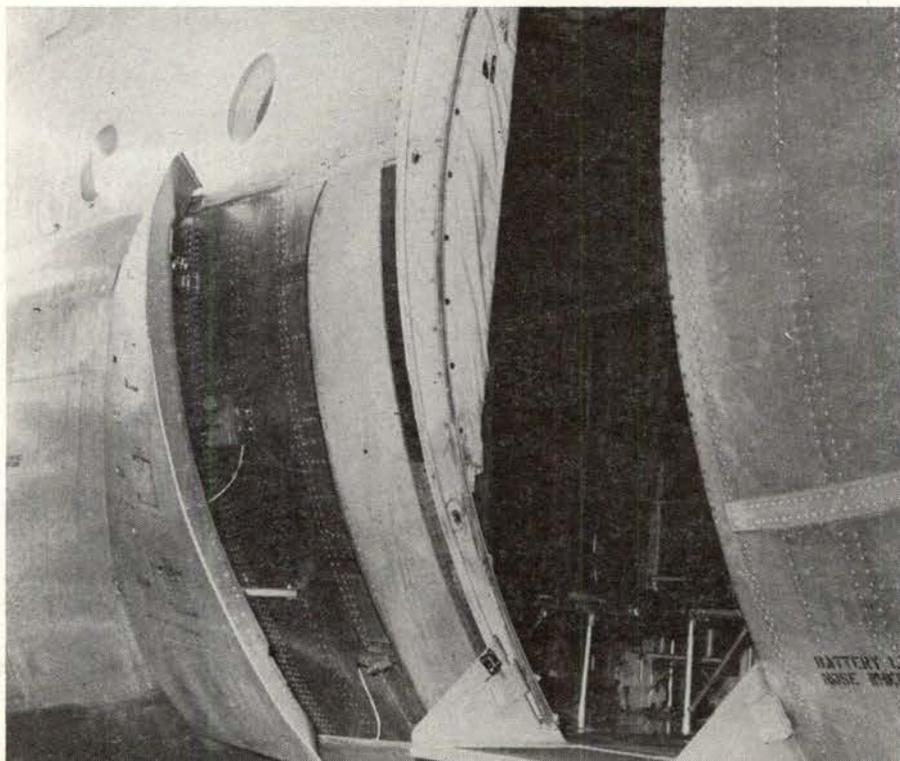
“Whoa, Davis! Since the Air Force is doing the flying, isn’t there some coordination involved before take-off?”

“You bet your bottom buck there is, Caesar,” answered Sergeant Davis. “The shape of the C-130 fuselage requires a jump platform so the jumpers can get a correct door position. The jumpmaster has gotta make sure platforms are available and that they fit securely into the door sill. And since this plane can be pressurized, the pilot will have to let the jumpmaster know when it’s O.K. to open the doors. You can imagine what might happen if the jump doors are opened while the plane is still pressurized. Before the pilot gives the word, he’ll extend the windstream deflectors on the outside of the plane just forward of the doors. The jumpmaster should make sure this is done early enough to allow the jump platform to be positioned, and in time to permit the first man in each stick to take up a door position.”

“Wind deflectors? Say, we’re getting fancier every day,” jibed Sergeant Jordan. “I never thought we’d be jumping at supersonic speed.”

“You won’t, Hubert. Those four turboprop engines are almost idling at cruising speed, and when the pilot wants to slow down to jump speed, he simply adjusts the pitch of the props.

Close-up of wind deflector extended and jump platform in position. The jump platform, a modification on the C-130, is designed to aid the jumper when exiting from the aircraft.



Even so, with the wind deflectors out, there's terrific air turbulence inside the open jump doors. This C-130 calls for nothing less than a vigorous exit — even for you."

"Boy, listen to that one!" threw in Caesar. "Bet he took the chimney off the mess hall! How can anyone in the rear of the sticks hear the jump commands above all that noise?"

"Simple, Julio," answered Davis. "The jump light assembly in the C-130 has an intercom jack, and by plugging it in, the jumpmaster can talk with the pilot. This intercom will broadcast over the PA system. If the jumpmaster wants to address the jumpers, he asks the pilot to switch on the PA system. It's a good idea to check out the jack during the routine inspection of the plane. And once the plane reaches jump altitude, the jumpmaster should get on the intercom. There's always some last-minute change either he or the pilot will want to know about."

"What, for instance?" asked Caesar.

"Well, let's say one of the wind deflectors doesn't work. If the pilot can't get it out where its supposed to be, the jumpmaster may need additional passes over the DZ to drop everyone from one door. The jump-



On signal from jumpmaster, each jumper checks static line of man to his front.

master must be alert to situations like this, and the pilot has to be flexible to meet such problems."

"Say, I noticed that the wheel wells of the C-130 limit outboard seating to only 12 men on a side, while there are 20 men in the two inboard rows of seats," offered Caesar. "Those nine outboard men who are forward of the wheel well sure will have a tight squeeze when they pass between the wheel well and the inboard jumpers."

"That'd be true if you had a full

load and jumped the outboard personnel first," replied Davis, "but you don't do it that way. The problem has been solved by adding a couple of new jump commands and changing the response to one of the old commands. The first command, 'Get ready,' remains the same. The second command is 'Outboard personnel, stand up.' This is done so the outboard personnel can have their seats raised before 'Stand up' is given to the inboard personnel. When both sticks are on their feet and all the seats are in the *up* position, the command 'Hook up' is given."

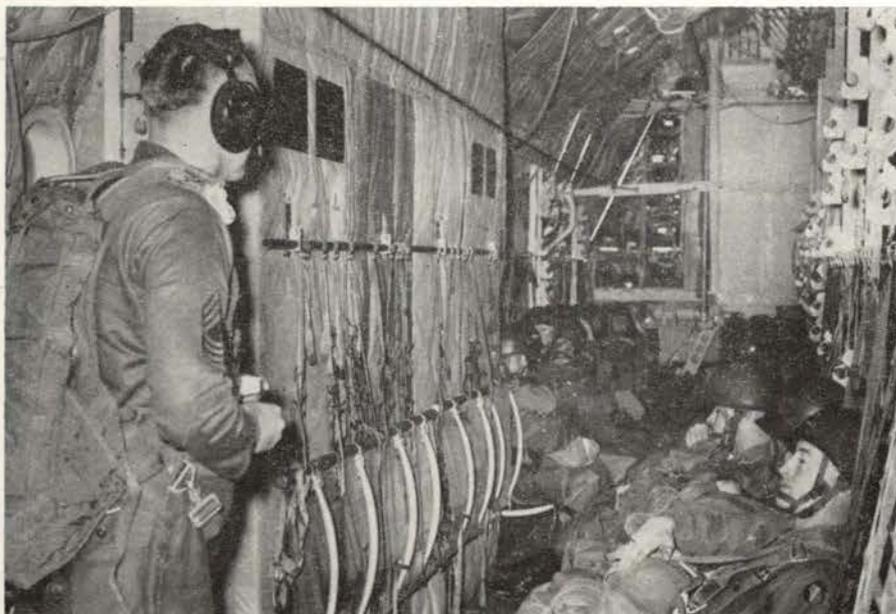
"Hey, back up a minute," said Jordan. "The jumper needs both hands to secure his seat. Isn't there a chance his static line will be fouled?"

"No. The static line is attached to the top carrying handle of the reserve chute, and depending on whether he's seated inboard or outboard, the jumper hooks up to the corresponding anchor line cable. Remember, there are two cables on each side of the plane. But to make sure that the static lines are O.K., 'Check static lines' is given as the fifth jump command."

"In other words," said Caesar, "it isn't necessary to check the static line when 'Check equipment' is given."

"Not so, Julio. On 'Check equipment' all jumpers do exactly what they

Enroute to drop zone, jumpmaster receives information from the pilot by means of the aircraft's intercom system.





Jumpmaster gives signal to jumpers to get ready. During flight the jumpmaster is in complete charge of actions of paratroopers until they exit from aircraft.

have always done, including checking their own static lines. On 'Check static lines,' the man behind you reaches up with his free hand and runs his hand down your static line to the back pack. If he does his job you won't have a misrouted static line or any slack in the line. He also checks your back pack at the same time."

"Why take up all the slack in the static line?" asked Sergeant Jordan.

"Let me go on, and you'll soon understand why," answered Davis. "Be-

fore commanding 'Sound off for equipment check,' both the jumpmaster and his assistant go forward to the end of the sticks. Then when the count begins, they both move back down the aisles and make a final check of the static lines. When everything is in order, what do you think happens, Julio?"

"Stand in the door, naturally."

"Right, but who stands in the door? And when the sticks begin to move after 'Go' has been given, how is the drop pattern maintained? Well, before anyone gets drenched with cold coffee, let me answer these myself. The first three outboard men *aft* of the wheel well exit in order. Then the inboard personnel, who'd be numbered four through 23, follow out. The first of the nine outboard men *forward* of the wheel well, number 24, falls in behind the last of the inboard personnel."

"That sounds real orderly, but isn't it a little difficult to pivot and stand in the door from the number four man's position?" asked Sergeant Jordan.

"It'd take a longer legged man than you are, Hubert, but since you were last on jump status, the short shuffle and pivot into the door has gone the way of the C-47. No pivot — just a shuffling turn."

"If I shuffle into the door without pivoting, I'll have to do a soft shoe dance to get the correct foot forward. Left foot, left door. . . !"

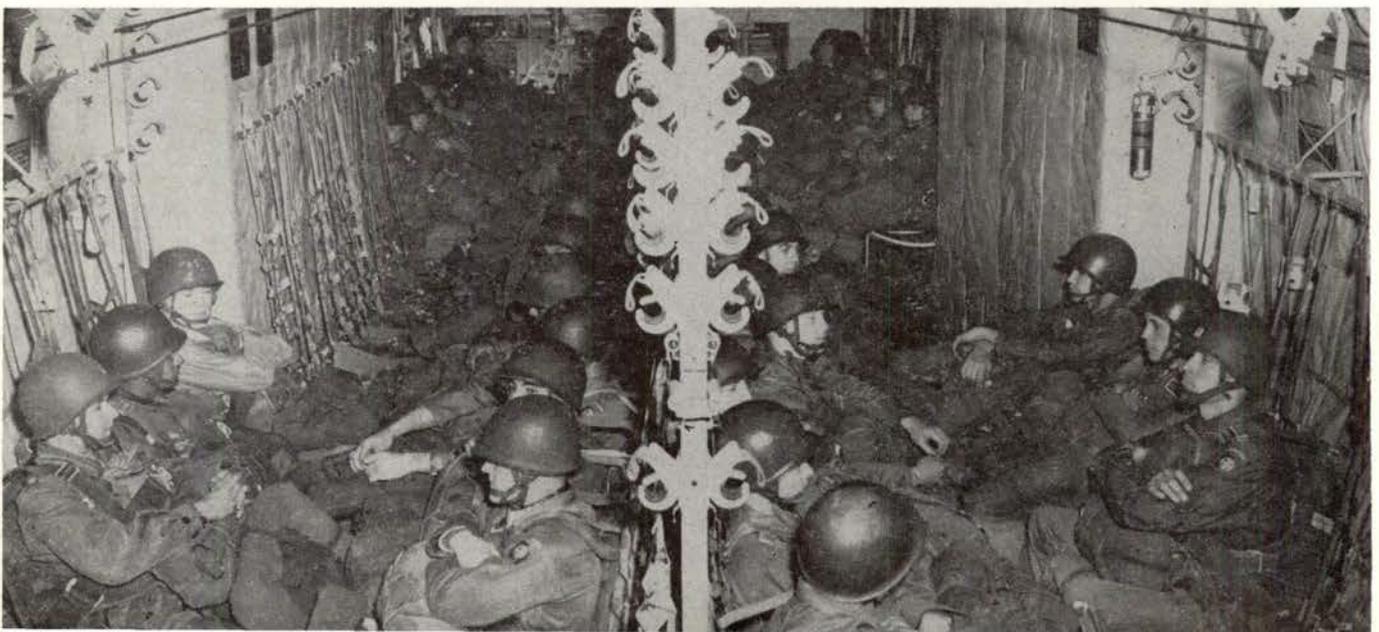
"Hold on now, Hubert. That method had its purpose with the C-47 — so you could execute your turn to the rear when you made your exit. But with the planes and parachute we have today, it makes no difference *which* foot is in the door."

"And now, let's go back to that matter of slack in the static line," said Caesar. "When the men who have hooked up on the inboard anchor line move into the door, they'll pull out a lot of static line anyway—and that's not counting the slack created when they thrust it to the rear. So it seems to me that we've defeated our purpose!"

"Negative, Julio," corrected Davis. "When the jumper approaches the door, he *releases* his static line just before he makes his turn. The jumpmaster grabs the static line and prevents it from being blown toward the man who is following. There's a big wind back near the doors, and if there's already a lot of slack in the static line while the jumper is approaching the door, the man behind him could accidentally get an arm around it or get it tangled around his neck."

"If the jumpmaster is picking up static lines, he won't be able to control the jumpers approaching the door or keep an eye on the jump lights," said Jordan. "He'll have 'em riding each other's back packs, or he'll miss

Fully loaded interior of C-130 troop carrier aircraft—student jumpers relax while enroute to the drop zone.



the light and probably drop some of them off the DZ.”

“That’s why we have a safety officer or noncom at each door during training jumps,” countered Davis. “It’s his job to slow the stick down when necessary. He has to check each man as he passes, making sure there’s no fouling of static lines, and he has to keep an eye out for the red light.”

“Davis, you seem to know all the answers about exiting from jump doors, but what can you tell us about aft-end exits?” asked Jordan.

“You’re talking about jumping behind heavy equipment, aren’t you?”

“Exactly,” answered Jordan.

“Well, the procedure is no different in the C-130 than in the C-119. Since only one stick can be dropped at a time, you use just one anchor line cable. You can use either inboard cable. Just aft of the jump doors there’s an anchor line support bracket which can be disconnected and secured to the top of the fuselage. All the jump commands for jump-door exiting apply to aft-end jumping. The only difference is that the jumpers stand inboard of the anchor line cable while their static lines pass over their outboard shoulders.”

“And from then on I suppose it’s just like walking the plank,” added Jordan. “Once the jumpers have exited, how does the jumpmaster retrieve the static lines and deployment bags without taking a chance of falling off the ramp?”

LT FRITZ BERNSHAUSEN entered the Army as an enlisted man in 1946 and served on occupation duty in Italy and Germany. Six years later he received his commission upon graduation from OCS at Fort Benning. Upon completion of the basic airborne course at the United States Army Infantry School in 1952, he served with the 504th Airborne Infantry Regiment at Fort Bragg. Later he served as a platoon leader and as a company executive officer with the Iceland Defense Command. Last year Lieutenant Bernshausen was assigned to his present duties with the Airborne-Air Mobility Department of the Infantry School.

“The C-130 has a hand-operated static line retriever, with a piano wire running through a series of pulleys,” answered Davis. “But after some of the aft-end jumps we made, the wire broke when the jumpmaster tried to retrieve the lines. So he had to climb up the inside of the fuselage toward the tail to secure a rope around the static lines to get ’em back inside the plane. One solution to this is to forget about the piano wires. Instead, snap a 15-foot static line to the anchor line cable. Then tie the running end of the static line to a tiedown in the floor of the plane. When everyone has exited, this static line serves as a good retriever. There’s not much chance of it breaking, either.”

“If that’s a problem, why not let the personnel go out the jump doors after the heavy equipment has been dropped?” asked Sergeant Caesar.

“That’s a thought, but with the ramp open, the prop blast coming in

through the jump doors would be terrific. The jumpers *could* get a door position, but they’d have a helluva time getting out. Anyway, we don’t have to worry too much about retrieving static lines because I’ve got some advance poop on a powered static line retriever for the C-130 which is now being tested.”

“Davis, you’ve jabbered on and on about what happens *before* leaping, but not a word have I heard about what happens *after* the big step,” said Jordan.

“You’re fishing for jump stories now, Hubert, so let’s wait until after today’s jump. Then you tell me yours and I’ll tell you mine,” said Sergeant Davis, rising and reaching for his cap.

“Another thing, Davis. Besides the jumps we’ve already talked about, is it possible to go out the forward cargo door?” asked Jordan.

“Don’t make me laugh,” answered Davis, “my lips are chapped.”

STRATEGIC ARMY CORPS (STRAC)

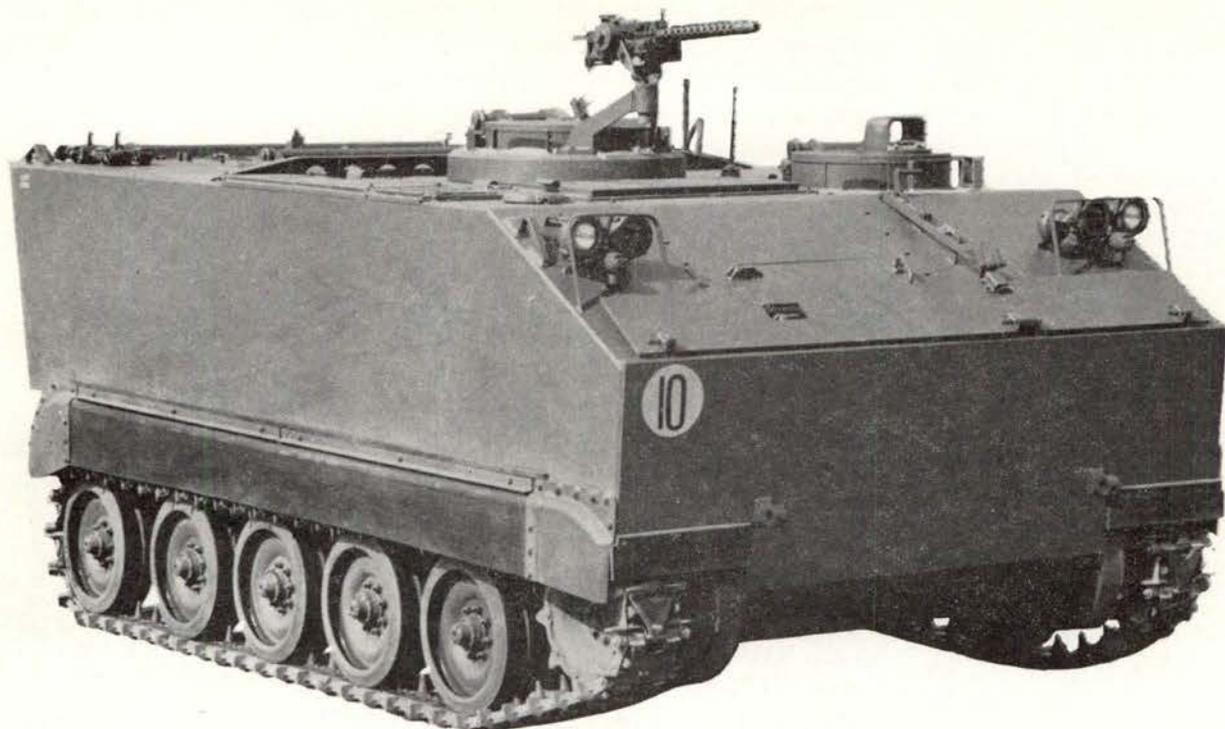
The Department of the Army has announced the organization of a combat-ready striking force composed of two airborne and two Infantry divisions called the “Strategic Army Corps (STRAC).” It is specially tailored to move swiftly to potential trouble spots anywhere in the world and to deal with limited wars.

STRAC is designed to meet the initial requirements of

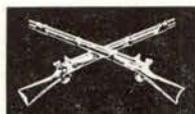
limited war or provide immediate reinforcements for a general war. Its mission is to be operationally ready on a moment’s notice.

The new force is presently composed of Headquarters XVIII Airborne Corps, Fort Bragg; 101st Airborne Division, Fort Campbell; 82d Airborne Division, Fort Bragg; 4th Infantry Division, Fort Lewis; 1st Infantry Division, Fort Riley; and supporting units.

STRAC’s effectiveness and speed of movement are dependent on the availability of adequate air and sea lift. The force’s slogan is—“Skilled, Tough, Ready Around the Clock”—STRAC.



Put the Infantry



THE course of events can take many a strange twist in this high-speed century. An alert cameraman could record many a startled face by being on the scene when workers arrive some morning to find their firm has been moved ten blocks uptown.

Even in military affairs, great and small, a soldier may be presented with proposals or even decisions which leave him open-mouthed and wondering what is the matter with his ears. "Certainly, they can't mean that!" Unfortunately, they not only can, but do; and often it is too late to do anything about it.

Perhaps not the most critical *fait accompli* presented to Infantrymen lately, but certainly an irritating one and one that appears inexplicable to them, is the assignment of the Infantry personnel carrier — vehicle,

driver and unit—to the Transportation Corps.

Like every other citizen in this age, the Infantryman has become fond of transportation, not only because he likes to ride but because it is as essential to his operation in modern warfare as his combat boots. He is fond, also, of the Transportation Corps, for it carries him efficiently in ships, planes, trains and trucks. He appreciates the rations, ammunition, clean clothes, cigarettes, gas and mail which reach him by courtesy of efficient transportation units. And, as he rides along the MSR in trucks of these units, he realizes that the modern Army could not maintain itself around the world without the highly developed means, methods and professional accomplishments of the Transportation Corps.

The lightly armored personnel carrier is a tactical vehicle that will be as essential to the Infantryman's conduct of tactical operations on the modern battlefield as his combat boots. This vehicle must belong to the Infantry and must be driven by an Infantry driver.

car in the Infantry garage!

However, the Infantryman is a realist who distinguishes between transportation and combat mobility. While the armored personnel carrier is capable of transporting ammunition and rations and can be used to evacuate casualties in fast-moving situations, its primary mission is to provide protected mobility for rifle and weapons squads in frontline combat. In essence, the carrier is a weapon and it must be treated as such.

The area in which the outstanding experience and skills of the Transportation Corps are most effective is in the communications zone and the rear areas of the combat zone—not in the frontline combat arena. The control and operation of a fighting vehicle is a function without precedent among transportation units.

To understand the Infantryman's

concern it is necessary to consider his need for carriers and the manner in which he will use them. The weapons now available for warfare create a dilemma. If combat forces concentrate, they risk destruction from atomic blasts. If they remain dispersed, they invite defeat in detail and lack offensive punch. Yet Infantry units *must* come together in sufficient strength to strike and defeat the enemy both in offensive and mobile defensive operations. The only solution to these conflicting requirements is great mobility so that units can move rapidly to concentrate at the last possible moment and then to disperse again, just as quickly, when an objective has been taken. Frequently, this concentration and dispersion must occur over areas swept by enemy fire or contaminated by nuclear bursts. Foot mobility will

not suffice. The Infantryman must be able to travel rapidly under such conditions and come out fighting. At times he may be required to accomplish some firing while he is still mounted. These are the requirements which establish the Infantryman's need for the carrier.

The need is expressed by field commanders who are working with and testing the pentomic Infantry organization. As they become more familiar with the new division, they voice increasing dissatisfaction with the present assignment of carrier units to the Transportation Corps. This feeling is expressed clearly in the following comments by a senior overseas commander: "The establishment of the transportation battalion as a Transportation Corps unit does not seem . . . logical to me. The battalion is

composed in large part of armored personnel carriers designed to carry Infantry into battle. Accordingly, there must develop the closest association and teamwork between the battalion and the Infantry battle groups. The battalion must also have competency in Infantry tactics and Infantry-armored type operations. It seems, therefore, that the transportation battalion should be an Infantry unit in the Infantry division rather than a support unit. Its primary role is directly related to combat rather than to transporting things and people. . . ."

Assignment of the carrier to the Transportation Corps exposes the Transportation Corps driver to all of the hazards of the Infantryman without giving him the training to survive as an Infantryman. When the Infantry squad dismounts, the driver, or the assistant driver if there is one, will be required to man the .50-caliber machinegun. He must be ready and able not only to protect his vehicle but to cover the dismounting fire teams and, if necessary, to support their attack. And he must know more than just *how* to fire the weapon. He must know when and where to fire it to best support the squad. If the carrier becomes inoperative, he must join the squad and fight with it. In such a situation he will want to feel that he is a part of the team—not an outsider

left to shift for himself. Actually, he *must* be a part of the team; his own security and that of the squad depend on it.

To perform effectively with a rifle or weapons squad, the carrier driver must receive more than basic training. He must have, in addition, the advanced individual and unit training of the Infantryman. He must have a thorough knowledge of Infantry tactics, of squad and platoon formations. He must have a keen eye and a good appreciation of terrain, not only for its trafficability but also for its tactical aspects. He will not be driving on roads, in convoy. He must be adept at ground navigation, and he must know how to take advantage of cover and concealment, both while moving and while stationary. Finally, and probably most important of all, he must be aggressive by nature and strongly imbued with the "Follow Me" spirit. In short, he must be an Infantryman.

The members of the Infantry squad have a very real concern in this matter. Their mission and security are tied to the carrier. They must have confidence in the driver, not only as a carrier operator but also as a fighter. They do not consider themselves a load of cargo to be unloaded and abandoned. The carrier is more to them than a track-laying taxi. They depend upon it for protection and consider its .50-caliber machinegun as

another vital weapon to help them when the going is rough. The man who fires that weapon must think and act as they do.

Infantrymen cannot understand why the carrier driver should belong to another branch of the service any more than they could understand the assignment of someone from the Ordnance Corps to fire their squad weapons. They may tolerate such an arrangement in peacetime, but in combat, when their lives are at stake, they want another Infantryman on the team. They want a man who not only will take orders from the Infantry team leader in the carrier, but who will understand those orders and the reasons for them. Since all organization and training is designed for one purpose—combat—they want him on the team now!

Assignment of the carrier to the Transportation Corps poses training problems and generates a number of questions: Who will give the Transportation Corps driver and the carrier unit commander the Infantry training they must have? Perhaps the Transportation Corps driver and carrier unit commander will be sent to Infantry schools. If this is done, how many officers and drivers will be trained? Will there be sufficient to insure trained replacements at all times, or will commanders and drivers turn up during critical periods of combat without Infantry training? What effect will this have on the success of Infantry units?

On the other side of the coin, Infantry personnel must be trained to drive and maintain the carrier. If the Transportation Corps driver becomes a casualty, members of the Infantry squad must know how to drive the vehicle and to perform the necessary driver maintenance to keep the vehicle in operation. Will the Transportation Corps undertake the instruction of large numbers of Infantrymen in these subjects? More likely, the Infantry will be required to give this instruction, and it can do it quite well. Vehicle driver and maintenance training is not new to the Infantry. Cer-

COL FRANK M. IZENOUR was graduated from the United States Military Academy in 1938. During World War II, he served in North Africa with the 7th and 30th Infantry Regiments of the 3d Infantry Division, and in 1944 he was named commanding officer of the 7th Infantry. Following a tour as assistant G1, Headquarters, Army Ground Forces, he entered the Command and General Staff College and upon graduation was appointed an instructor at the college. Afterwards he was graduated from the Armed Forces Staff College and was assigned to Trieste United States Troops. Returning to the United States he attended the Army War College, following which he was assigned to the Military Personnel Management Division, Department of the Army. He then went to Korea where he served as G3, Eighth U. S. Army, and later as commander of the 17th Infantry Regiment. Last year Colonel Izenour began his current tour at the Infantry School as Group Chief in the Tactical Department. He is now director of the Command and Staff Department.



tainly, it is easier and quicker to train an Infantryman to drive and maintain a carrier than it is to train Transportation Corps drivers in the skills of the combat Infantryman. The Infantry, both by necessity and as insurance, will be in this business anyhow, no matter who drives the vehicle, so why not have an Infantry driver to begin with? Let's assign this vehicle to the combat arm where it belongs!

Many Infantrymen feel that the carrier should be organic to the battle group. Current tactical doctrine visualizes that carrier mobility will be a habitual requirement in battle group combat operations. Assignment of the vehicle at this level would provide flexibility and would permit its attachment to the companies. In turn, the company could attach the carrier to platoons and squads according to the requirements of the tactical mission. However, this recommendation may not be practical—at least not at this time, since the carriers now organic to the Infantry division will lift little more than one battle group. Unless the number of vehicles is substantially increased, there would not be enough to permit assignment at this level.

To be completely realistic, the Infantryman goes along with the pooling concept of the pentomic organization,

provided the Infantry division can count on corps or army units to provide additional carriers when they are needed. Until such time as the number of carriers in the division is increased, they should be pooled at division level and attached to battle groups as required.

The present division organization could be modified in one of two ways. The transportation battalion could be redesignated as the "tactical transportation battalion" with an Infantry commander and staff. The two carrier companies could be designated as "tactical carrier companies" with all personnel being Infantry. The truck transport company could be retained in the battalion as a Transportation Corps unit, since its role is essentially a transportation role. This arrangement would not conflict with the concept of integrating arms which now exists in other areas within the new division.

Another solution would be assignment of the two carrier companies and the truck transportation company to the division trains. This should pose no great problem, and the span of control of the trains commander would not be taxed. The maintenance sections of the present transportation battalion could be given to the forward support company of the ord-

nance battalion. Maintenance sections could be attached to appropriate direct support platoons to provide the necessary organizational maintenance when the carrier companies are attached to battle groups. The transportation section of the transportation battalion could be given to the division G4, and other administrative functions of the transportation battalion could be readily absorbed by the administration company of the division trains.

Either method would make the carrier companies Infantry units instead of Transportation Corps units. Their mission would be essentially the same as other Infantry units, "to close with and destroy the enemy," and their personnel would be trained as Infantrymen.

What the Infantry commander really needs is an arrangement similar to that found in the Armored Infantry battalion. That unit uses the same carrier and employs it in a similar tactical role. It has been found that the carrier operates most effectively when it is integrated into Infantry units.

Studies and trends toward future reorganization indicate that the union of Infantryman and carrier will become an even firmer entity, an even happier marriage. Interim solutions, naturally, should take cognizance of this trend. Let's not get Infantry mixed up in trying to operate Transportation Corps truck companies, but let's put the Infantry carrier in the proper garage, the one marked INFANTRY.

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.

When all is said and done, one fact stands out supreme and unassailable. It is this. You can't have a good Army without good Infantry. Whatever changes loom ahead in the organization of the Army, due to economic pressure or other factors, this great truth must never be forgotten.

FIELD MARSHAL VISCOUNT MONTGOMERY OF ALAMEIN

NEW and dramatic weapons have all but obscured some of the commonplace but very real problems which confront Infantry units. Not the least of these problems is the tremendous administrative burden of the company and battery commander. Saddled with reports of survey, statements of charges, property books, files and an infinite number of other time-consuming supply activities and records, the commander has been an administrative workhorse. Frequently he has been forced to devote more energy to the preparation and handling of paperwork than to his primary function of command.

In an effort to eliminate some of this administrative workload, Department of the Army has published a new garrison supply regulation, AR 735 - 35. This regulation simplifies supply procedures at company and battery level and provides for an efficient battle group supply system which will work in garrison as well as under field conditions. It is simple and sound and will reduce supply administration considerably, if battle group commanders, supply officers and other individuals charged with its implementation will adhere to the spirit of the regulation. Since the AR leaves some latitude for interpretation, it is necessary to understand how the new battle group supply system differs from previous systems. It is necessary also to appreciate fully the intended implications of the regulation.

Under the new regulation, company and battery commanders no longer have informal accountability or, in other words, the obligation to maintain supply records. Only one officer in the battle group now has informal accountability: the property book officer. This officer, therefore, becomes most essential to the efficient operation of the entire battle group supply system. Although not specifically directed by the regulation, the battle group S4 is best qualified to perform this important function.

With minor exceptions, there is no requirement or necessity for formal-

The new garrison supply regulation leaves latitude for interpretation. To take full advantage of the simplified system, commanders must adhere to the spirit of the AR.

GARRISON SUPPLY

By Capts Chandler Goodnow & Benjamin G. Spivey

type supply records at unit level, and in implementing the regulation, instructions should neither require nor suggest the maintenance of such records. Simplicity must be the keyword when policies and standing operating procedures are prepared and distributed.

Although his administrative burden has been reduced, the unit commander still has a very definite supply responsibility. He must continue to exercise command responsibility for property. There are several ways in which he can perform this function efficiently and with comparative ease. First, he must place more reliance on the word of his subordinates and less emphasis on protective - type paperwork and information copies of supply transactions. Second, by thoroughly training his personnel in their duties and by conducting scheduled and unscheduled inspections, he can ensure that the required amount

of property is on hand and that it is in serviceable condition. And finally, by personal contact or telephone conversation with personnel of the battle group supply section, he can determine that requisitions for authorized property have been submitted.

The new regulation clearly provides for property to be issued directly from the property book officer to the user by means of a multiple-use hand receipt (DA Form 2062). The term "user" must *not* include the company or battery commander. If the spirit of the regulation is followed, unit property will be receipted for by the executive officer, platoon leaders or section leaders. Extra copies of these hand receipts will not be provided for the unit commander, for if this is done, the commander will soon be back in the supply administration business as he was under the old system. One record could mushroom into several, and it is conceivable that

eventually the unit would have informal property books, component parts annexes, records supporting entries to the property books and information copies of other supply activities. To accomplish the purpose of the new regulation, this must not be allowed to happen.

The multiple-use hand receipt, which will record transactions between the property book officer and the user, will indicate end items.¹ All components will be listed on an annex, so the user will know exactly what is authorized and what is charged to his account. The user can control his supplies and equipment by leadership and supervision, but paperwork between the user and his subordinates must be vigorously discouraged.

A further change in supply procedures concerns the requisition and turn-in of property. Such activity will now be accomplished informally by personal contact or over the telephone. The initiation of formal paperwork by the user is neither necessary nor required. Furthermore, the unit headquarters is not authorized the equipment or the personnel to perform this task, and it should not be demanded.

Under the new regulation, adjustment documents will be prepared and processed by the battle group supply section. However, the person who has signed for the property will provide the property book officer with the pertinent details surrounding the loss, damage or destruction of the item. Also, since accountability is maintained only at the battle group, there is no necessity for the unit to keep final-action or suspense copies of reports of survey, schedules of collection or statements of charges.

Another deviation from long-established supply procedures is the new method of issuing organizational clothing and equipment (Table of Allowance 21 items). Two methods are authorized. Under the first and easier

method the newly assigned individual is outfitted and equipped at a central issue facility which normally will be operated by the post or installation quartermaster. All items which the individual receives are entered on the organizational clothing and equipment record (DA Form 10-102). The abstract of issue is retained by the central issue facility, and a completed DA Form 10-102 is forwarded to the individual's unit commander. Subsequent issues will be provided by the central issue facility on an exchange or replacement basis. Neither the unit nor the battle group will have informal accountability for property issued by this method.

Under the other method, which is less desirable, the soldier reports to his unit, where a showdown inspection is made to determine what he needs, and the property book officer requisitions and issues the necessary organizational clothing and equipment. The property book officer does not assume informal accountability for these items. If he maintains stocks of organizational clothing and equipment for issue to individuals in the battle group, he records the balance

on the organizational property book and thereby assumes informal accountability of them. Accountability is subsequently terminated when issues are made to individuals and the issues are recorded on the individual's organizational clothing and equipment records.

In both instances the commander will continue to exercise command responsibility. He must ensure that the property in his unit is being properly serviced and maintained. But he is no longer burdened with stocking, storing and issuing organizational clothing and equipment, and this fact should reduce his supply administration by at least 30 percent.

To simplify accounting procedures, the unit executive officer should receipt for the TOE property of the unit headquarters, to include such items as vehicles, communication equipment and field ranges. He should also receipt for the installation property authorized by tables of allowance, such as wall lockers, foot lockers, cots and sheets, and for the small arms authorized for individuals of the unit. The installation property and the small arms may then be issued to the individual users and the appropriate entry

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CAPT BENJAMIN G. SPIVEY received a commission upon graduation from North Georgia College in 1950. He then completed the Associate Company Officers Course at the United States Army Infantry School, following which he was assigned to the 5th Regimental Combat Team in Korea. Returning to the United States, he served with the 47th Infantry Division at Camp Rucker and later at Fort Benning, where the unit was redesignated the 3d Infantry Division. Two years ago he attended the Advanced Course at the Infantry School and subsequently was assigned as an instructor with the Logistics Committee of the School's Staff Department. He is currently with the Fundamentals, Review and Doctrine Committee of the Command and Staff Department.

¹An end item is the final combination of end products, component parts and/or materials ready for its intended use. A 1/4-ton truck with all its component parts and OVM is an end item.

may be made on their organizational clothing and equipment records.

The new supply regulation requires only three types of records to be maintained at the unit level: the personal clothing record (DA Form 10-195), the organizational clothing and equipment record (DA Form 10-102) and the multiple-use hand receipts (DA Form 2062). Certain other records, such as work order requests, laundry and dry cleaning records, requests for gratuitous issues and inventories of the property of absentees, will be necessary to ensure efficient operation. But even so, unit records are held to an absolute minimum.

Because of this reduction in paperwork, it might seem that the unit supply sergeant would no longer be required in garrison. However, such an assumption is incorrect. The supply sergeant is still an essential element in the supply chain. He must maintain the personal clothing records and the organizational clothing and equipment records. He is responsible for supervising maintenance and for controlling the storage and security of weapons and property belonging to absentees. He provides technical assistance to personnel who are issued equipment on hand receipt, he processes laundry

and dry cleaning and he initiates work order requests. Furthermore, the supply sergeant provides liaison between the unit and the battle group supply section.

Army thinking today is directed toward simplicity, increased efficiency and ease of operation through the reduction of administration. The new regulation will reduce company and battery supply administration to a bare minimum and will provide garrison supply procedures which are simple and effective. The commander can actually be a commander rather than an administrative workhorse.

PRE-COMMISSION EXTENSION COURSE

Beginning 1 July 1958, the United States Army Infantry School will offer a revised Army pre-commission extension course. The revised course closely parallels the resident Infantry Officer Candidate Course. It covers basic military subjects which are common to all branches of the Army and which are required for appointment in the grade of second lieutenant of a reserve component. The course is administered for all branches by the Infantry School.

The revised course will consist of 18 subcourses with a total of 306 credit hours, in contrast to the present pre-commission course consisting of 15 subcourses with a total of 231 credit hours. Only three subcourses in the present pre-commission course will be retained in the revised course. Some of the subcourses in the present course will be revised and included in the revised version while others will be eliminated entirely. Subjects eliminated are those presented elsewhere in the student's military training program.

The revised pre-commission course embodies the latest technical and tactical doctrine taught at the Infantry School and in other branches, including instruction in company tactics and tactics of Armor and Artillery units of comparable size.

At present, there are approximately 44,000 students enrolled in the current pre-commission course. Of this number, approximately 20,800 are National Guardsmen, 9,400 are in the enlisted reserve, and 13,800 are active Army personnel. Numerous enlisted men enroll in the pre-commission course to improve their professional knowledge and enhance their opportunity for promotion. Many of the reserve and National Guard units require completion of the pre-commission series as a prerequisite for promotion within the noncommissioned officer grades. The revised pre-commission course should attract many more students because of its even greater value.

Personnel enrolled in the current pre-commission course prior to 1 July will receive credit for courses completed. After 1 July they will be phased into the new pre-commission course by substitution of appropriate subcourses in the new course as they become available. However, these individuals will be given a certificate of course completion upon satisfactorily completing 15 subcourses, which will include those satisfactorily completed under the present pre-commission course and appropriate substitutions made by the Infantry School after 1 July.

Information concerning application for enrollment in the pre-commission course, as well as other Army Extension Courses, is contained in AR 350-60 and DA Pamphlet 350-60. Further information can be obtained by writing the Commandant, United States Army Infantry School, ATTN: Director of Army Extension Courses.



DEATH TO THE TANK!

An officer of the French Army discusses the remarkable SS10 and SS11 guided antitank missiles which will enable the frontline Infantryman to destroy the tank and perhaps drive it from the battlefield.

By Lt Col Albert A. Merglen

THE French Army has developed, and is now equipped with, a weapon which spells doom for that deadly foe of Infantrymen—the tank. This is an accomplishment of major significance for France and one that should be of great importance to all nations of the Free World.

Our security is threatened by a huge Soviet Army with at least 60 tank-heavy mechanized divisions and more than a hundred other divisions with large numbers of self-propelled guns and tanks. We could not expect the Infantry of the Free World to face

such overwhelming Red armor without a really effective means of combatting it.

It is not surprising that the French Army has produced what is considered to be the world's best weapon for destroying armor, because we have good reason to fear the tank and to concentrate on its destruction. By bitter experience we learned a lesson in World War II which will never be forgotten. During a brief period of six weeks in 1940, more than 100,000 courageous French soldiers were overrun and killed because they simply did

not possess the means to stop the German tank.

Spurred by painful but vivid memories of that black period, and by the threat of Soviet armor, France has put much study and effort into the development of a light, accurate and reliable antitank weapon. We now have such a weapon in the SS10 and SS11 guided antitank missiles.

Before we discuss these weapons and their employment, it may be well to consider briefly the Infantry's problem of antitank defense. Reduced to its simplest terms, the problem is es-

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essentially to prevent the bulk of enemy armor from penetrating positions, passing between dispersed units, or going around them to overrun rear areas. To prevent this the Infantry must be able to kill the tank as it crosses its line of departure or while it is 1500 to 2000 yards away. At the present time most of the Free World armies lack such a weapon.

True, most armies have antitank guns of some sort, and a few have recoilless antitank weapons. But these weapons have numerous disadvan-

tages and are inadequate to defeat the awesome concentrations of armor which we may have to face in any future war. The antitank gun, particularly the tank-mounted gun, is cumbersome and expensive. It is not always possible to employ the gun or even the recoilless rifle as far forward as may be necessary. Furthermore, these weapons fire only on a straight line, and they are rapidly detected by their flash or backblast. It is relatively easy for enemy tanks, by working together and by utilizing Infantry

support, to put them out of action. And we cannot rely too heavily on the smaller, portable rocket launchers. These are really last-ditch, self-defense weapons for the Infantryman. They are not efficient in providing antitank defense for a position or a unit.

The weapon that will defeat the tank and drive it from the battlefield must have exceptional capabilities. It must be able to reach a tank over obstacles and at ranges of 1000 to 2000 yards. The weapon must be lethal to any known or likely enemy armor and must be capable of being fired by a concealed Infantryman using only his eyes or binoculars. It must be capable of guidance to a sure hit, irrespective of the target's speed or the manner in which it maneuvers. And it must be launchable from a hidden emplacement in such a manner that the target is hit without the enemy seeing the firer, the location of the weapon or any telltale markers such as flash or backblast. All of these and other desirable capabilities are provided by the SS10 and SS11.

The SS10 and SS11 get their name from the words "sol-sol" which in French mean "ground to ground." Both are lightweight missiles for use against ground targets and are especially designed for use against enemy armor. Actually, they may be con-

SS10 guided missiles. The missile in flight has just been fired from the transport and firing box on the left.



sidered as one weapon. They differ only in weight and range.

The SS missile requires neither a gun nor a heavy mount. It is launched from a very light ramp or from the special firing box in which it is transported. The flight of the missile is controlled by a firer-operator who can fire it and guide it all the way from the launching site to the point of impact on the target. However, when the operator is more than 30 meters from the launching site, he gives a fire order to the assistant operator who is near the weapon. The operator then guides the flight of the missile to the target. Guidance is effected by an electronic remote control gear and wires. This is an important feature, since the guidance system cannot be jammed by the enemy, and the firer-operator need not be at or near the weapon. The missile can be located at a hidden site in a trench or ravine and controlled by an operator in a forward position or observation post. It also permits the weapon to be launched from a ¼-ton truck, an armored carrier, or other vehicles. The operator may be in the vehicle or on the ground. The missile may also be mounted on, fired and controlled from a helicopter or a slow-flying fixed-wing plane.

The missile is rocket-propelled and

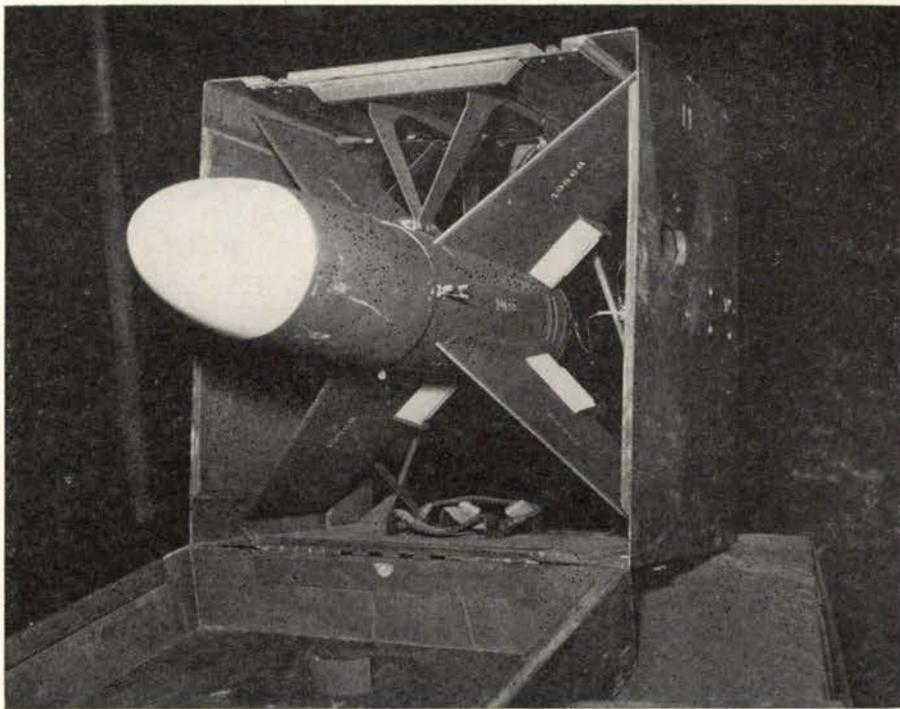
flies on cruciformed wings or fins. It is not a large weapon. While it measures about three feet in length and 2½ feet from wing tip to wing tip, it can be separated into two pieces, and it fits easily into its special transport and firing box, which is approximately two feet in all three dimensions. The SS10 has a normal range up to 1650 yards, and the SS11 has a range of more than twice that dis-

tance. The total weight of the SS10 and its box is approximately 70 to 90 pounds, depending upon the type of missile and warhead. The SS11 with its greater range capability is a little heavier.

The warhead of the missile contains a shaped charge which will pierce the armor of the heaviest tank.

The training of Infantrymen to fire and control the missile is not difficult. After one month of instruction the average French draftee hits eight out of 10 moving tanks at ranges up to 1650 yards. He does not need special prior knowledge or background. The only particular requirements for a successful firer-operator are good eyesight and good coordination. The cost of this weapon, particularly when it is produced in large quantities, is quite reasonable.

The SS10 is now organic to French Infantry units. It is found in both the motorized Infantry division and in the light mechanized division. In the motorized division it is combined with ¼-ton-truck-mounted 105mm recoilless rifles in the two antitank platoons of the heavy weapons company. One such company, which also con-



The SS10 in its transport and firing box.

Helicopter-mounted SS10s. The missile may also be mounted on, fired and controlled from slow-flying, fixed-wing planes.



tains two 120mm mortar platoons, is organic to each of the five battle groups of the division.

The light mechanized division, which has an armored reconnaissance regiment, two mechanized regiments and one motorized Infantry regiment, has eight specialized SS10 companies—two in each of the regiments. Each of the companies has a command platoon, three antitank platoons and an engineer demolition platoon. The SS-10, along with machineguns and rocket launchers, is found in the antitank platoons.

The French Army has conducted many studies and experiments with this new weapon and has developed many uses for it other than its anti-

tank role. Actually, the tasks which it can perform seem to be limited only by the imagination of the commander. There are many organizational and employment possibilities.

The SS missile has the range, accuracy and lethality for use as a pinpoint weapon against such targets as pillboxes, command posts and artillery batteries. In a war of movement, with units dispersed over wide areas, it is ideal for employment from helicopters and fast-moving, lightly armored vehicles to infiltrate enemy positions. In some situations it might be utilized as an anti-atomic weapon against enemy ground launching installations. Airborne and guerrilla forces certainly will find many uses

for such a lightweight, long-range and deadly accurate weapon.

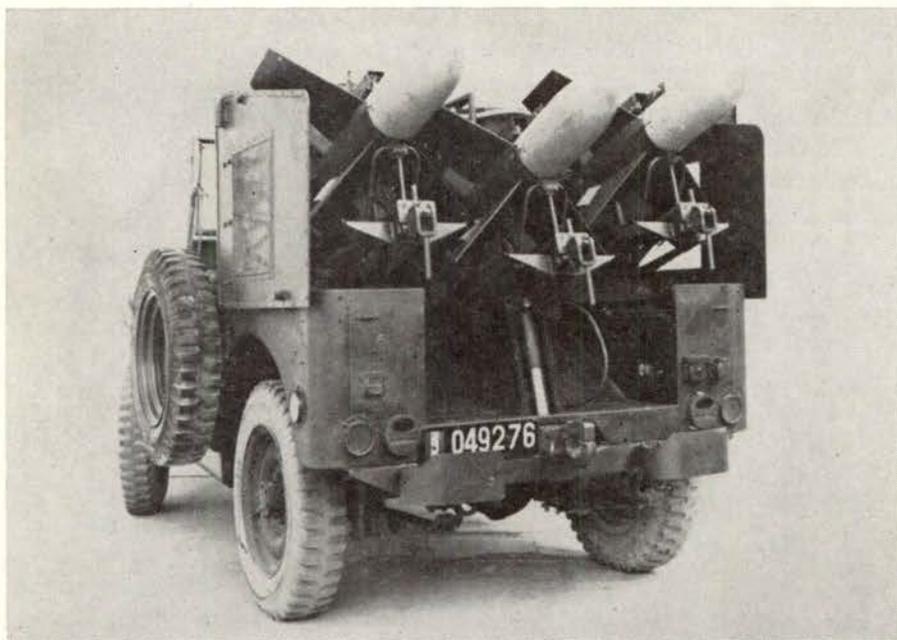
These weapons are so light and so small that they can be used in any kind of terrain. And they are so accurate that they will help to solve some of our logistical problems. Since the missiles can be guided to a sure hit—one missile, scratch one tank—they can reduce the need for large numbers of conventional shells and bombs.

The development of the full potential of SS missiles has barely started. At present they are fired and guided by an individual Infantryman who must see the target with his own eyes or with the aid of binoculars. But we can expect that this capability will soon be augmented. In the future we may have a whole family of SS weapons which can be guided through battlefield television, by surveillance drones or other means.

These weapons could be a valuable asset for the Western Allies, particularly for the members of the North Atlantic Treaty Organization. The development of the SS10 and SS11 is a good example of the "community of brains" which is so important to the Free World. By adopting the best weapons and the best techniques produced by the various partners, we can thwart Soviet aggression and strengthen our security.

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.

Truck-mounted SS10s. The missile may be launched from ¼-ton trucks, Infantry carriers or other vehicles.



SKY DIVING NOW AUTHORIZED

An article on "sky diving," titled "Stabilized Free Fall," in the January 1958 issue of *Infantry* magazine stated that Army personnel are prohibited by regulations from par-

ticipating in competitive and exhibition parachute jumping. A new regulation has now been published by Department of the Army which will permit Army jumpers to participate in such activities. Readers who desire to obtain additional information on this subject should consult AR 95-19, "Aviation," Department of the Army, dated 11 April 1958.



A New Lift for the Infantryman

*This new personnel carrier is being tested by the Infantry.
Small, amphibious and air transportable, it will give the Infantryman
protected mobility on the modern battlefield.*

By LT COL EDWARD H. SIMPSON

IN all the history of warfare the Infantryman has run, walked or crawled to meet and defeat his enemy. His primary means of locomotion has been his own two feet. Sure, he's gotten rides as far forward as the assembly area on transportation ranging from the elephant and the horse to the 2½-ton truck and the jeep—but the rest of the way has been by "Shank's mare." Now the foot soldier is about to get another lift. Not just to the forward edge of the battle area, but all

the way. And he'll be riding in the Army's newest, most progressive personnel vehicle—the Carrier, Personnel, Full Track, Armored, T-113.

The latest step forward in the Army's long search for a truly mobile personnel carrier, the T-113 (T-113 is only the test designation) is a lightweight, fast-moving, adequately armored, full-tracked vehicle which has been designed specifically to carry the Infantryman into battle—not only to the assembly area but in some cases

all the way up to the objective. The T-113 (at the United States Army Infantry School we are calling it the "Kangaroo") is an amphibious, air-transportable, squad personnel carrier. Designed for many uses, it can also be employed as a mobile company or battle group command post, an artillery fire direction center, a fast-moving missile firing platform, a mortar or howitzer carrier, or a battlefield litter carrier. With a mounted machinegun and the capability of its

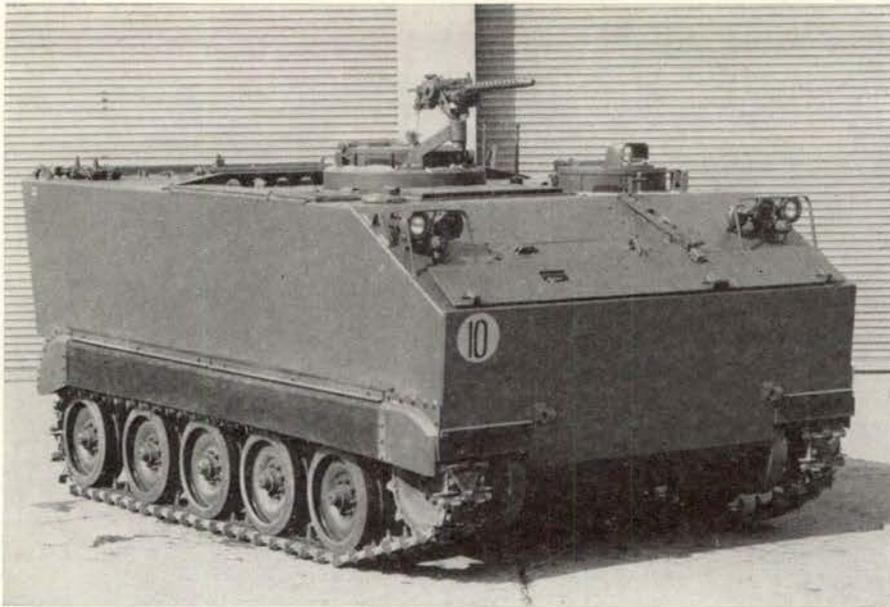


Figure 1. Side view of the T-113. The height of the carrier is only slightly more than that of a man.

doughboy passengers to fire their individual weapons over the top sides, the T-113 can defend itself. However, during such firing overhead protection is sacrificed. It has been designed to protect its riders from small-arms projectiles and artillery fragments and to offer some measure of safety even from the blast, radiation and other effects of nearby atomic explosions.

Now don't get the idea that the T-113 is a full-tracked, mobile fox-hole. It is not a tank from which the Infantryman normally will fight. It won't have the perfect mobility to carry its passengers over every kind of ground or going. In some respects it may be as limited as a 50-ton tank in its ability to cross swamps or large bodies of water, to climb forested hills or to negotiate snow-covered mountains. But this newest in a long line of Infantry carriers will eliminate a lot of the foot marching which has been the bane of the foot soldier since the first caveman walked to war against his enemy. It will be the means of conserving the Infantryman's strength in attacking distant objectives and exploiting the tremendous firepower available to him.

The actual development of an Infantry fighting vehicle started in 1951.

In that year the Ordnance Corps initiated a study which led to the drafting of military characteristics for a family of such vehicles. Out of this study program came the Ontos, which was planned to satisfy Infantry requirements for a squad personnel carrier and a battalion antitank weapon carrier. A number of these vehicles were built and tested by USCONARC agencies. The Ontos proved to be fast and agile. However, it did not meet other basic characteristics which the Army required in its squad personnel carrier, and as a result it was not adopted for Army use. Despite its failure to meet the Army's goal, the

Ontos' speed and maneuverability appealed to the U. S. Marine Corps, and the vehicle is presently being used by the Marines as an antitank weapon carrier.

Using lessons learned from the Ontos, and later from the M-75 and M-59 personnel carriers, the Army continued studies to determine desired characteristics for a universal carrier which, using a basic chassis, could be adapted to a multitude of uses. In 1955 the military characteristics for such a family of vehicles were tentatively approved. A year later this concept was revised, and it was concluded that the primary purpose was to develop a personnel carrier and not a universal chassis. The vehicle design resulting from these studies is the T-113, and construction of prototypes and test models has been under way since 1956.

The Kangaroo is a major step in the achievement of the full-fledged, optimum Infantry combat vehicle. It has the speed and mobility to transport troops over the atomic battleground. It will permit the Infantry commander to decentralize his force until time of need, and then to concentrate or reinforce quickly where and when required. Visualized as organic to the rifle company and the battle group, and driven by Infantrymen, the T-113 will improve further the Infantryman's inherent versatility of movement. His feet carry the foot soldier over practically any terrain, be

LT COL EDWARD H. SIMPSON was graduated from OCS at Fort Benning in 1942. He then went to Camp Hale, where he served with the 86th Mountain Infantry Regiment and later with the 85th Mountain Infantry, with which he went to the Mediterranean Theater of Operations. After the war in Europe he left the service, but returned in mid-1946 with a Regular Army commission and attended the Advanced Course at the United States Army Infantry School. He then went to Japan where he served as a member of the G3 division, Far East Command Headquarters. Upon his return to the United States in 1950, he was named S3 of the Tennessee Military District. Two years later he became executive officer of the Mountain and Cold Weather Training Command and then attended the Command and General Staff College. In 1955 Colonel Simpson was assigned to Headquarters, U. S. Army Europe, as a member of the G3 division, and subsequently served as deputy secretary to the General Staff there. Following this assignment he began his present duties with the Combat Developments Office at the Infantry School.

it jungle, plain or mountain. Using the airplane or helicopter, he has the ability to drop on an enemy after rapid transportation over land or water obstacles. Now, with the Infantry carrier, he will have a third means of moving into battle — in an amphibious, air-transportable ground vehicle which will give him considerable protection from small-arms fire, fragments, blast and radiation. The Kangaroo makes the doughboy "triphobious!"

The T-113 looks a lot like the M-59 now being introduced into pentomic divisions. Looks can be deceiving, however, and it is of interest to know that the T-113 weighs only about eight tons, as compared to the M-59's 20 tons. While similar in silhouette, the T-113 is almost a third smaller in over-all dimensions (Figure 1). It is more maneuverable, faster, and is expected to be much more economical to operate. It will be cheaper to manufacture. On the operational side, the T-113, unlike the M-59, can be lifted in transport aircraft presently available in quantity, is capable of being air-dropped, and has a fording and swimming ability equal to or better than the M-59.

The Kangaroo presently is undergoing service tests at several USCON-

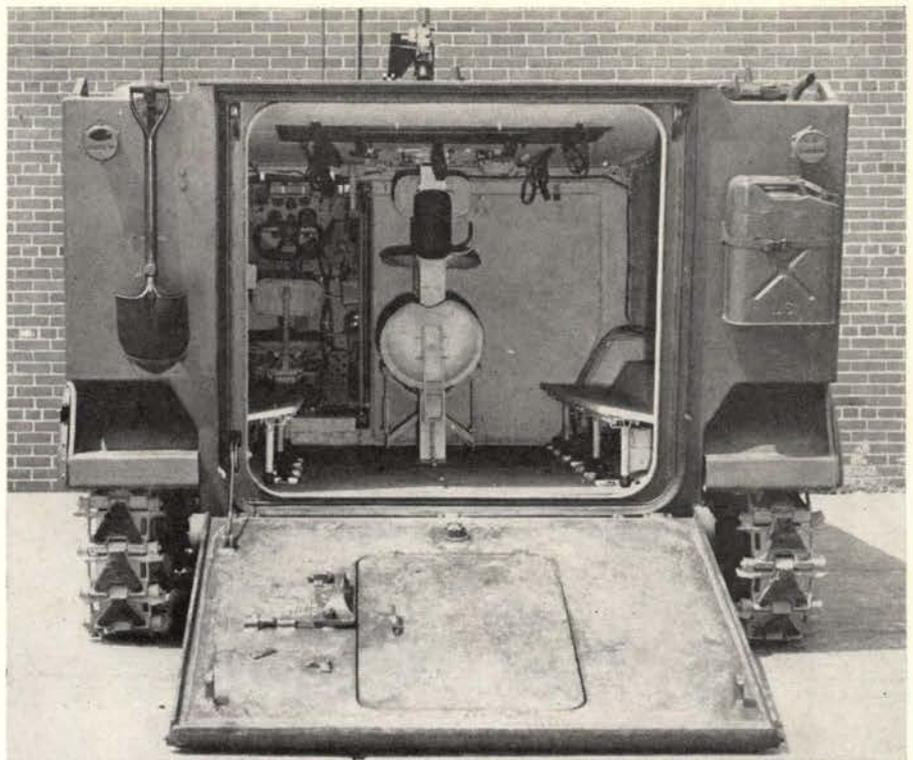


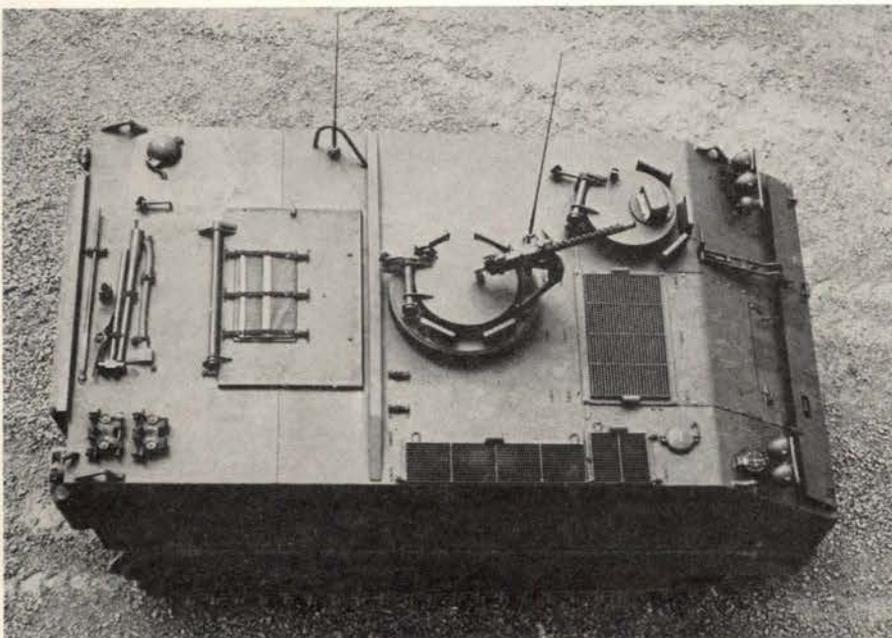
Figure 3. Rear view. The hydraulically operated ramp is almost as wide as the vehicle.

ARC agencies. Until all of these tests have been completed and the vehicle has been given final approval, many of its more important features must remain classified. However, some of the new features being tested have already been announced publicly. Two types of power plants are being evaluated for the T-113: the first an

air-cooled, supercharged, four-cylinder engine of advanced design, while the other is a conventional, liquid-cooled truck engine. Both power packages develop over 200 horsepower. The same transmission is used with both the air-cooled and the liquid-cooled engines. The torsion-bar suspension system and the trackage have been designed to be interchangeable with other light vehicles being developed for the Army.

As Figure 2 shows, the T-113 is essentially a box-like hull with low, top-mounted turrets housing the driver's and commander's vision blocks. The hull has the usual built-in engine access ports as well as a top-opening, double-doored hatch into the cargo or passenger compartment. Almost the entire rear of the hull is a hydraulically-operated door, counter-balanced by a torsion spring and hinged at the bottom (Figure 3). This door, when opened, serves as a ramp for rapid entrance and exit. A small, manually operated door is set into the ramp for use when conditions prevent or do not warrant lowering the ramp. Watertight seals are provided to permit the ve-

Figure 2. Top view. The turrets house vision ports for the driver and the commander.



hicle to swim without leakage of water around the ramp or integral doors.

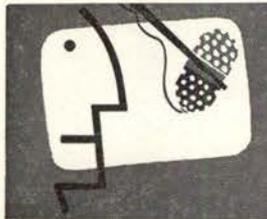
It is not intended that the Infantryman will fight from the new carrier. In some situations he undoubtedly will be able to do so, but the intent of the vehicle is to provide the foot soldier with a rapid means of moving to the battlefield, to cross it with some protection from small-arms fire and artillery fragments, as well as blast and radiation effects of a nuclear explosion, and to exploit any break-

through in an enemy's lines. It will give the unit commander the means of speedily moving portions of his command to reinforce one another, a consideration of particular importance in the atomic era when dispersion is the key to survival.

The T-113 is not the ultimate Infantry vehicle. It is still too soon to know all the things the new carrier will do (service testing will not be completed for some months). However, it is certain that the Kangaroo

will fill the need of the Infantry for a troop carrier which can be moved by air to distant "trouble areas," which will have good all-weather, all-terrain mobility, and which—most of all—will give the doughboy a lift until that "moment of truth" when he comes in to his own, on the ground.

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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. During the air movement of an Infantry battle group supported by an Air Force troop carrier wing, who is responsible for the actual loading, lashing and unloading of the battle group's supplies and equipment?

- the commander of the Air Force troop carrier wing.
- personnel of the Air Force aerial port.
- the commander of the Infantry battle group, with the technical assistance of Air Force personnel.
- the crews of individual aircraft.

2. The battle group area support platoon of the division signal battalion provides a radio relay system and a radio/wire integration system between division and the battle group. What other means of communication does the battle group have with division?

- six different radio nets which normally operate between division and the battle group.
- four different radio nets and di-

rect wire lines between division and the battle group.

- direct wire lines between division and the battle group.
- none.

3. What two methods are used within the field army to distribute supplies?

4. What are some characteristics of contour lines as they appear on a topographic map?

5. How is the division transportation battalion usually deployed?

6. The armor penetration capability of the 3.5-inch HEAT rocket is gained by the

- action of a copper sling formed from the copper cone.
- velocity of the rocket.
- shaped charge in the warhead.
- blister charge just behind the main charge.

7. Which of the following vehicles is not transportable in the C-123 airplane?

- truck, cargo, 2½-ton, 6x6, M-35, w/winch.
- truck, cargo, 5-ton, M54.
- truck, utility, ¼-ton, 4x4, M-38A1.

8. What divisional unit provides the personnel carriers to transport assault elements of the Infantry division battle group?

- the tank battalion, Infantry division.
- the transportation battalion, Infantry division.
- the armored cavalry squadron, Infantry division.
- carriers organic to the battle group.

9. What unit provides the vehicles for resupply of ammunition to the mortar battery?

- headquarters battery of the division artillery.
- ammunition section of the mortar battery.
- service battery of the reinforcing artillery battalion.
- supply and maintenance platoon of the battle group headquarters company.

10. A flashlight with infrared filter may be detected by a sniperscope at what range?

- 500 yards.
- 100 yards.
- one mile.
- one and one-half miles.

(For answers turn to page 74)

DON'T LEAD HIM BY THE HAND

Many field grade commanders are ruining their junior officers and failing to develop future leaders because they feel they must lead their subordinates by the hand.

DURING the past few years the constant refrain of far too many field grade commanders has been, "The trouble with the young lieutenant of today is that you've got to lead him by the hand." Since most of us have noted this attitude and some of us have been guilty of it, I would like to explore it and note its effects on today's junior officer.

We can look back to the early 1940's, when many of us who are now field grade officers were first commissioned, and remember that it was not unusual for an officer to be given command of a company or battery within six months of the date of his commission. We also know of many OCS, ROTC or West Point graduates who achieved commands in even less time. No one, with the possible exception of the first sergeant, led the new officer around by the hand then. Why should it be necessary now?

There are some who will say that the average newly commissioned officer during the rapid expansion of World War II was perhaps two years older than today's second lieutenant. Surely a scant two years cannot be considered a significant difference between men in the service. Others will point out that many of yesterday's lieutenants began their careers as enlisted men, while today's junior officers have few such "old soldiers" among them. A stronger, but narrower, viewpoint would have it that the urgency of a World War was all that was necessary to spur the young officer to that extra effort which always separates the truly outstanding leader from the average officer.

There is a grain of truth in all of these arguments. Perhaps the young lieutenant of approximately fifteen years ago did have certain advantages in age and experience over the new

officer of today. But does this honestly account for the alleged "deplorable state" into which the Army's junior officers have "degenerated?"

From the end of World War II until my arrival in Korea in August 1954, I had had only six months of troop duty. During these years I had begun to wonder whether or not the caliber of the young officers in our Army had changed so materially as people were saying. After serving with four different tactical battalions and closely associating with other units of similar size during the past three years, however, I think I can state with some authority that the only thing wrong with the average young lieutenant of today is the result of some commander leading him by the hand.

The tendency on the part of far too many commanders is to try to do everything by themselves. Too few junior officers are trusted to do anything alone or to make any decisions on their own. This is undoubtedly due at least in part to the fact that we quickly forget those times when we didn't "know it all" either and had to learn by experience. There is considerably more to it than that, however.

Let us consider the field grade officer as he passes from one assignment to another. Very often he is transferred with such frequency that he begins to adopt an unwritten, but nonetheless real, policy for himself. He feels that he must immediately "make a record" for himself in each new assignment, and this feeling brings about his injurious refusal to delegate authority to his junior officers.

Unfortunately, troop duty assignments for field grade officers are becoming increasingly hard to find in recent years. Quite often the new commander, having had no such assignment since he was a platoon leader, suddenly finds himself completely out of his element in command of a battalion or a battle group. At first he is unsure of himself. He feels the inevitable pressures from above. Along with his eagerness to establish his

LT COL JOHN M. HINMAN, Artillery, is currently commander of the 56th Anti-aircraft Artillery Missile Battalion, Fort Monroe, Virginia. Colonel Hinman was born in New York City in 1916 and was graduated from Williams College, Williamstown, Massachusetts, in 1938. Though originally commissioned a second lieutenant in the New York National Guard in 1939, he is now a Regular Army officer. A veteran of the European fighting of World War II, the author's post-war assignments include duty in Hawaii and Korea. In 1950 he was graduated from the Artillery Officer Advanced Course; thereafter he was assigned to the United States Military Academy as an instructor of mathematics. Subsequently he was reassigned to the operations staff of Eighth U. S. Army (Rear) at Camp Zama, Japan. Upon completion of this foreign service tour, Colonel Hinman returned to the United States and attended the Advanced Missile Course at the Guided Missile School, Fort Bliss, Texas. Thereafter he assumed his present command.

"name" as a troop commander, he feels that he has been placed in a position where he cannot take a chance on delegating authority to his subordinates. As he settles into his new job, this faulty and extremely detrimental attitude becomes habit, and the harm is done to his junior officers.

Situations such as these are sometimes understandable, but that doesn't lessen their effects on the young lieutenant in the least. Too frequently we are stifling the initiative of our junior officers by telling them what they should do and where and how they should do it.

The results of our failure to develop initiative among our young officers can be far-reaching and even disastrous. Almost invariably, a careful look at a unit in which the initiative of the junior leaders has been held in check will reveal a unit with poor morale. On the surface the unit may appear to be top-notch, but underneath there will be a malignant current of dissatisfaction, and under any real stress the unit will fall apart. The danger can be pointed up by asking ourselves the question, "What will

happen to this unit when the commander, who does everything by himself, is transferred or leaves the unit for any one of a hundred reasons?" The answer is all too obvious.

We go to great pains to engender pride in the uniform, in the service and in the young officers themselves during their training. And then we do an about-face and kill this pride by ignoring these young men time and time again. In far too many instances this is carried to such an extreme that field grade commanders will go directly to the squad leader to make some correction, instead of placing the responsibility where it belongs: squarely on the shoulders of the company or battery commander. Under these conditions it doesn't take long for the junior officer to discover that he has no real authority and isn't allowed to make his own decisions. Naturally, the course of least resistance for him is to sit back and wait for the "old man" to tell him what to do.

The young and inexperienced officer of today needs guidance just as did the new lieutenant of fifteen years

ago. There is no quarrel on this point. But he doesn't want to be, and doesn't *need* to be, molly-coddled. Furthermore, as a reasonably intelligent and conscientious young man, he deeply resents the overly *detailed instructions*, the frequent *insignificant changes* to everything he does, in short, the *constant harassment* which seems to have become his lot.

The wise commander makes certain that his subordinate understands the overall policies, that he knows what the problem is and knows what is expected of him. Then he lets the young officer go to work on it. If he needs help, the commander should give it to him—but in moderate doses. Don't steal from him his feeling of accomplishment, his pride in doing a job and doing it well.

Many potentially fine young officers are leaving the Army today because they feel that they are not trusted to do even the simplest jobs under their own steam. Gone is the pride that is part and parcel of commanding "your own" unit, however small. And going with it is the incentive to stay on in the service of our country.

In spite of this, many fine young men remain in the service, and it is for them that we should be particularly concerned. Some day these officers may have to make decisions affecting the lives of many men. Will they be able to rise to the occasion?

We, on the battle group and battalion commander level, should keep in mind that some years hence we may be commanding divisions with some of these young officers as battle group commanders under us. If we continue our present attitude, they will have every right to say, "I'm sorry, General, I can't do this alone. You'll have to lead me by the hand."

I have yet to see a committee at any level that could vote a unit up a hill. It takes one man who isn't afraid to say "I" and face the consequences. One man with the professional competence to know what do do, the guts to decide to do it, and the dynamic leadership to inspire other men to get it done.

GENERAL WILLARD G. WYMAN



Infantry Intern

By LT COL ALDEN P. SHIPLEY

Two rainsoaked figures huddle in silence in a swamp. Suddenly, the stillness of the night is broken by a noise.

"Bill!"

"Unnh?"

"Whuzat noise?"

"Unnh?"

"Listen! What's that noise?"

"Lemme alone. I wanna sleep. Prob'ly a bullfrog."

"How can you sleep? Soaking wet, cold, mud up to your eyeballs. We don't even know where we are."

"So what? I never slept so good. Leave me alone. You're guard. And let that noise alone. It won't bother us."

Four weeks earlier the crash of a dead tree or the croak of a bullfrog in the stillness of a muggy, coal-black night would have roused Bill with tingling spine. But now he is approaching that point in Ranger training where routine sounds of the night go unnoticed, but sounds which indicate possible danger, even though faint, begin to stand out. And he is be-

Ranger training is a rugged internship during which the Infantryman, like the medical intern, gets the practical experience he needs in his profession.

ginning to accept dirt, grime and fatigue as part and parcel of the soldier's life.

Does this sort of existence strike you as being animal-like or too dirty and grimy for clean-cut American youth? Let's hope not. Because if it does, you are engaging in wishful, lazy, peacetime thinking that costs so many lives and risks defeat on the battlefield. You might even be guilty of the old saying, "Anyone can be uncomfortable. It doesn't take practice." No, it doesn't take practice to be mis-



Just like combat . . .

erable, but it takes a lot of practice and experience to be efficient enough—rugged, intelligent, aggressive, constant and just plain enduring enough—to survive as an Infantryman in combat. It takes additional experience to lead others and to destroy an enemy who is tough—who has never lived the easy life to which many Americans have become accustomed. Furthermore, with the advent of atomic weapons even more experience becomes necessary. The Ranger course, which is conducted eleven times a year by the Infantry School, in fair weather and foul, is rugged, fatiguing and

to a degree hazardous. It is designed to provide the kind of rugged training and experience needed for combat.

Let's examine young Bill and join in his musing. Maybe you will accept the Ranger challenge.

Bill arrived on this earth in March 1935. His parents were just getting on their feet after the depression, following an average middle class childhood and youth. They vowed that their Bill would get all the little niceties and the opportunity for the education that they couldn't afford. During his childhood Bill had read a lot about World War II and later about Korea. He had

seen a lot of movie and TV war stories, and decided that an Army career was for him. Of course, during his boyhood he had learned to accept bikes, motorscooters, cars, television and Uncle-Sam-owes-me-a-living as part and parcel of modern life. But he came along in good style, complete with a commission from the Academy or ROTC, I've forgotten which, and was a fine, normal young man.

Bill had heard about Ranger training shortly after receiving his commission and volunteered for the course. However, many times during the past few weeks he has asked himself why he did it. The question has been hard to answer, particularly on occasions when he has been ordered to do push-ups, squat jumps or other forms of "torture" for some minor infraction, and even more so when these tortures were inflicted immediately after runs or speed marches when he was sure he couldn't take another step.

"Why did I do it?" he wonders. "Did I volunteer for this because I thought it was the smart thing to do? . . . Was it patriotism? . . . No, I'm as patriotic as anyone else, but I'm sure that wasn't my real motive. . . . They said it would be rough, and they told me I would have to be a man to get through the course. . . . Maybe that's why I volunteered. I'd show them that I could breeze through it. . . . But actually I thought these statements were just tossed out as a challenge—just another recruiting effort. . . . Anyhow, I'm here now and I'll make it or else. . . ."

Bill reminisced in his peaceful, half-wakeful repose, nice and warm or very numb from the cold—he wasn't sure which. He wondered why he hadn't known more about the course before he joined it. He had heard it was a survival course. In a way you could think of it as such; he'd survived so far.

"Well, Bill, what would you tell prospective students, enlisted and officer, to prepare them for the Ranger course?"

"The first thing I'd tell them is that they must volunteer and that they

LT COL ALDEN P. SHIPLEY received a commission in the Infantry upon graduation from Western State Teachers College, Bowling Green, Ky., in 1940. During World War II he served with the 10th Infantry Regiment at various posts in the United States, as well as in Iceland, England, Ireland, France and Luxembourg. He then became an ROTC instructor at the University of Pennsylvania and later served as a National Guard instructor at St. Matthews, Ky. Following this assignment, he became an Infantry advisor with the Army Mission to Guatemala, and in 1953 he went to Korea to serve as G3 of the 3d Infantry Division. Two years later he joined the staff of the United States Army Infantry School and is currently the deputy director of the Ranger Department. In addition to attending the Command and General Staff College in 1945, Colonel Shipley was graduated from the Marine Corps Senior School in 1950 and from the Army Language School in 1951.

should volunteer. But I'd certainly emphasize that before they do they want to make sure that they are in good physical condition, because right off the bat they have to make 200 points on the Army Physical Fitness Test, and they have to be able to swim 50 feet. And these Rangers are perfectionists — every exercise must be executed perfectly. A score of 200 as the Rangers give the test might be equal to a 300 at some other place. I'd caution them that the minimum of three pullups, 15 pushups, 20 squat jumps, 25 situps and the run of 300 yards in 60 seconds or less won't add up to the required 200 points. They have to do considerably better than the minimum in most of the events to make it. I'd tell them that they'd better run, run, run and exercise, exercise, exercise in order to pass the test and withstand the rigors of the course. If they can't, they might as well stay home. The Rangers won't accept a volunteer who isn't in top shape — and even if they did, he wouldn't be able to keep up with the class.

"I'll never forget that lieutenant who had us racing duck-waddle style, then called us 'pretty chickens' when our legs felt as though they couldn't take another step. Then he put us in a hole in the ground, called a bear pit, and told us to throw each other out. Some fun. I'd tell them that Pfc's through Lieutenant Colonels may apply and that enlisted men are eligible for a one-grade promotion if they earn the Ranger tab."

"How about applications, Bill? Does DA or USCONARC publish a regular quota for this course? What would you tell them about that?"

"No, the course isn't on a quota basis. I'd tell them that Benning runs eleven courses each year, and they apply for it on the regular personnel form. DA Form 1049, I think they call it. Field commanders are required to forward the application accompanied by the physical fitness test score to DA. In time, usually 30 days or so, they'll get the word. I'd remind them what I said about exercising. Lots of people have trouble with pull-

ups, but I increased mine from nine to 17 by working out three times daily and pulling a little harder than I felt I could each time. Only took me a month. Hadn't any idea I could do it. But back to that quota business; it's surprising how people get confused. A Ranger instructor was telling me about a unit right there at Fort Benning that didn't know how to get volunteers admitted to the course. Guess we have too much to read. It's like the officer who said he hadn't aired his tents because he hadn't seen anything in writing on it for over a month. If they'll just apply on the form, they'll make it."

"What about the course, Bill? What do they do? Why take it?"

"Well, as I said back up the line there when we started this Yellow-River-mud, beauty-rest sonata, I'm really not sure, and I'm already at the end of the fourth week. Let's kick it around. Maybe we can come up with the answer.

"We started the course in the Harmony Church area at Fort Benning. During our orientation the Ranger Department Director told us we'd spend two weeks there; then we would have about three weeks' swamp, jungle and amphibious operations here in Florida. After that we'd

move to a place called Dahlonga, Georgia.

"During the two-week period at Benning they organized us into platoons, two officers and one enlisted for our 147-man class. We started with 182, but 31 flunked the PT test, two went to the hospital with wrenched knees, one with the mumps and one with a broken hand. Don't know, but my buddy says that last guy broke his hand hitting the wall because the tactical officer restricted him until he could pass barracks inspection. Right off the bat they told us no one would wear rank, and we would address each other as 'Ranger.' Remember old Stuffie Van Court? That rank business really got him, but he's coming around. If he keeps on, I believe he'll be a right good leader. They issued us a clipboard and a regular Fort Benning-type schedule and put us to work.

"In those two weeks we had quite a bit of Ranger indoctrination. Bet you didn't know that we've had Rangers in America since 1756. They even have a copy of Major Robert Rogers' Standing Orders at Benning which were published in 1759. Rogers organized the first Ranger unit in our history — allies of the British in the French and Indian wars. Time and

They gave us a lot of map reading and compass work . . .



... Funny, but those orders seem more sensible for Infantry in this atomic age than many of the things we do now. Not well written, but right to the point. I remember one that goes 'Act the way you would if you was sneaking up on a deer. See the enemy first.' Now that's real effective, isn't it?

"And physical conditioning. We never walked. No self-respecting Ranger would. Double-timed everywhere — cross-country, up hill and down. They gave us a lot of hand-to-hand combat and some bayonet work. First time I ever threw a man over my hip and then kicked him in the middle. Then he did it to me. Learned a lot both ways. Amazing how many different ways you can kill a man, or at least cripple him.

"Along with these things they gave us map reading and compass work. Anyone contemplating the Rangers should bone up on that; the compass course is a lulu. They don't give you any meringue though, just filling. You learn how to get from here to there in the shortest time and arrive ready to fight. They show you how five miles over the hill on foot is usually a lot

closer than going around it in trucks. And every minute they are stressing command and leadership. Our tactical officer and the Ranger instructors must have eyes in the back of their heads. You sure learn obedience without question. I'm picking up wrinkles that will make it a snap to have the best platoon in my unit when I get back. Rangers use the tell-show-and-do method, and the instructors do everything with the students. None of this do-as-I-say business.

"After getting some rather earthy work with explosives, like how to blow up bridges, trees and people and how to plan small-unit actions — patrol, squad, platoon and company — we went on a 'walk-through' problem which was complete from warning order to objective and return.

"I guess I better say a few words about that problem. It's a forerunner for the combat situation we play for the remainder of the course. Our mission was to pull a company raid on a guerrilla CP. Each of us was required to write warning orders, figure routes, prepare equipment lists, conduct rehearsals and write our platoon and company orders. Then we loaded on

the new Otter aircraft, took off in pitch dark and landed in a cow pasture. We went in by clandestine candlelight, which they told us later was regular Pathfinder equipment. We proceeded cross-country by azimuth, waded a river and scaled a cliff. More cross-country got us to the objective where we assaulted live aggressors. Then cross-country again to a pick-up point and a helicopter snatch-out back to camp. I was sure I wouldn't get up that cliff, and after I did, I didn't believe it. Good problem. None of us realized we could do things like that. And you know what? One student made it with a wrenched arm. No excuses. I don't believe any of us could have done it two weeks earlier.

"That wrapped up the Fort Benning portion of the course. They loaded us on busses and sent us down here to this north-Floridian garden spot, off the Gulf of Mexico, 78 miles from nowhere in any direction. They have a camp here on the west side of the Eglin AFB reservation. Very interesting place. Something to do with Air Force research they say, but all we have found different is more

Our mission was to pull a raid on a guerrilla CP . . .





Thirty-six wet, cold, cussin' cross-country hours . . .

snakes and 'gators per square foot than anywhere else. Boy, am I learning! When I arrived here, I was sure that snakes and such chase men. I couldn't have been more wrong. We chase them. And what's more they're not bad to eat. As I said before, we're to be here about three weeks. The reason for the *about* is that we don't really know how long we'll be in Florida, or later on, in the mountains. You see we're in combat. Of course, none of us expects to get shot (I don't think), but after leaving Fort Benning we receive no schedules. And man, it's real. For example right after we got here they — no, I'd better not. Combat realism is a bit difficult to stage without a real enemy to throw hot lead around, and if I give away the Rangers' secrets, it could well spoil the effect for those who follow. I will say this. Just like combat, we don't know from one minute to the next what is going to happen. The other night we had been asleep, in bed mind you, for exactly 92 minutes by the clock. All of a sudden the con-

fetti hit the wind machine. We were routed out amid the rollicking boom of seemingly indiscriminate but actually carefully placed artillery simulators, practice grenades, and enough TNT to four-lane the Panama Canal. Ten minutes later we were in the briefing room receiving information from the battle group S2 for a mission. After 36 wet, cold, cussin', cross-country hours, we enjoyed four more hours in the sack before launching on this mission. (We really aren't lost. My buddy just has his adrenalin running the wrong way.)

"I hope you are beginning to appreciate why I'm enjoying this brief siesta in spite of the seemingly uncomfortable surroundings. Amazing! These thoughts are beginning to break through the 'Why' barrier for me.

"I mentioned leadership earlier. But I neglected to say that during the orientation they told us they would teach us to accept fear, fatigue and hardship in their proper perspectives. They said fatigue and fear will usual-

ly affect a man like too much drink, stripping him of convention and revealing his innermost nature. Then they went on to point out that the best way to know how to lead in battle is to recognize this in ourselves so we can counteract it or apply it as necessary to motivate the men we lead. Well, they do just that, and more. Look at my buddy here. Husky football type who appears to fear nothing, and he's still wrestling with that noise he says he heard. He'll whip it though — he has to. He can't run off and leave me, and I'm sure he won't faint. Then there's that kid from the Bronx with the glasses. Measly looking little fellow whose bones seem to stick out

We don't know from one minute to the next what's going to happen . . .



and rattle. If he's afraid, no one knows it but him. Seems like he's always in the thick of things when it gets rough. Always seems to be doing the right thing without any special effort.

"I guess I oughta say something about the lane observers. Now there's a term that will throw you. Let me tell you about them.

"The lane observer is a Ranger officer or noncommissioned officer instructor who accompanies us on each mission. These missions range from six- and eight-man recon patrols through company-size raids. They cover distances from 600 yards to 50 miles and take anywhere from a few

By now we know enough to believe them when they say it'll be rough . . .



hours to days. We use all sorts of transport — planes, ships, landing craft, choppers, trucks, rubber rafts. No mules yet, but it wouldn't surprise me. But mostly, we use our feet. The lane observer is with us everywhere we go. He starts out by observing us during the briefing and continues until we have completed the problem. He never corrects or interferes. We run the show unless we do something that might get us drowned or seriously hurt. He lets us lead the unit in our own way until he has had sufficient time to grade us. Then we become a 'battle casualty' and the next student takes over so he can be graded. After we've completed the mission, the lane observer talks to everyone who was a leader and lets us know how we did. Usually, he doesn't say much about tactics. I was a bit disappointed until I realized what they were doing. They get right down to the nuts-and-bolts level of leadership and the control of men. Such things as how to control your squad or platoon in the dark, how your mannerisms—guess actions is a better word — affect you and your men. I've gotten only three grades so far, but imagine my surprise when one of the observers told me how I could best use my strong traits and how to bolster up my weak ones. Real personal. Made me mad at first, but then I began to realize he was sincere and had a real desire to help me be a top-flight leader. So I listened. The more I thought about what he said, the better it sounded; so the next time I was in command, I tried a few of his suggestions. Don't know whether it was me or the men, but we did better than before, and I'm beginning to feel efficient and a bit more confident — like I could whip my weight in wildcats if someone decides to start a fight. Right now, I feel that the advice and counselling we get from the lane observer is just as important as the experiences we go through.

"Of course I won't be able to say anything about the mountain climbing up at Dahlonga — an old Indian name which I believe means 'cold in the hills' — until after we've been up

there. I understand it's in the Chattahoochee National Forest, and they say the country is too hilly for a self-respecting goat. A captain who just finished the course told me I'd get used to running up and down those hills at high port with 40 pounds of gear on my back. By now I know enough to believe them when they say it'll be rough. But I also know that I'm in shape to take it.

"Well, I don't know whether I've really answered the question or not. A Ranger doesn't get any extra pay, but he may possibly be promoted later in his career due to his increased confidence and efficiency. Also he wears the Ranger tab on the left shoulder of his uniform with a lot of pride for the rest of his Army career, but that doesn't prove too much. I guess the way I really feel about it is summed up in a few remarks I heard the other day. 'If you want to be a really good Infantry officer, you need Ranger training because Ranger training is really an internship in good Infantry training. To learn to lead men on the battlefield, you need experience in leading them under the most rigorous conditions we can create in peacetime. Ranger training is as necessary for the Infantry leader of today as an internship is for the young surgeon. Unit isolation, together with the great distances between units which is necessary for survival on the atomic battlefield, places a higher premium on aggressive, decisive, intelligent small-unit leadership than ever before. The side able to control the dead space between units and to find and fix the enemy will control the battlefield.'"

"Bill!"

"Unnh?"

"C'mon. Let's go!"

"Go? Go where? Thought you said we were lost. Thought you were worried about a noise."

"Figure our rally point's about a mile or so that way. Ought to make it in less than an hour. That noise *was* a bullfrog pleading with a mosquito. You must have been dreaming. Been asleep for 15 minutes. Live it up. Sleep after you get old. Let's go."



Defensive tactics for the battle group on the atomic battlefield call for maximum dispersion consistent with the mission and for maximum offensive action.

THE BATTLE GROUP IN THE DEFENSE

By Lt Col Albert H. Smith, Jr.

At first glance it appears that a commander who must conduct defensive operations on the atomic battlefield is impaled upon the horns of a dilemma. On the one hand, he wants to organize his defense in such strength that the enemy must mass his forces, thereby presenting targets which can be destroyed with tactical atomic weapons. On the other hand, he wants to disperse his defense so that his own units will not present a profitable target for enemy atomic fires.

Some military theorists emphasize the first horn. They advocate the organization of strong perimeter-type defenses on key terrain which will cause the enemy to mass. The battle group commander who applies this theory may accomplish his mission; on the other hand, he may find that his unit has vanished in a fireball and mushroom cloud.

This is the fourth and final article in the series we have been publishing on pentomic rifle company and battle group tactics.

Other military theorists emphasize the second horn. They insist that our defense forces must be widely dispersed to prevent atomic disaster. But such a defense would require that small units be spread so far apart that there could be little or no mutual support among them. The battle group commander who applies this theory might survive also, but he probably will find that the enemy has breached his defenses without ever having to mass.

Organization of the defense along either of these two opposing lines could well prevent accomplishment of the mission.

There is a middle ground which constitutes a new fundamental of defense: *Maximum dispersion consistent with the mission.* Current doctrine for the battle group interprets this as follows:

Each unit is assigned a defensive area based on consideration of the mission, enemy, terrain, and troops and supporting fires available. Mutual support between and within platoons by weapons organic to the platoon is retained. Companies are disposed so that they are mutually supporting by company weapons (the 106mm rifle and the 81mm mortar). Intervals up to 1000 yards between companies may be accepted, provided adequate surveillance and coverage by fire can be maintained.

Department of the Army visualizes larger gaps between battle groups of the division, but these gaps will not be left unattended. They will be cov-

ered by long-range nonatomic and atomic fires, by barriers and by surveillance agencies such as reconnaissance and cavalry units.

In the future, reliance and emphasis will be placed on a series of defensive layers disposed in great depth. This is in sharp contrast to the organization of a single, strong main line of resistance, so familiar in World War II and Korea. Whenever possible, defensive dispositions will consist of three echelons: the security zone, the forward defensive area, and the reserve or striking force area. The security echelon provides early warning and intelligence information, denies the enemy close ground observation of the battle area, delays and disorganizes the enemy advance, and deceives the enemy as to the true location of the battle area. The forward forces either engage the enemy in decisive combat, or stop, slow, canalize and disorganize him to facilitate his destruction by other forces and means. The reserves are designed either to limit penetrations and eject

the enemy by limited-objective counterattack, or to defeat the enemy by offensive action forward of and within the battle area.

Having established this foundation, we can turn our attention to the types of defense. Although many variations exist, there are only two basic types — *position defense* and *mobile defense*. A position defense is relatively compact. It is organized primarily to stop the enemy forward of a critical area. Mobile defense, on the other hand, is a fluid defense. It is designed to destroy the enemy, rather than to hold ground. In this discussion we will concentrate on mobile defense, since most of us are less familiar with it and since it probably will be preferred in atomic warfare. It makes *maximum use of offensive action*, which is another fundamental of our new defense concepts.

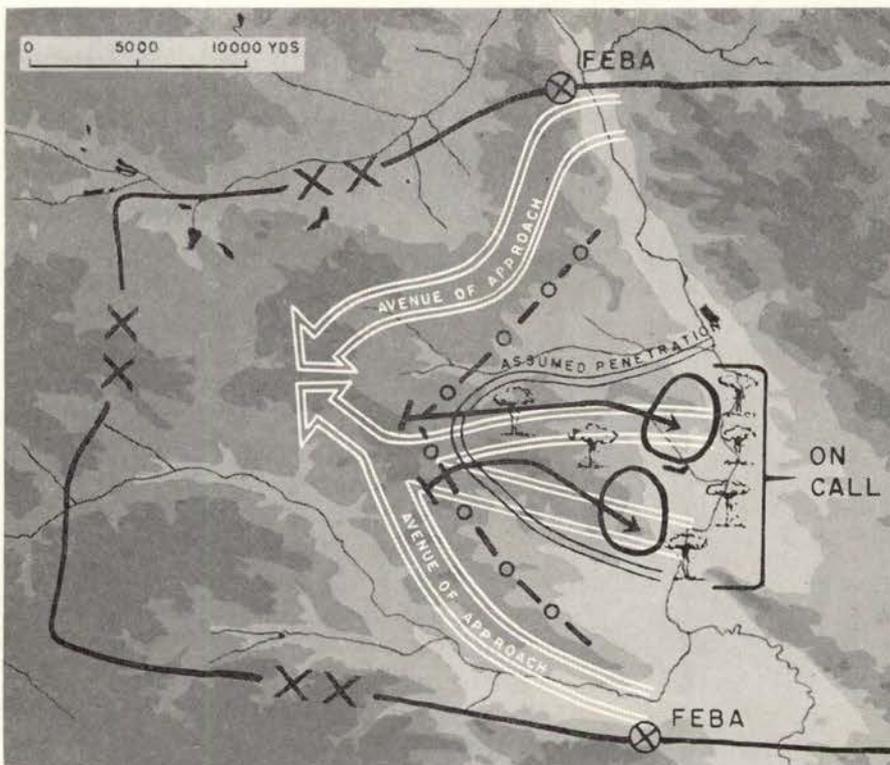
There are two major differences in position and mobile defense: disposition of forces and conduct of the defense. In position defense the bulk of our available strength is disposed in

the forward defensive area. In mobile defense forward areas are held lightly and most of our forces are retained in depth as a striking force. In the position defense we fight to stop the enemy forward of the battle area by utilizing fire and close combat. Enemy penetrations are ejected by counterattack. In mobile defense we try to set the enemy up for the kill and then destroy him. To put it another way, by the use of barriers, fires and maneuver of forward forces, a commander conducting the mobile defense tries to force the enemy to concentrate. These vulnerable formations are then attacked with atomic weapons and striking forces at a time and place of the commander's choosing. Hannibal used this same tactical approach in 216 B.C. when he defeated numerically superior Roman legions on the plains of Cannae.

Keeping these basic principles in mind, we are now ready to observe the planning and conduct of the mobile defense. We shall look first at the division level, since this is the smallest unit capable of conducting all aspects of such a defense. Then we will discuss several tactical situations which might occur on a future atomic battlefield and which will serve to highlight current doctrine.

The division commander has been assigned a deep battle area with a frontage of some 30,000 yards. He has received additional forces and has been allocated atomic weapons from corps which are required for the effective conduct of the operation. From the very start the division commander is convinced that this is his fight and that it must be controlled by his headquarters. Battle groups will participate by occupying portions of the forward defensive area or by constituting part of the striking force. Next, having analyzed the directive from corps, the division commander concludes that his mission is to destroy attacking forces by a combination of offensive and defensive actions. He will fight the battle throughout the assigned area to accomplish this objective.

Figure 1. Organization of the defense. The division commander's tentative counterattack plan against an assumed penetration.



Characteristics of the area of operations are important in his planning. He recognizes that the river in front of the forward edge of the battle area (FEBA) is a good obstacle. It is fordable only at a few locations, and there with some difficulty. Cross-country mobility is good throughout his battle area.

So much for essential background. The division commander is ready to begin the development of a plan of defense. With the help of his staff, he first analyzes the major avenues of approach into his area and the strength of certain terrain features from which he can block or canalize enemy forces using these approaches. Following his analysis of the terrain, he considers the allocation of forces along the FEBA, the positioning of forces in depth, the utilization of atomic and non-atomic fires and how he can most advantageously employ his striking force. He develops the best plan to carry out all aspects of his mobile defense mission. The plan of defense will provide for the commitment of offensive combat power (fires and/or forces) to destroy vulnerable enemy concentrations developed forward of the battle area. Likewise, the commander makes multiple plans for the redistribution of his containing forces and offensive action by his striking force—to be implemented if the enemy penetrates the battle area. Counterattacks are launched by division or higher headquarters, dependent upon the strength and degree of success of the penetrating forces and the degree of involvement of division combat power in the containment mission.

Having planned the mobile defense, the division commander ensures that subordinate unit commanders understand how he will conduct the operation. Specifically, he makes certain that each divisional element is prepared to perform its assigned role in multiple division counterattack plans to destroy the enemy by a combination of defensive and offensive actions. Battle groups will participate in the

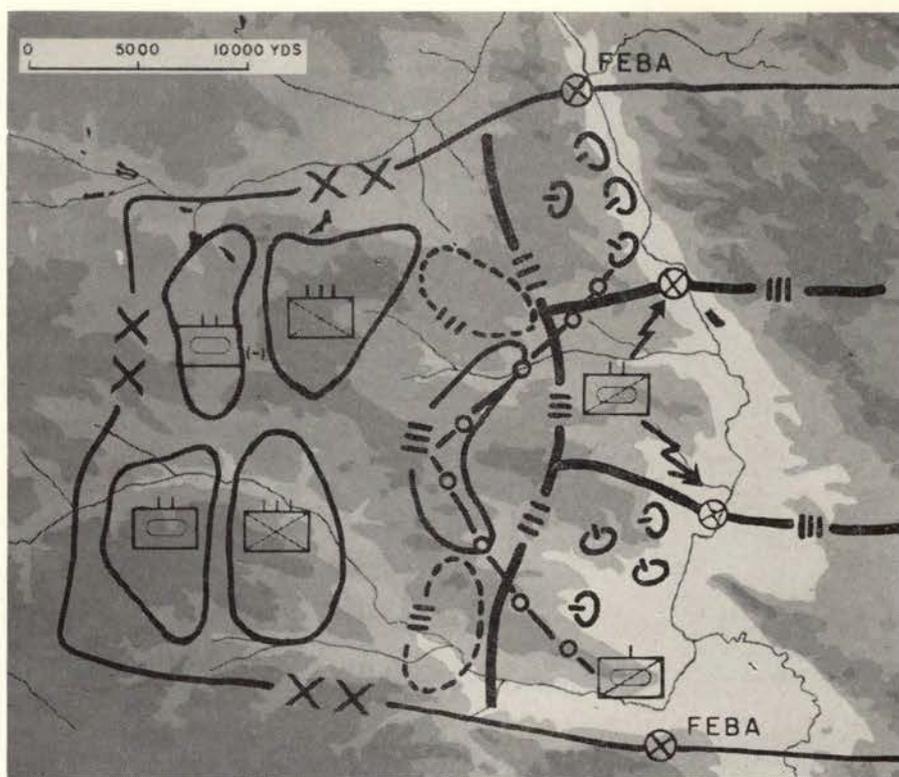


Figure 2. Organization of the defense. The disposition of the organic and attached combat elements of the division.

conduct of the mobile defense by defending, delaying or attacking, as directed by the division commander. Figure 1 illustrates one division plan of action against an assumed penetration. In this instance, the division commander believes that troops disposed along the switch position will block the enemy in the penetration. Then, utilizing one or two atomic weapons and the attacks of two reinforced battle groups, he will be able to destroy the enemy in the area. On-call atomic concentrations are planned along the river to destroy forces fleeing east or to destroy reinforcements attempting to move into the penetration.

Figure 2 illustrates areas to be occupied by organic and attached combat elements of the division. Note that the division commander disposes two battle groups plus reconnaissance units along the forward defensive area. One battle group occupies the second layer of defense. The remaining combat forces are disposed in

considerable depth along the third layer of defense.

Having developed the division concept of the defense, we can intelligently focus our attention on the battle groups of the forward defensive area. The northern battle group commander has received the following mission: "Organize, occupy and defend assigned battle area. For boundaries and limiting points see operations overlay. Prepare supplementary positions for an all-round battle group defense—to be occupied only as required or directed." He also receives attachments of one medium tank company and two Infantry carrier platoons. In addition, the division commander advises the battle group commander of the proposed counterattack plans and emphasizes that the battle group must hold the high ground in its area as a hinge for division counterattack plans.

To cover his assigned frontage (approximately 7000 yards), the battle group commander visualizes a disposition of three companies forward and

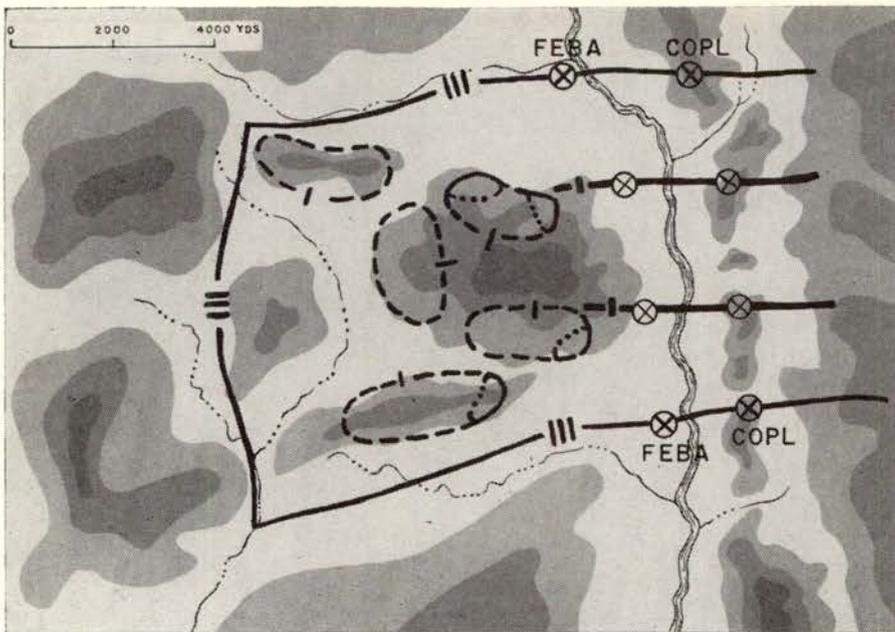


Figure 3. Organization of the defense. The northern battle group commander's disposition of forces.

one company in reserve. His other reasons for the disposition of three companies along the FEBA include reduced vulnerability to atomic weapons and the fact that such forward strength is consistent with the division concept of operations. He indicates battle areas for forward companies by boundaries and limiting points. The battle group commander designates primary positions to be occupied by platoons of the reserve company when they are not engaged elsewhere preparing positions or performing surveillance missions (Figure 3). Since the calvary unit on the right has a limited capability of defense, the battle group commander refuses his right-flank company to provide additional security. In accordance with the division commander's directive, he emphasizes preparations for the conduct of an all-round defense. Supplementary positions are planned and constructed to permit the battle group to fight from a perimeter when its flanks and rear are seriously threatened by enemy advance. The designated battle group strong point defends the most critical terrain in the assigned area.

Now let's have a look at the security echelon. A combat outpost line

is located on the first dominant terrain in front of the battle area. The COPL will provide warning of an enemy advance, will act as a counterreconnaissance screen and will deny enemy advance elements close ground observation of the battle area. At this distance (approximately 2000 yards), it is preferable that the for-

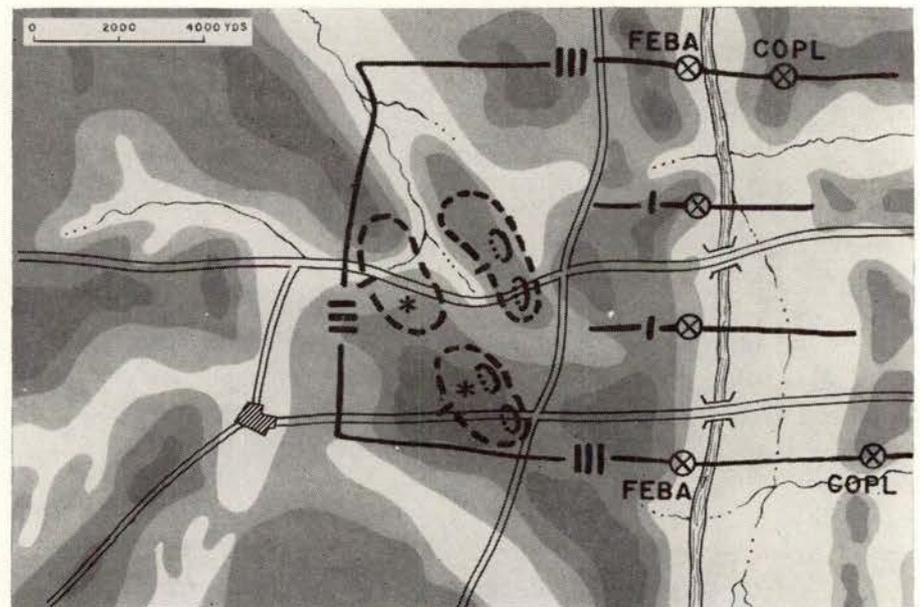
ward rifle companies control the combat outpost and furnish the necessary rifle elements. Tanks are furnished by attachment from those available to the battle group.

Before continuing, it is worthwhile to note that this forward battle group is conducting a variation of the position defense, even though the division is conducting a mobile defense.

The southern battle group commander has received the following mission: "Organize, occupy and defend assigned area. Prepare designated switch positions — to be occupied on order. For boundaries and limiting points, see operations overlay." He also received attachments of one medium tank company and two carrier companies (division received additional carriers for this operation). Furthermore, the commander is briefed on division counterattack plans.

Obviously, the extended frontage of 9000 yards calls for the disposition of three companies forward (Figure 4). This battle group commander also selects exact locations of company-size supplementary positions, and he designates primary positions to be oc-

Figure 4. Organization of the defense. The southern battle group commander's disposition of forces. Switch positions designated by the division commander are indicated by an asterisk.



cupied by platoons of the reserve company when they are in the battle area. The companies are prepared to fight a position defense, a delaying action or a combination-type operation. It is interesting to note that under these conditions, the battle group commander decides to control his combat outpost through his reserve rifle company commander. This decision is portrayed by stopping boundaries between forward rifle companies just short of the COPL. There appear to be special circumstances in this situation which make such control highly desirable. First of all, the COPL is located 3000 to 3800 yards forward of the FEBA. At this distance, forward company commanders will experience some difficulty in controlling combat outpost forces. Furthermore, 81mm mortars, from position areas within forward units, cannot adequately support combat outpost forces during the initial stages of their withdrawal. Next, it does not appear that withdrawal of carrier-lifted forces, along predesignated routes, will present any difficult problems of coordination with forward companies. From the standpoint of performance, the commander is convinced that centralized control will increase the effec-

Figure 5. Conduct of the defense (0700 hours). The enemy has advanced to the south, and reconnaissance elements are in contact with forward elements of the northern battle group.

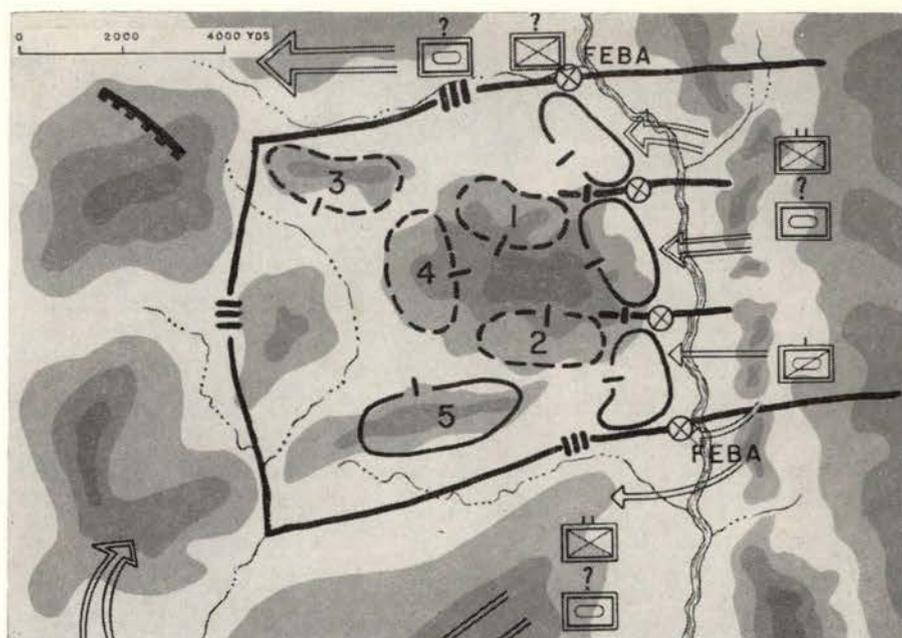


Figure 6. Conduct of the defense (0830 hours). The battle group's flanks and rear are threatened by the enemy advance.

tiveness of the combat outpost. And finally, in view of the over-all concept, it makes sense to have the combat outpost commander report to battle group headquarters directly—rather than through the forward companies. Time saved in receiving and acting on enemy information—particularly atomic targets—may prove

vital to the success of the operation.

We now move into the conduct phase of the operation.

Some days later at 0600 hours, Aggressor Forces, following an atomic preparation, attacked all along the corps front. The situation in the vicinity of the northern battle group at 0700 hours is as shown in Figure 5. Note that the enemy has made a significant advance to the south and that his reconnaissance elements are now in contact with battle group forward elements. Also note that the division reconnaissance units have been redispersed to switch positions in the rear and that platoons of the reserve company of the northern battle group remain in dispersed blocking positions. Let's observe how the commander copes with this situation.

The northern battle group commander has his reserve occupy supplementary position number 5 to extend his flank security. He also takes action to increase surveillance of threatened areas and to insure timely fires on existing and potential enemy targets. He reports all pertinent details to division.

By 0830 the enemy situation has developed as shown in Figure 6. Note

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that major enemy advances have been made to the north and south which threaten the battle group flanks and rear. A battalion-size enemy attack is hitting the left and center companies. At about this time, the division commander calls, quickly reviews the enemy and friendly situations, and asks for recommendations on withdrawal of the battle group. Again it will be interesting to observe actions taken to meet a difficult battlefield problem.

In this situation, the battle group commander requests permission to withdraw and occupy the battle group strongpoint. Deep enemy advances on both flanks dictate a rapid redeployment which will provide maximum all-round defense. The battle group commander makes the decision consistent with his mission, the overall concept of the defense, and the circumstances at hand. Naturally, he requests additional fires to support his withdrawal into the perimeter. He will report all pertinent details to division.

By 1300 hours atomic fires, in conjunction with exploiting counterattacks, have temporarily blunted the Aggressor's assault. All of his attacking echelons are in the process of pulling back to reorganize. However, even though his major force has been severely hurt, this alert foe has detected that the northern battle group is in a vulnerable formation and is a profitable target for his atomic fires. Therefore, he has disposed a reconnaissance screen to contain the battle

group in its present concentrated posture until he can take action to destroy it (Figure 7).

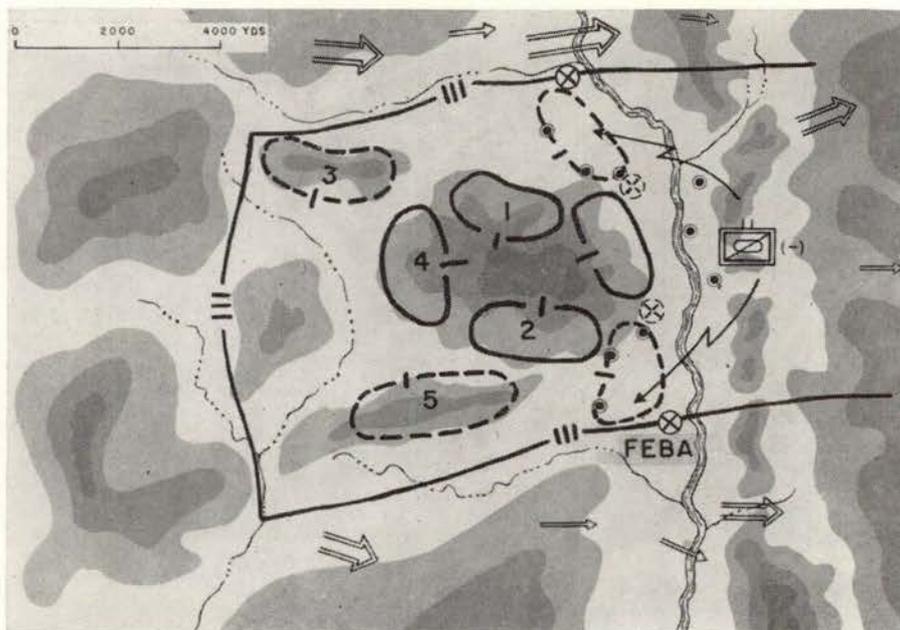
Meanwhile, the battle group commander is not caught unprepared. He has anticipated such a situation. He realizes that the perimeter is highly vulnerable to enemy atomic fires. Therefore, he orders execution of a preplanned, rehearsed attack supported by attached tanks and all available fires. His objectives are to destroy the enemy and to restore original defensive positions along the

forward edge of the battle area. Preparations are made to reestablish COPL forces and maintain contact with the withdrawing enemy forward of the battle area. At the same time the commander increases area surveillance, primarily to detect potential atomic targets. He reports all pertinent details to division and maintains contact with adjacent units.

At this point, let's turn back the clock an hour or so and see what happened elsewhere in the division area. While the northern battle group was holding the critical high ground in its area, other forward forces—reconnaissance units and elements of the southern battle group—conducted a delaying action back to a designated division switch position. An enemy concentration developed, was hit and hurt by atomic strikes and subsequently destroyed by attacks of mechanized reserve battle groups. The characteristics of these mobile offensive actions, in conjunction with employment of atomic fire support, are almost identical to those discussed in "Battle Group in the Attack."¹

¹April 1958 issue of *Infantry*.

Figure 7. Conduct of the defense (1300 hours). Enemy elements are pulling back to reorganize, and a reconnaissance screen is holding the battle group in a concentrated posture.



However, a few basic considerations are worthy of review here. First, the reserve force strikes in such a manner as to exploit and sustain the shock of the atomic and nonatomic fires. The primary objective is maximum destruction of enemy forces—not the seizure of terrain. Second, in conducting such a counterattack, special consideration is given to speed throughout the operation, concentration in the objective area for a minimum period necessary to accomplish the mission, and rapid dispersion and return to predesignated areas. Vulnerability of formations to enemy atomic action is an ever-present, vital factor which influences command actions and decisions.

The situations we have just discussed represent only one way this battle could have gone. Division, and for that matter battle group, commanders must be prepared to engage and defeat attacks from all directions, along all approaches. This calls for maximum flexibility and multiple plans.

At this point, for the benefit of readers who wish to compare position defense with mobile defense, let's look briefly at an Infantry division in the position defense. Figure 8 illustrates a possible disposition of combat forces within the battle area. Note that the bulk of the available force (three reinforced battle groups) occupies the forward defensive area, while reserves are smaller than previously noted in the mobile defense. Frontages for the division and the battle groups are reduced. At the latter command level, there are two basic defensive formations: the "T" and the square. Disposing two companies forward, and two in reserve in columnar depth, will give a battle group commander an excellent counterattack capability. On the other hand, disposing two companies forward and the two reserve companies laterally across the rear area will give better over-all blocking capability. The mission, enemy capabilities, available forces and the weather and terrain will indicate the most desir-

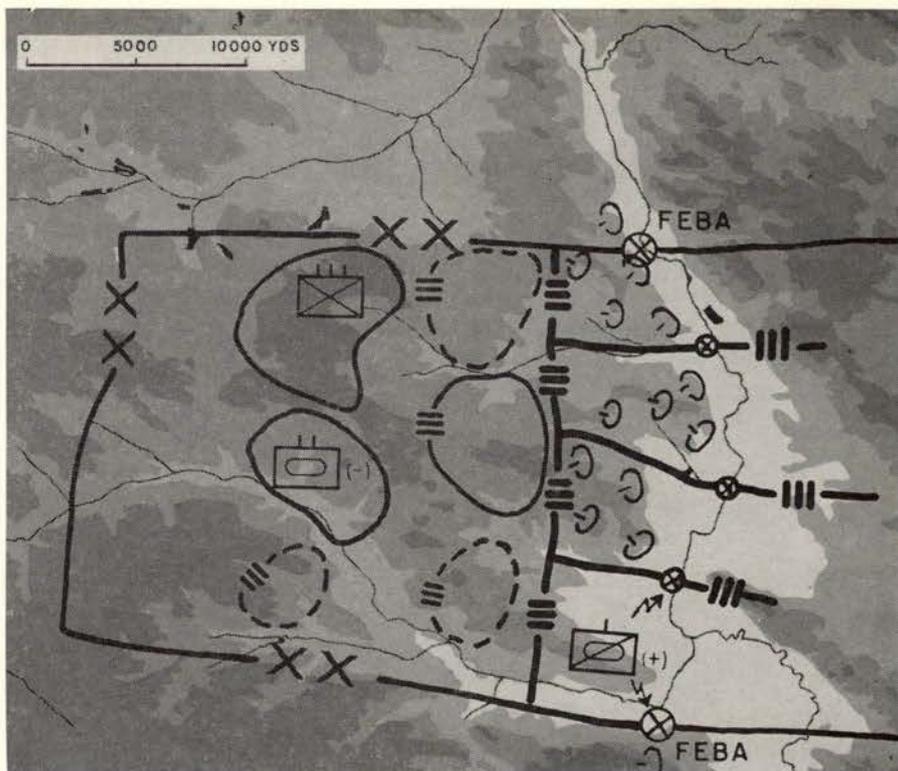


Figure 8. Disposition of combat forces if the division were conducting a position defense.

able disposition for any situation. Naturally, attachments which increase battle group and company mobility can exert a great influence on the formation adopted. The capability for rapid redistribution of forces must not be overlooked. In the conduct phase, forward units fight the defensive battle by employing fire and close combat to stop the enemy forward of the battle area. Reserves block or eject enemy penetrations. Emphasis is placed on holding terrain and denying critical areas to the enemy—as opposed to destruction of enemy forces. Because position defense is more or less anchored to the terrain, it is not the preferred type of defense in an atomic war.

Defense—any defense—has always presented a difficult and challenging problem because the attacker holds the advantage of initiative. The introduction of atomic weapons on both sides has compounded the defending commander's problems. Looking toward the future, we see that basic considerations of defense must be applied for reasons of survival—as well

as to defeat the enemy. Furthermore, we must recognize that defense is merely a temporary expedient until we can attack. We must never forget that it will take decisive offensive operations to win wars in the future as it has in the past. This brings us back to mobile defense.

We've seen that this type of defense probably will be preferred in an atomic war. It regains some initiative for the defender. It applies the two important considerations of our new defense concepts: *maximum use of offensive action* and *maximum dispersion consistent with the mission*. Division or corps organizes and conducts the mobile defense; battle groups participate by defending, delaying or attacking, as directed.

While these tactics cannot be expected to be the final answer to the defending commander's dilemma, the principles and techniques discussed provide a sound, progressive framework for the continued development of improved defensive doctrine.

By Col John Dibble, Jr.

OF WORDS AND WEEDS

and nice clear print

You can write. You should write—for your own benefit and for the good of the service. Here are a few tips on how to go about it and how to get your effort into print.



“**Y**OU really ought to write something to help the Army, something that’s good for the service.”

This is a profound come-on that’s put up, at some time in his career, to almost every Army officer, particularly if it is known that he has had so much as a freshman course in English. Usually the bait is passed out at some sociable place such as the nineteenth hole or at a Sunday afternoon barbecue, where the writer-elect has made statements which impressed his listeners that he has the world’s problems firmly in hand. Stimulated by this attention, or by the attractive idea of

making a few dollars to bolster next month’s paycheck, he somehow finds himself sitting down with a blank sheet of paper and a sharp pencil in front of him.

For a while he engages in mental gymnastics which are called “marshaling one’s thoughts.” This normally is accompanied by several trips to inspect the inside of the refrigerator, and a walk around the yard, if the weather is good, to note the progress of the weeds in the lawn. In the meantime, his thoughts run something like this:

“I really had a good idea there

about atomic stalemate and the resulting requirement for Infantrymen with their boots planked firmly astride the objective—wonder if that’s too controversial? Maybe I ought to tone it down, but if I do, it’ll lose its punch. Maybe it’s been done before . . . I’m no atomic expert . . . Probably an article on some of my experiences would be better . . . Experiences, my eye! Who do I think I am, General Grant? . . . No, this has got to be high level . . . The Army’s role in the current geopolitical conflict. Boy, that would stop them . . . Too bad I don’t know any more about it than what I read in the newspapers.”

At this point, the budding author decides that he’d better do something about weeding the lawn.

There are two very discouraging periods which face the would-be writer. The first is the shock of getting ideas lined up so that they justify dirtying a piece of paper. The second blow comes when the publisher sends the manuscript back, saying that if the piece is cut in half and completely rewritten there’s an outside chance it may be published. These periods don’t demand genius or inspiration. They require concentration and optimism.

The power to concentrate is something the writer must develop for himself. It varies with the amount of interest he has in his subject and the degree to which his family will quiet down and let him think. The purpose of this particular article is to bolster the would-be writer’s optimism by offering a few basic suggestions on how to write and how to get his effort into print. If you will pardon a personal experience, I’ll try to show you that I fit the definition, “an optimist is a man with very little experience.”

My very little experience started in Europe in 1951, when I carefully put together in my best staff officer’s jargon a powerful, learned sermon on the orderly development of leadership. I got it coordinated in the EUCOM staff, put it into a format suggested by the PIO and sent it directly to the *Army Combat Forces Journal*. A

month later it was back with a polite note saying that articles on leadership were a drug on the market at that particular time, so I tore it up and decided that writing was for somebody else.

Five years later I was in the Pentagon, just assigned to the Foreign Military Training Branch, and convinced that foreign training was a fascinating subject. Again the urge to write hit me. I did a 2000-word article in what I hoped was an informal style, and here was where I first ran into the Magazine and Book Branch in the office of the Chief of Information. The first thing I received from this office was a form to follow in preparing the manuscript. This, they tell me, is available from any PIO. Then the people there read over my article and cleared it for security with Department of the Army and even with the office of the Secretary of Defense. After all this they sent it back to me, recommending a few anecdotes and stories to lighten the article and to give it some punch. After I'd rewritten it, they sent it in to *Army* magazine, and to my surprise the article was accepted. *Army* dressed it up with some of Lt Colonel McLachlin's fine illustrations, and the printing came out nice and clear.

The joy of parenthood, plus the warm feeling of holding a little extra cash in my hand, led me to try another story. Lt Colonel Jim Chesnutt, who is Chief of the Magazine & Book Branch, was a little dubious about its 12,000-word length, but he sent it to the *Saturday Evening Post* with a nice personal note to the editor.

It was returned with some poignant remarks about cutting it to 5000 words and putting some meat on its bones. After a month I'd boiled it down and sent it back with no hope that anyone in his right mind would buy it. Two weeks later, Jim Chesnutt was standing in my door, bearing the good news that the *Saturday Evening Post* had decided to buy the article for the beginner's rate of \$750.

Then I thought about the Magazine and Book Branch and the work it

had done to get a sale for an Army writer whom it didn't know from Adam. There was no agent's fee, but a number of people there had put as much interest and effort into their work as though they were pulling down a ten percent commission. The more I thought of it, the more apparent it became that here was a fringe benefit that is available to the whole Army but is probably not too well-known. An investigation into the work this office is doing for the Army writer, coupled with my own fortunate personal experience with it, is the basis for the optimism I mentioned before. Also, my investigation showed that there aren't enough Army people writing. In 1956, for example, only about 1300 manuscripts were cleared through the Magazine and Book Branch. This doesn't mean that there were 1300 authors because a number of writers submitted more than one article. Of these 1300, the authors requested the branch to place only 578. This is a point that most writers don't understand. The Magazine and Book Branch can accept an article for *placement*, meaning that it will try to get it published; for *sale*, meaning that in addition to getting it into print it will try to get you money for your effort; or simply for *clearance and return*, which means that it's up to you to place or sell your article. Of course, all this applies only to fact or fiction articles on military or related subjects, which fall under the clearance requirements of AR 360-5. The "literary agency" service is available only

to Army personnel on active duty and to civilian employees of the Department of the Army, as these alone are required to obtain clearance of manuscripts prior to submission to a publisher.

When it sets about placing or selling an article, the Magazine and Book Branch leans over backward to give the author the best possible chance. Often seven, eight, or even as many as eleven attempts will be made to get the article into print, and these efforts pay off. During 1956, publishers accepted 131 of the 578 manuscripts handled for placement. In other words the average was better than 22 percent. The figures for 1957 tell the same story. The branch placed 151 articles. When one considers that most of the authors were comparative beginners in the writing business, the record is impressive.

Most Army writers, however, write for an Army audience. This is natural, since they are writing about things they know and about their daily work. As a result, most of the Army writers' attempts appear in Army magazines or other service journals. But this doesn't get the Army story widely told to the general public. It doesn't even get it told to our sister services. While it is important that we keep one another informed, indoctrinated and encouraged, it is equally important that we tell the Army's story to the American people. The average civilian is interested in the Army, and the average Army writer has a wealth of varied experience from which to draw

COL JOHN DIBBLE, JR. is a 1940 graduate of the United States Military Academy. During World War II, he served as a staff officer with the 7th Tank Destroyer Group at Fort Hood and in the European Theater of Operations. He later became commanding officer of the 705th Tank Destroyer Battalion. After the war, he was an instructor at the Artillery School for three years, and then returned to Europe where he served with the Logistics Division at Headquarters, European Command. He was graduated from the Command and General Staff College in 1953, following which he served with the Career Management Division and with the Office of the Deputy Chief of Staff for Military Operations at Department of the Army. Colonel Dibble has just graduated from the United States Army War College.

an interesting tale. We should do more writing.

What can you do that will help sell a story? First, tie your story to reality! Use plausible examples and anecdotes. People remember the parables in the New Testament better than they remember the flat statements that the parables illustrate.

Second, use a light touch and short sentences. Give the reader credit for some intelligence and imagination. Lead him to your point pleasantly. Don't bludgeon him to it with a 20-pound club. And don't preach. The civilian doesn't want this from an Army writer.

Third, if 2000 words will get your point across, hold it down to 2000.

Avoid going over 5000 words unless you have a hot serial piece or are writing a book.

There are hundreds of other points—such as using good English; organizing your story; the old principles of unity, coherence and emphasis—but the three that I've listed should give your effort the appeal needed to sell it.

After you've hatched your brainchild, the important thing is to get it into print. The best way open to you is to put it into an envelope and address it to the Magazine and Book Branch, Office of the Chief of Information, Department of the Army, Washington 25, D. C. Inclose a letter saying whether you want your story

merely *cleared*, or *cleared* and then *placed* or *sold*. The Magazine and Book Branch will go all-out to help and encourage any writer who shows promise. It is in constant contact with magazine publishers, and most magazines are looking for new authors. As an example, the *Saturday Evening Post* is written 90 percent by freelance writers, and the editors know that the life of the *Post* depends on turning up new writers. *Infantry* and *Army* magazines have the same problem, and the editors feel that the week they don't uncover a new writer is a bad week. You may be the new writer. Who cares if there are a few weeds in your lawn?

WRITE FOR INFANTRY

You don't have to be a professional author to write for *Infantry*. What you have to say as a professional soldier can be more important than the manner in which you say it. If you have knowledge or experience which will help to improve the Infantry or which will enable other Infantrymen to do a better job, get it down on paper. Then send it either to the Magazine & Book Branch, Public Information Division, Office of the Chief of Information, Department of the Army or directly to the Infantry School. The editorial staff of *Infantry* will help you to put it into suitable form for publication.

Infantry is your professional journal. It is published to keep Infantrymen and the members of the other branches and services who work with the Infantry up-to-date on Infantry doctrine and techniques. It covers changes and new developments in organization and equipment for the Infantry, including the Rangers and Airborne Infantry. And it discusses trends and ideas which will stimulate constructive thinking. Much of the material in past issues of *Infantry* has come from the various instructional departments of the Infantry School. This is to be expected since much of the doctrine and many of the new developments originate at the School. However, we need more

articles from writers in Infantry units and in other assignments throughout the Army. We are particularly interested in material which discusses field experience with the new pentomic organization and with new weapons and equipment. We need articles on new techniques which you or your units have developed. We want your ideas on ways to improve our training and combat effectiveness. And we want forward thinking which will lead to new developments.

Writing for *Infantry* can be beneficial to you, both professionally and financially. When your article is published it will be widely read and your name will be associated with it — with all the prestige that accrues to official and professional material published by the United State Army Infantry School. And you will be paid for your effort at a rate which normally varies between one and two cents per word, depending upon the total word count of the articles in the issue in which it is published.

Manuscripts submitted to *Infantry* should be double or triple-spaced on one side of either legal or standard sized paper. While not mandatory, a second copy of the manuscript will be helpful to the editorial staff. Photographs, charts, ideas for art or other material which can be used to illustrate the article, and a brief biographical sketch of the author should accompany the manuscript.

You can write. You should write. Why not get started today? Let us hear from you.



Let's give training back to the commander

The committee system of training was best for our emergency requirements during World War II but it does not meet our needs today. Let's go back to unit training.

By Brig Gen Joseph B. Crawford

UNDER the guise of efficiency we have been turning a giant crank on our basic training machine and mass-producing committee-trained troops by the thousands. What has happened to the day when the commander took a recruit by the hand—or by the breeches—and personally led him through basic training? Assisted by his own officers and non-commissioned officers, the commander gave each new man the benefit of his personal wealth of experience and

training, and developed the recruit into a proficient soldier.

The word "recruit" (from the Latin word *recrescere* meaning "to grow again") was used to describe the new man who would replace a loss and who would permit the unit to grow to its original size and effectiveness. Let's stop turning the crank and go back to unit training. Let's give our units a chance to "grow again."

The committee system, as we know it today, developed and was matured

by the vast and hurried requirements of World War II. During that period there were drastic shortages of qualified instructors, time and facilities. The committee system was the most feasible to give basic training to the quantity of men we needed. Our rapidly expanding numbers required that control be centralized to facilitate the quick dissemination of orders and information. With combat-zone commanders screaming for replacements, we could not afford the time and ef-

BRIG GEN JOSEPH B. CRAWFORD was an enlisted member of the Kansas National Guard for two years before entering the United States Military Academy, from which he was graduated in 1933. Prior to World War II he served in Infantry assignments in the United States and Puerto Rico. During the war, he fought in North Africa, Sicily and Italy with various Infantry organizations. He then was assigned for two years to the War Department General Staff and later was named G3, Military District of Washington. He began a four-year assignment on the faculty of the Command and General Staff College in 1946, and he was graduated from the Army War College in 1951. During the Korean War he served first with the General Staff of the Far East Command, then as assistant division commander of both the 24th and 25th Infantry Divisions. Returning to the States, he was assigned to the Office of the Deputy Chief of Staff for Personnel, DA, before becoming assistant division commander and later commander of the 9th Infantry Division and Fort Carson. Early this year General Crawford was named Army Attache, American Embassy, in England.

fort to develop a completely trained soldier. Consequently, every trainee was placed into a standardized mold and shaped as much as possible to the desired level of training in a minimum of time. The growing number of organizations and installations participating in basic training, as well as the relative inexperience of many unit commanders, demanded a tremendous amount of centralization and standardization.

As the Army continued to expand, our experienced manpower was pooled at higher and higher echelons to make personnel available for other activities. Similar pooling was necessary for training facilities and equipment. Such a situation required that basic training provide only the bare necessities of soldiering. Final polishing, it was hoped, would come later in the unit to which the soldier was assigned. Despite the press of time, the committee system proved its worth. It standardized instruction and saved time, personnel and material. Committee instructors were released from the details of unit administration and were able to concentrate on their instruction. This, however, placed additional administrative and informal instructional demands on those who were left in the unit.

But the emergencies of that major conflict have passed. We are con-

cerned today with keeping our forces strong enough to deter armed aggression anywhere in the world, and with keeping open the channels of full-scale mobilization. Our desired levels of strength and proficiency no longer present an overriding necessity for standardization or economies in time, manpower and material. We do not have an urgent requirement for a large degree of centralized control. To the contrary, we are faced with the task of building and maintaining a highly proficient standing Army and

with the training of junior officers and noncommissioned officers. We are faced also with the problem of keeping our trained men in the service. There is enough time now and there are sufficient facilities to do these things and to do them well.

I want to advance some ideas on how this can be done. I hasten to add, however, that these thoughts are not necessarily a complete solution, but certainly they are part of the solution. These ideas are not new. They are, in fact, as old as warfare itself.

Every noncommissioned officer worth his salt feels it his duty to mold the men under him into a razor-sharp fighting team. It is the dream of every officer to have his own command. In many cases, especially in basic training, we are stifling these desires. We are still using the emergency measures of World War II when the emergency no longer exists. A committee system is fine for such activities as service schools, where highly specialized or technical instruction is given. But why use such a system in basic training? With only average instructors the unit can accomplish the same training and, at the same time, realize many fringe benefits. Let's give training back to the commander.

We are familiar with the axiom that

Each trainee gets a maximum of instruction . . .



a commander is responsible for everything that happens or fails to happen within his command. But the axiom is difficult to apply under the committee system. This method of presenting basic training all but reduces the commander to a housekeeper, with housekeeping occupying a disproportionate share of his energies. Unit training, on the other hand, restores to him one of his primary duties—that of training his men. It gives him the opportunity to train not only individual soldiers, but a team. If he is not over-supervised, it puts him back in the driver's seat with direct control over the training of his unit. It gives him greater flexibility in adapting training to fit the situation. With unit instruction, the trainees become *his* men, and he takes a more direct and personal interest in their development. He is once again a commander — a commander who must use his own initiative, leadership, ingenuity and experience.

As the "old man" again assumes all the responsibilities of command, he delegates many of his duties to his junior officers. They, in turn, acquire much needed experience. The officer on a committee gets little opportunity to grow while he is engaged in the repetitious teaching of one or even a number of subjects. Too often such teaching is no more than the communication of information from the instructor's lesson plan to the trainee's notebook, without any real knowledge sticking in the minds of either. Similarly, the officer left in the unit to handle supply, run the mess or guide the trainees to and from class fails to get the experience he really needs.

General Willard G. Wyman, Commanding General of United States Continental Army Command, stated recently, "There is a crying need in the Army today for young commanders with the ability to think and act decisively under the pressures and complexities of modern battle." Our junior officer must develop leadership and a sense of responsibility. He must have professional experience. The unit system will help him in these areas.



Junior officers and field cadre know their men . . .

It will produce an officer capable of taking over as commander at a moment's notice, instead of developing an expert on running an infiltration course.

Concurrently, we must also develop and maintain the noncommissioned officer's proficiency. Under the unit system the trainee is constantly in cadre hands. No committee takes him away for the bulk of the working day. The noncommissioned officer leads and teaches around the clock.

During each unit training cycle, a sergeant will throw grenades, fire weapons and evaluate his squad's performance. He will face more problems than just meeting class starting times. As he is given more responsibilities, his activities become much more varied and more colorful. And the logical response to more interesting work is increased productivity.

The commander, when he is held directly responsible for the level of his unit's training, insures that each trainee gets a maximum of instruction. His junior officers and field cadre know their men. They know the ones who are deficient and they know, also, what instruction is needed to bring them up to the level of the rest of the unit. With unit training, they will see to it that *their* men get the necessary individual attention.

When a committee instructor faces a group of strangers with a standardized lesson plan, he violates an important teaching principle. There is no assurance that his teaching is based on what the student already knows. On the other hand, a unit cadreman can start at what he *knows* to be the class level—not what it *should* be. This adds flexibility to the training program and insures better instruction. There is greater continuity where the same instructors perform the bulk of instruction. With all of the officers and field cadre of a unit giving the instruction, there is a closer relationship between student and teacher, and a mutual understanding of the problems of each.

Control and administration under the unit training system are much easier. Unit integrity is maintained. Officers and noncommissioned officers function as a unit, instead of being scattered on a variety of committees. There is a higher level of morale when officers and men of the same outfit work together toward a common goal. Discipline problems, too, are fewer and easier to cope with. This all adds up to high esprit. "This is my unit." "I'm training my troops." "My platoon is the best." "I belong."

I do not claim that unit training is a panacea. The system has some

drawbacks which must be considered before such a program is implemented. Whenever five units within a command conduct the same training, there is some duplication of effort and an extra requirement for coordination. Critics will say the quality of instruction suffers. They forget, however, that it is not necessary to have professional instructors to teach effectively something as elementary as

Figure 1.

HEADQUARTERS	
Company Commander	
Executive Officer	
First Sergeant	
Clerk	
Training NCO	
Mess Sergeant	
Cooks (6)	
Supply Sergeant	
Armorer	
Mail Clerk and TIE Dayroom	
Orderly (combined)	
Drivers (3)	
FIELD	
Platoon Leaders (4)	
Field First Sergeant	
Platoon Sergeants (4)	
Squad Leaders (16)	

basic training. Another disadvantage is the time which instructors must give to normal unit duties. Preparation and rehearsal time is thereby limited. This focuses attention on the primary prerequisite of unit training—sufficient qualified personnel. For a company of 250 trainees, the minimum cadre *present for duty* should be approximately six officers and 37 enlisted men (Figure 1).

Of course, there is always a drain on personnel by such things as TDY, SD, schools, leave, confinement and discharge. Therefore, it is recommended that a unit have a cadre overstrength of about 25 percent. Unless the minimum figures are closely approximated, unit training becomes difficult to administer.

Our mission today is to build and maintain the best trained and most efficient peacetime Army in our history. We have the time, manpower, experience and facilities to accomplish this. Why should we be satisfied with the crash measures of World War II when they are no longer needed?

I have not hesitated to speak out, because we have tested these ideas in the 9th Infantry Division at Fort Carson, and they work! On the first of

December, 1957, the 9th Division returned to the unit training system.

Despite a lack of personnel, the conversion has met with marked success. First, and most important, the degree of training proficiency has increased, even though the number of training cadre per company has remained much the same. By tapping the brainpower of our noncommissioned officers, we have injected new life into our training units. Our NCOs are putting more and more time and effort into the training of their platoons. Needless to say, unit commanders have responded with enthusiasm to their added responsibilities. By the same token, junior officers find their jobs more interesting and self-satisfying. We have seen many examples of their ingenuity, resourcefulness and aggressiveness, all of which enhance their ability to think and act decisively under the stresses of the modern battlefield. And, finally, the intangibles of morale, control and discipline are beginning to manifest themselves more strongly in our daily operations.

In the 9th Division we are convinced that we have a most effective system of basic training. We say, "Let's give training back to the commander."

NEW NAVIGATIONAL SYSTEM

A navigational system, designed to control air, ground and missile operations beyond the line of sight, has been perfected for use by the future field army. Developed originally for control of air and marine traffic, the system has been adapted to monitor closely knit tactical operations.

The system would provide an army field headquarters with a "fix" on all fighting units under its immediate command. Tank commanders, troop vehicles, helicopter pilots and artillery spotters would be provided with a minute-by-minute "road map" whether on the attack or on defense.

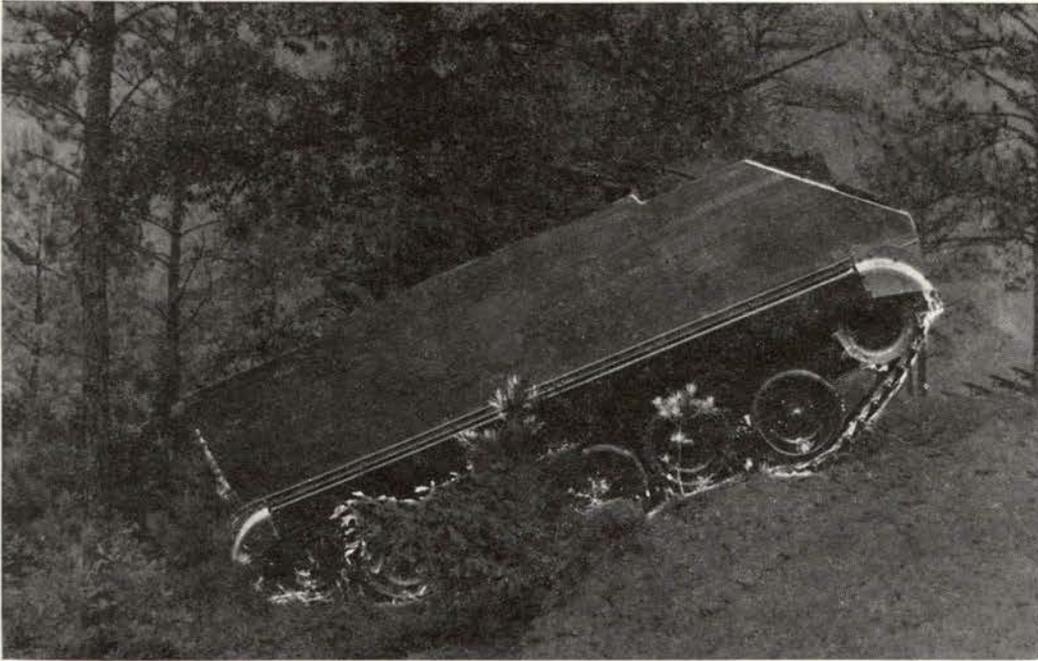
This new method of control is a low-frequency area-coverage navigational system assuring operations beyond

the line of sight and below the horizon. The system is reported to be accurate to within 20 feet, on or above a battleground at all altitudes, behind hills and other obstructions and in all weather.

During operation, pairs of "master" and "slave" sending stations transmit wave patterns occupying precisely known and stable geographical positions to form position lines, or "electronic highways." These "highways" are picked up by receivers in a vehicle, plane, helicopter or fixed field unit and automatically computed and displayed visually on standard army maps and charts.

By employing the new system, a field commander at headquarters behind the battle line will be provided with a continuous pictorial display visually tracing on standard maps the location and course of fixed-wing aircraft, helicopters, ground vehicles and troops. The system also has certain capabilities that make it adaptable to missile operation.

*We must be able to navigate the modern battlefield
in carriers and other vehicles under any condition of visibility
and without the aid of maps, roads or terrain features.*



VEHICLE NAVIGATION

By Capt Davant T. Williams

WE have entered an era in which tactical concepts place ever-increasing emphasis on cross-country mobility. This is an era in which highly mobile Infantry units will operate from their own armor-protected personnel carriers. Infantry commanders must be able to achieve great mobility in combat operations under conditions of reduced visibility and over the barren, unfamiliar terrain of the atomic battlefield. This presents an unprecedented requirement for accuracy in

the navigation of Infantry vehicles. The outstanding capabilities of the carrier must be matched by an equally outstanding system of vehicle navigation.

Just what does the Infantryman require in such a system? Ideally, he must be able to operate under any condition of visibility. Darkness, fog, smoke, dust or "buttoning-up" must not limit his movements. The system should have an all-weather capability. Aerial and marine navigational systems always have been hampered by bad weather, but cloudy skies and other unfavorable conditions must not restrict the Infantryman's ability to

move over the battlefield or to direct his carriers to assigned objectives. The system must not be wholly dependent on maps. We do not have access to many of the world areas in which future combat operations may be necessary. Therefore, we cannot be sure that we will always have an accurate and adequate map supply. Nor should the system depend on the use of roads as navigational aids. Enemy surveillance and nuclear capabilities may completely deny the use of road nets in future operations. Furthermore, while any system of land-vehicle navigation must utilize terrain to some extent, the Infantryman cannot

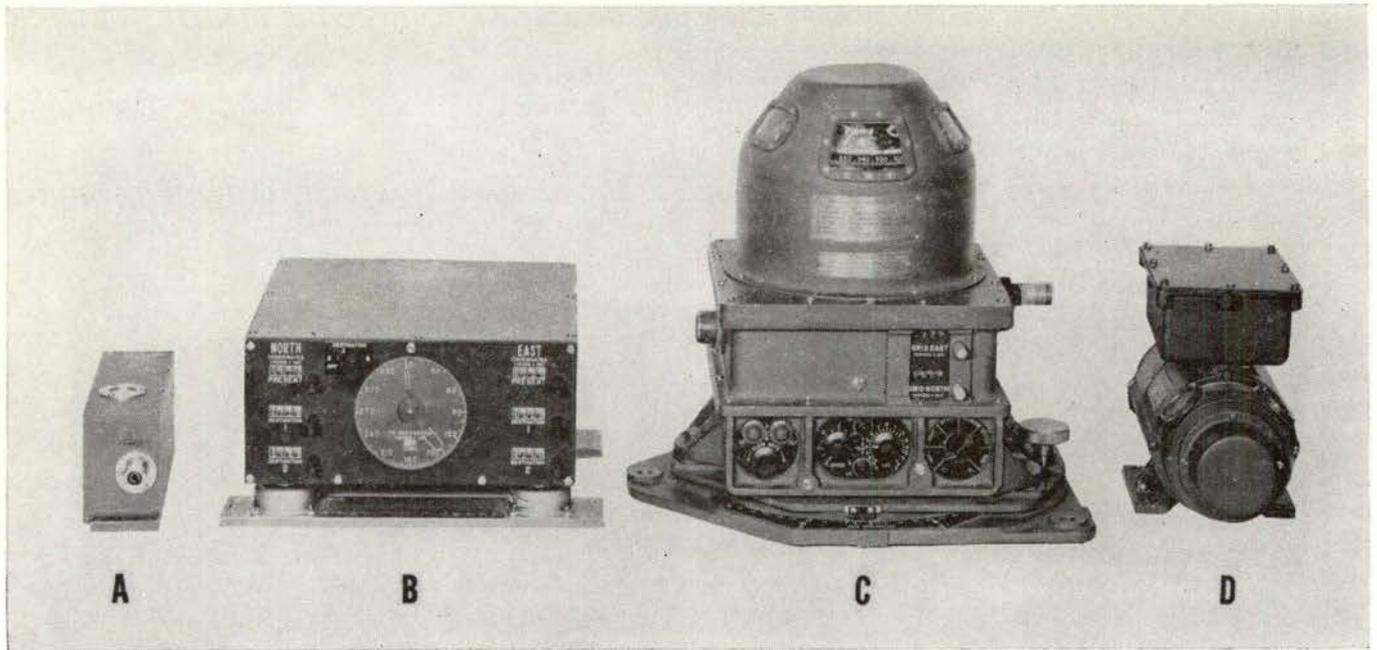


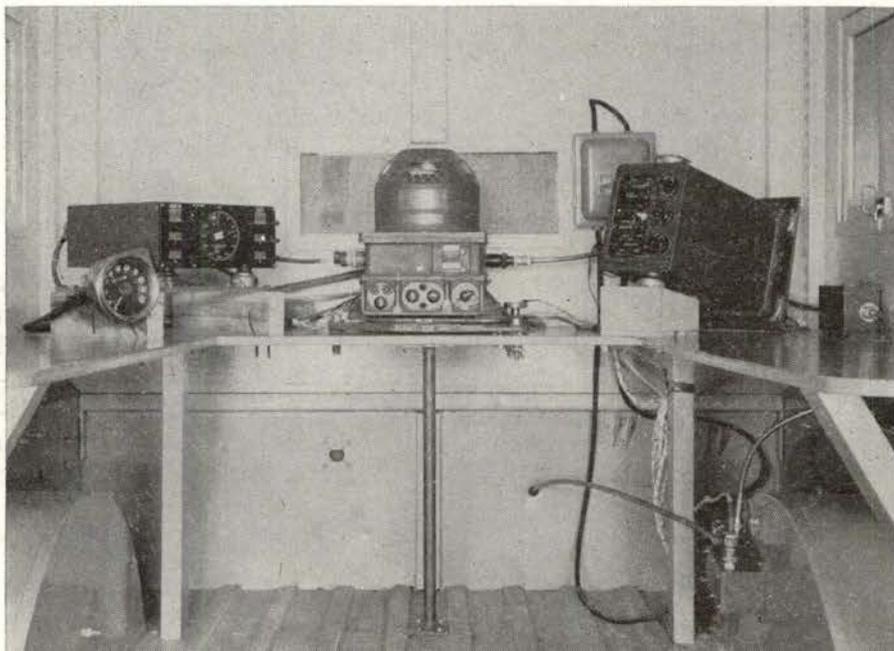
Figure 1. Components of a vehicle navigation system which is presently undergoing service tests. A—*Odometer Correction Unit*. This device weighs five pounds, and measures 2¾" by 4½" by 10½". B—*Position Indicating Computer (Arma)*. This unit weighs 24 pounds six ounces, and measures 6¾" by 12" by 12". C—*Subminiature Gyro Compass*, Engineer test model. This component weighs 35 pounds, and measures 10" by 10" by 12". D—*Power Supply*. This unit weighs 24 pounds, 13 ounces, and measures 9" by 6" by 11".

rely exclusively on reference to natural terrain features for orientation. Many likely areas of operation, such as desert and arctic regions, lack well-defined features, and others, particularly mountainous areas, present navigational problems because of an overabundance of repetitious terrain.

To summarize these considerations,

the Infantryman must be able to navigate the carrier accurately under any condition of visibility, under any condition of weather, with or without the use of maps, with or without the use of roads, and without complete reliance on natural terrain features. It is apparent that the solution is not a simple one.

Figure 3. The two models of the position indicating computer in a comparative performance test. The computers are mounted for testing purposes in the rear of a modified ¾-ton truck and are both receiving azimuth data from the subminiature gyro compass.



Before we discuss how this requirement can be met, we should consider the Infantryman who will perform the navigational function. While carrier drivers and members of the squad should be trained in navigational techniques, the system we will discuss is built around the individual vehicle commander. The carrier commander must know his exact position at all times, and he must have a simple method of directing his course to an assigned objective.

As with many aspects of modern warfare, the system can be expressed as a formula: $VN=GN+LN$. This is really a mobility formula. VN stands for *vehicle navigation*, GN for *ground navigation* and LN for *land navigation*. It is obvious that a clear distinction must be made between the latter two components. *Ground navigation* is the technique of directing one's course through constant reference to natural terrain features, while *land navigation* is the technique of directing one's course over land by the use of navigational instruments. A combination of both techniques will be

needed to navigate the carrier effectively.

Ground navigation is basic to a system of carrier navigation since it utilizes map-reading skills already possessed by the Infantryman. And since it depends on reference to natural terrain features rather than man-made objects, such as roads and buildings, it is ideal for cross-country operation. However, to appreciate fully the capabilities of this technique, its limitations must be understood. Ground navigation methods are somewhat slow because the navigator must make continual reference to the terrain, often stopping for careful orientation of map contours with ground contours. Also, fairly accurate maps are required. Other limitations of ground navigation are its dependence on identifiable terrain features for reference and its requirement for visual contact with the terrain.

Because of these limitations, the carrier navigator must augment ground navigation with land navigational instruments. These instruments become increasingly important when speed is essential, when accurate maps

are lacking and when terrain definition or visibility is poor.

There are several navigational systems which employ instruments and which might be applicable to carrier navigation. One of these is *celestial navigation*. This is a tried and proven method which actually can be used even more accurately on land than at sea. However, considerable training is required before an individual can use the system reliably, and it is ineffective when skies are cloudy. Therefore, it is not considered practical as the Infantryman's primary method of land navigation.

Another possibility is the use of *radio navigation*. However, the radio is subject to enemy jamming and is affected by weather disturbances, and the more accurate radio navigation systems require extensive ground installations which are not readily adaptable to forward combat areas. Therefore, it too must be discarded as the primary Infantry technique.

The most practical method of carrier navigation involves the use of instruments which augment a very basic technique known as dead reckoning.

Figure 2. Components of another vehicle navigation system which is also undergoing service tests. A—Power Supply. This device weighs 24 pounds, 13 ounces, and measures 9" by 6" by 11". B—Subminiature Gyro Compass, standard model. This unit weighs 35 pounds, and measures 10" by 10" by 12". C—Position Indicating Computer (Ford). This component weighs 45 pounds, and measures 8" by 11½" by 17½". D—Odometer Transmitter. This unit weighs 3 pounds, 10 ounces, and measures 3" by 3" by 5½".

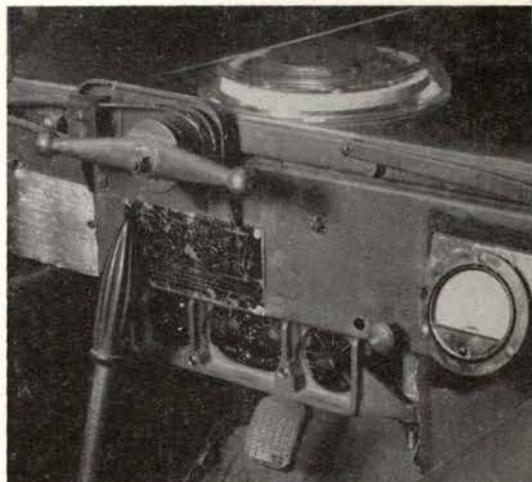
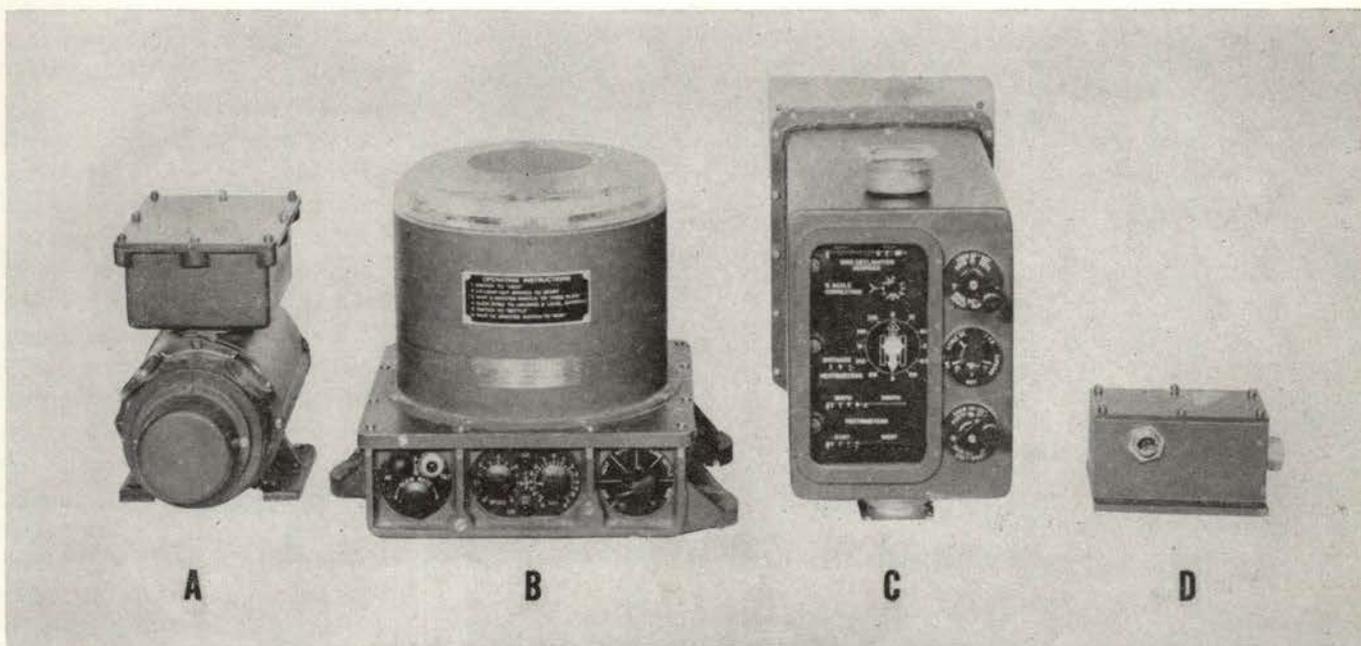


Figure 4. Subminiature gyro compass experimentally mounted in an M-29C (Weasel).

Dead reckoning is simply the determination of present position by the application of distance and direction traveled from the last known position. A major advantage of dead reckoning is that it never fails temporarily or completely.

In order to dead reckon from a vehicle, two elements are needed—distance and direction. Distance in miles and tenths of miles is readily obtainable from the vehicle odometer, and

CAPT DAVANT T. WILLIAMS received an ROTC commission in 1948 when he was graduated from Davidson College. Three years later he was called to active duty and initially served as an instructor with the Staff Department of the Infantry School. He then became commander of a field artillery service battery at Fort Jackson. In 1953 he went to Korea as a weapons advisor and as assistant G1 with the Korean Military Advisory Group. Upon his return to the United States he was assigned to Fort Lewis where he subsequently commanded units of the 9th and 38th Infantry Regiments of the 2d Infantry Division. Last year he returned to Fort Benning and is now chairman of the Movements Committee, Ground Mobility Department, United States Army Infantry School.

if the metric system is preferred, the conversion to meters and kilometers is a simple matter. The determination of direction from inside a combat vehicle, however, presents a more formidable problem. At the present time the Army does not have an accurate compass which can be used inside a personnel carrier. In order to take an accurate azimuth reading with the magnetic compass, the commander must dismount and move away from his vehicle. A gyroscopic compass designed to solve this problem is now under development and will be described later in this article.

Once information on distance and direction is available within the vehicle, data must be plotted. Theoretically, the navigator can do this by use of a map or graph, a protractor and a

straight-edge. However, it is unrealistic to expect a person to accomplish such plotting while bouncing along cross-country in a carrier. What is needed is some sort of automatic plotting device.

The U. S. Army Engineer Research and Development Laboratories at Fort Belvoir are working on a project which should provide the navigational aids needed by the Infantryman for a simple technique of dead reckoning land navigation.

The instrument which has reached the most advanced stage of development is the Subminiature Gyro Compass. It is described as a north-seeking gyroscopic compass powered by the vehicular electrical system. It weighs 35 pounds and measures no more than 12 inches in any direction.

A navigation system will be invaluable for use in vehicles such as the M76 (Otter), particularly when they are operating in arctic regions.

Tests, which have been very successful, indicate that this compass will solve the problem of determining direction from inside a combat vehicle.

Another instrument now under development is the Position Indicating Computer. This device is designed to meet the requirement for automatic plotting. Present models receive distance data from the odometer and directional data from the gyro compass and compute this data into usable information. It enables the vehicle commander to locate his position at any time in eight-digit rectangular coordinates merely by looking at the face of the computer. But the computer will do even more than this. The computer face has a dial with two needles. One needle always points to a preselected destination or objective; the other always points in the direction in which the vehicle is headed. The vehicle is put on course by adjusting its heading until the two needles are aligned. The computer automatically corrects for any deviations in the route and provides a constant reading of the straight-line distance to the objective at any given moment. An alternate objective can also be set into the computer in much the same way that an alternate channel is preselected on a military radio. There is also a provision for setting a correction factor into the system which will automatically correct for errors resulting from variations in track wear, tire pressure, slippage, soil conditions and different types of terrain.

The solution to accurate carrier navigation is twofold. The vehicle commander must have thorough training in ground navigational techniques, and the Infantry personnel carrier must be equipped with land navigational instruments to include a gyro compass and a position-indicating computer. With this combination the carrier commander will know his exact position at all times, and he will have a simple method of directing his course. These capabilities will enable the Infantryman to better exploit his ground mobility on the battlefield of the future.



LT COL ANTHONY L. P. WERMUTH was commissioned a second lieutenant in the Infantry upon graduation from the United States Military Academy and holds a master's degree in English from Columbia University. His first five years of military service were spent as an Infantry company officer in the United States and the Aleutian Islands and as a student at The Infantry School and the Command and General Staff College. In 1945, he was assigned to the G3 Section, Headquarters, Army Ground Forces, and later he became an instructor and assistant professor of English at West Point. Colonel Wermuth went to Germany in 1950 where he served with G1, Headquarters, U.S. Army, Europe and then with J1, Headquarters, U.S. European Command. After a three-year tour as a General Staff officer in the Department of the Army, he commanded the 3rd Battalion of the 21st Infantry Regiment in Korea. Later he commanded a battle group of the 24th Division. He will attend the United States Army War College this fall. Colonel Wermuth has written articles for a number of military publications and is the author of the book, *Portraits from Pentagonia*.

The rifle company commander in the pentomic Infantry division faces problems which require that he be raised in rank from a captain to a major.

RESCUE THE COMPANY COMMANDER

By Lt Col Anthony L. P. Wermuth

AFTER a certain amount of experience with the new pentomic structure, many green-tabbers in the Army, and particularly in the Infantry, will subscribe to the following hypothetical ad:

LOST. Infantry company commander. Last seen disappearing between inexorably expanding responsibilities and increasing subordination to immediate superiors.

The Infantry company commander has held the rank of captain since a company had less than a hundred men and its armament was restricted to muskets. Today in the ROCID division, the company commander has almost 250 men in his company, manning machineguns, mortars, recoilless rifles and many other weapons, and communications to match.

In the fluid, mobile warfare of the future, the company commander will

find himself in a semi-independent situation, commanding the direct-fire support of weapons such as tanks, the indirect fire of artillery and the activities of special groups such as engineers. Who knows what else he may be commanding, coordinating, supervising, or being advised by?

To fill this position, all agree that we will need the same soldierly commander we have always sought, but this time with an even greater measure of such qualities as initiative, independent action and confidence in the exercise of responsibility.

Up to now, with relatively less onerous responsibilities than he bears in the battle group, the company commander has dealt directly with an immediate commander who is a lieutenant colonel, and an executive officer who is a major. The staff directly above him had an S3 who was a major or captain, and other members who were supposed to be captains but

often were lieutenants — as indeed the company commander often was himself.

At best, his captain's bars gave him enough backing to deal with his immediate commanding echelon with a certain amount of fairly even give-and-take. He could hold his own in that crowd. If something was wrong, he could complain about it with verve.

However, his immediate commander is now a colonel, the executive is a lieutenant colonel, and the staff are all majors. Everybody ranks him.

Yet, as he knows and everybody else knows, it's the company commanders who make the Army go.

It might be said, "Oh, it'll work out O.K. With patience and understanding on all sides, it'll work out fine." To be sure, it can work out fine. But some colonels, even good commanders, are not as patient with captains as they were when they were lieutenant colonels. Many captains are even

Letter of Appreciation to The United States Army

Whereas you afforded me the opportunity of receiving a commission at the same time as, and without interruption of, my college education and,

Whereas you accepted me for extended active duty with compensation considerably greater than the starting salary of the average university graduate and,

Whereas you entrusted me, as a young lieutenant, with far more responsibility for men and material than normally would be given to a new junior executive in a business or industrial firm and,

Whereas you gave me valuable experience in a variety of jobs that will stand me in good stead throughout my life and,

Whereas you provided me with other less tangible but nonetheless important benefits, both financial and social, available to few in civilian life and,

Whereas these benefits, with others, added to two extremely profitable years wherein I prospered, matured and increased both in stature and wisdom,

Therefore Do I, Lieutenant of Infantry, express to you my deep appreciation and assure you that I shall stand ready in the Reserve to serve when I am needed.

Loren C. Troescher

LOREN C. TROESCHER
First Lieutenant, Infantry

LT LOREN C. TROESCHER is an Army Reserve officer now doing graduate work at Harvard Graduate School of Business Administration. After receiving an ROTC commission at Ohio University in 1955, he attended the Basic Infantry Officers Course and the Ranger Course at the United States Army Infantry School. He was then assigned to Fort Benning where he ultimately became aide-de-camp to the deputy commanding general of the United States Army Infantry Center. Following this assignment he returned to reserve status to continue his schooling.

less ready and able to go after reconsideration from a colonel than from a lieutenant colonel.

And is it more, or less, likely for the staff of majors to defer to the company commander's desires? Troop commanders have insisted for the past several years that the company commander is in need of less administrative network and greater autonomy in the running of his company, but is he likely to get less, or more, supervision under the new relationships?

The weight of rank is simply going to bend that captain down.

And as the years pass, and Infantry officers find no opportunity for personal experience in command between the grades of captain and colonel, there will develop an increasingly larger number of dead spaces in the colonel's ready understanding of many important factors of company command.

There are two alternative solutions by which the company commander may be rescued.

One, reduce the ranks of the battle group commander and staff. Because I regard this solution as not only unwise and unworkable, but also as impossible of accomplishment, I spend no further time on it.

The other solution is to raise the rank of the Infantry company commander to major, as the British have done. The second-in-command could well be a captain, and the rest of the officers lieutenants.

The list of advantages in doing so would include counters to the disadvantages cited above. It can also be noted that this change would generate some rather far-reaching influences of its own. The overriding advantage, however, is that, for the good of his company, the company commander will be able to hold his own with his commander and staff. And, to paraphrase a fairly well-known opinion of a few years back, "What is good for the company is good for the Army."

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.

COMMUNICATIONS, PLEASE!

Despite significant improvements in our communications since World War II, we still lack an adequate communication system in the rifle company, particularly at platoon and squad level. We must be more active in the development of requirements for new equipment and we must improve our communications training and maintenance.

By Col John T. Corley

WHY is it that no one really appreciates the many wonderful things we possess until they are taken from us? Let us consider for example, the ability to speak or to hear. No one can appreciate these senses more than the individual who has been deprived of them. So it is with the inexperienced commander who takes communication as a matter of fact. Only after communication has failed and the operation has gone competely "snafu" is the lesson of communications as a means of command driven home; only then does he really appreciate what he no longer possesses. Good communications will provide effective control of subordinate elements and fire support means. Without control there is no command.

The importance of communications as an extension of their command control is recognized by successful commanders at all echelons of command. The higher the command, the more complex and elaborate are the communications which are installed to give the commander control over his subordinate units. Recently a very successful World War II division and corps commander was questioned on what equipment not available to him in World War II, but which is now available to the pentomic division, would he have wanted the most. His answer was, "My number one choice would be the modern communications now available."

COL JOHN T. CORLEY was graduated from the United States Military Academy in 1938. Throughout World War II he served with the 26th Infantry Regiment in North Africa, Sicily and the European Theater of Operations becoming the most decorated battalion commander of the war. After the war he returned to the Military Academy as a tactical officer. He was graduated from the Command and General Staff College in 1948, following which he became assistant G1, First United States Army. During the Korean War he served first as a battalion commander in the 25th Infantry Division and later as commander of the 24th Infantry Regiment. He then was assigned to the Office of the Chief of Army Field Forces. After graduation from the Army War College in 1954 he was named G1, Seventh United States Army in Europe. Two years ago he became director of the Infantry School's Communication Department. He now heads the Ranger Department.

The improvements in communication since World War II have been really tremendous. Modern communication facilities and techniques have replaced the now outmoded facilities and techniques at both battle group and division. Within the battle group, we now have available to the battle group commander twelve radio-wire integrated channels to the division CP. These channels eliminate the long metallic wire lines used in World War II between the division and the regimental command post. These new channels permit a great increase in the flexibility of our integrated wire system. In addition to this system, the battle group commander has available to him three high-powered radios with which he can communicate with the division CP. Two of these are the AN/GRC-46 radios, which have a rated voice range of fifty miles. In addition to voice transmission capability, this radio has been designed to provide CW and radio-teletype transmission at even greater rated ranges.

In addition, the battle group is issued one AN/GRC-19. This radio has the same characteristics as the AN/GRC-46 with the exception that it does not have a teletypewriter capability.

One of the best improvements within the battle group has been the issuance of a vehicular ten-mile voice radio to the rifle company commanders. This need has existed for a long time; with this radio now in the hands of the rifle company commander, a great deal of flexibility has been added to the battle group.

There are still areas within the battle group that are in dire need of improvement. One particular area is the communication system within the rifle company. From a user viewpoint, no marked improvement has been made in the rifle company communication picture since World War II. The company commander still operates his company command net with a set that has the identical rated range as the radio used in World War II. This

range was marginal in World War II and of limited use in Korea. The platoon leader of today has essentially the same communication equipment used in World War II.

Development wise, technical improvements have been made in the frequency range covered, battery life, maintenance factor and reliability of the current voice command equipment used in the rifle company. Further, this equipment is interoperable over its entire frequency range with the other tactical FM voice radios used by Armor, Artillery and Infantry units. However, there must be a closer tie-in between the developer and user, so that two different viewpoints do not exist with regard to an item of signal equipment. The Infantryman must for his part place an Infantry imprint on the development of requirements for new equipment.

Another major problem is the lack of adequate communication equipment below platoon level. The platoon leader is able, through existing communication equipment, to communicate up the chain of command but not down to the level where control is most difficult. Reliable communication equipment at the platoon, squad, and fire team leader level would reduce the exposure of small-unit leaders and speed up reaction time at this level. If communication equipment, such as a radio, were available within the platoon it would complete the modern communication system installed at higher echelons of command.

For many years, the Armored Infantry has operated with radios at the squad and platoon level of command. The ROTAD division has also modernized its communication within the rifle company. For some unknown reason, the line Infantry rifle company continues to try to operate a communication system of too limited capability.

Too often the commander must improve communication systems with equipment available. Many times the

commanders have found this to be impossible and have downgraded radios one echelon of command in order to insure effective communications. Although most communication equipment and systems have been improved considerably since World War II, the communication system currently authorized the Infantry rifle company, except for minor improvements, is essentially the same as it was in the days of World War II.

The organization and the concepts of today have generated more and more reliance on radio as the principal means of communication. Everyone must agree that in the future radio will play an ever-increasing part in command and control. The use of alternate means of communication when the electrical means become overcrowded or disrupted must not be neglected. "Back-up" means, such as wire and air messenger, must be ready for immediate use to get the message through. Complete reliance on any one means limits flexibility of the communication system and invites disaster.

Even though the United States Army has the finest communication equipment in the world, this equipment is as worthless as junk unless it is properly used and maintained. It is the responsibility of all commanders to insure that all communication personnel are properly trained. Approximately ten percent of the personnel assigned to the Infantry battle group have a primary mission in communications, yet too little emphasis is placed on the training of these personnel. Approximately twenty percent of the battle group are riflemen. How much more time is spent in the supervision and the training of the individual rifleman in comparison to communication personnel? Although the result of one communicator not performing his job properly has a greater adverse effect on the mission than two riflemen not performing their jobs effectively, too little time is devoted by the commander and his

subordinates to the inspection of communication equipment and the training of communicators.

Commanders must be indoctrinated in the importance and the appreciation of the service that communication personnel and equipment can render, and they must allocate sufficient supervision time to insure that the personnel are maintained in a high state of training and that the equipment is properly maintained at all times.

In addition to the responsibilities of maintenance and training, the Infantry officer must be made aware of the capabilities and limitations of his communication means and must incorporate them into every plan of action. He must be so indoctrinated that planning for communication is as automatic as his planning for fire support or logistics. The Infantry officer must be so trained that he will anticipate and visualize the impact created by failure of a portion of his established communication system. Communication in its broadest sense is a tool of command, for without the ability to transmit orders, one cannot fight. The dispersed battlefield of the future demands reliable communications at all levels. Control through effective communications must be available, so that all leaders and commanders will be able to communicate both up and down the chain of command. Presently, the communication equipment available at the platoon and squad level is not satisfactory. It is at this level where control is most difficult.

Commanders must realize the areas in which current communications are the least effective and make plans to overcome these deficiencies. Commanders must realize the importance of communication training and the maintenance of communication equipment and insure that at all echelons it is performed efficiently and effectively. Only after all of these deficiencies are corrected will the modern communication means be complete.

FLAME FOR THE INFANTRY



*We must have more knowledge
and greater appreciation of flame weapons.*

*The demoralizing and casualty-producing effects of
flame can play an important role in our combat operations.*

By Lt Col Walter L. Miller, Jr.

MAN has an inherent fear of fire. Flame warfare, which exploits this fear, has proved to be a valuable weapon for the support of Infantry operations. Experiences with flamethrowers in World War II and Korea revealed that success with these weapons depends to a great extent on a thorough knowledge of flame and its employment. The Infantryman must know its capabilities

and limitations. He must understand the need for training in and the planning for flame operations, and he must fully appreciate the logistical considerations which are necessary to support them.

Flamethrowers are presently considered special-purpose weapons. Since they are Class IV items and T/A equipment, they will be available at ASPs and Army depots. Infantry

commanders must request them in advance if they are to be immediately available when needed. Also, commanders must conduct realistic and adequate training before the combat need arises.

The average Infantryman has had little more than familiarization firing with the flamethrower, and he lacks confidence in its capabilities. If he is to use the weapon effectively, he must

fire it until he is thoroughly experienced with it. Furthermore, he must know that he will be supported by other weapons of the Infantry team as he closes on the target.

The greatest effect of flame warfare is psychological. Unlike projectiles from other weapons, flame and its threat of impending disaster can be seen by the individual. When he witnesses the awesome sight of liquid fire coming directly at him, he panics. The natural instinct is to run. In past combat operations many positions which could not be reduced by other means were quickly reduced when flame weapons were employed—generally because the defenders surrendered or fled.

Flame weapons also produce casualties. A person who is hit by a rod of flame is either killed or put out of action. When used against pillboxes it frequently produces fatalities by consuming the oxygen in the air and suffocating the occupants.

Flame weapons are capable of neutralizing effects. They can cover an area with what is sometimes called the "golden rain" of napalm. In Korea, Company C, 9th Infantry Regiment, successfully employed portable flamethrowers to attack enemy forces on



Figure 1. One-shot portable flamethrower.

the reverse slope of Bloody Ridge. Burning fuel was projected into the air over the ridge, and it neutralized the enemy positions.

Flame has a searching effect. It can reach into trench systems or bunkers and bounce around corners to reach the enemy. The importance of this effect should be emphasized since it

is not normally witnessed by the user. Consequently, the use of flame in this manner is sometimes overlooked.

The incendiary effects of these weapons are also important. They can be used to burn, damage and destroy enemy equipment and supplies.

And we must also consider the effects of the smoke given off by the weapon. This is important in planning because smoke may draw enemy fire and hamper the attack. However, if properly anticipated, it may assist the firer in closing with the enemy.

Now let's take a look at some of our flame weapons, including several which are in the process of being developed.

Figure 1 depicts a one-shot portable flamethrower which is now under consideration. It is called a one-shot weapon because it discharges its two gallons of fuel in one continuous burst of four to five seconds. Since it weighs only about 26 pounds, it allows the Infantryman to carry his individual weapon as well as the flame weapon. Field tests have shown that it is very accurate in the hands of a trained operator. After firing, this weapon will be dropped on position to be picked up, refilled and serviced by Chemical

Figure 2. Test model of the new multishot flamethrower and the M7 flame gun.





Figure 3. The M67 flamethrower tank.

Corps support units. The need for such a weapon was demonstrated in Korea, where the standard 72-pound portable flamethrower was reduced in weight by eliminating one fuel tank so that Infantrymen could use it more effectively. Since it was not desirable to reduce the amount of fuel placed on the target, two or more of these weapons were employed against a single target.

The effective range of the new weapon is approximately 50 yards. In defensive situations it can be emplaced and fired by remote control, either electrically or with a lanyard.

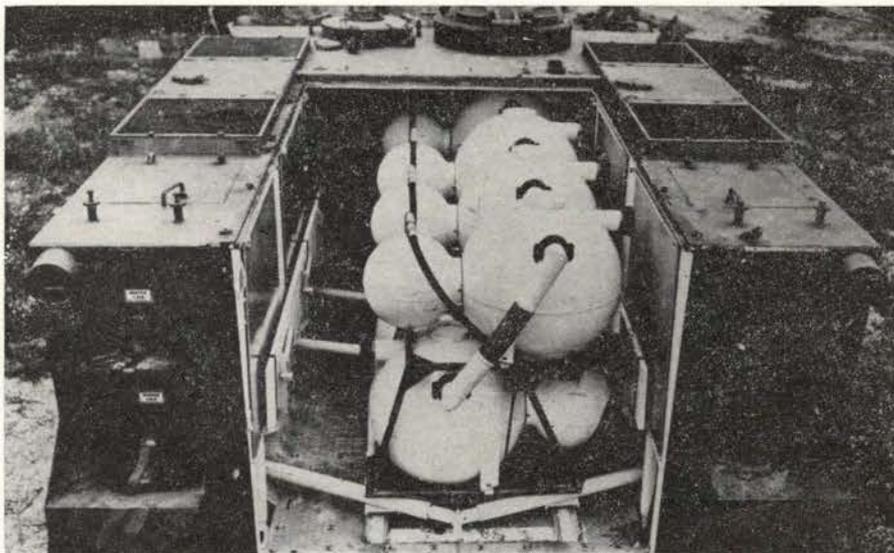
A test model of a new, lightweight, multishot flamethrower which is presently under consideration is shown in Figure 2. This model will deliver approximately four gallons of fuel and will weigh about 50 pounds. Its effective range is expected to be the same as that of the standard model — approximately 50 yards. Also shown in Figure 2 is the new M7 (E32) flame gun which is much easier to grip and which provides greater ease in releasing fuel. This gun weighs three pounds less than the old one and is being issued with the recently standardized M2A1-7 portable thrower, pending test and adoption of a new, lightweight model.

In Figure 3 we see the M67 flamethrower tank, two of which have been integrated into tactical problems at the United States Army Infantry School. This new weapon has a fuel capacity of 370 gallons, a range of approximately 200 yards, and is extremely accurate. If the gun is “opened up,” it can discharge the entire fuel load in one minute. However, this is not the usual method of employment. It generally is employed in shots of 10- to 20-seconds’ duration. The flame gun takes the place of the tank

gun, and the fuel tank is integral to the vehicle; hence, it is called an integral mechanized flamethrower.

Figure 4 depicts the latest concept in a mechanized flame weapon for use in Infantry carriers. Known as an auxiliary kit, mechanized flamethrower, it consists of 50-gallon fuel and air bottles which can be joined together “tinker-toy” fashion. It has a fuel capacity up to 400 gallons, a range of approximately 200 yards, and is extremely accurate against point targets. The gun may be oper-

Figure 4. An auxiliary kit mounted in an Infantry carrier.



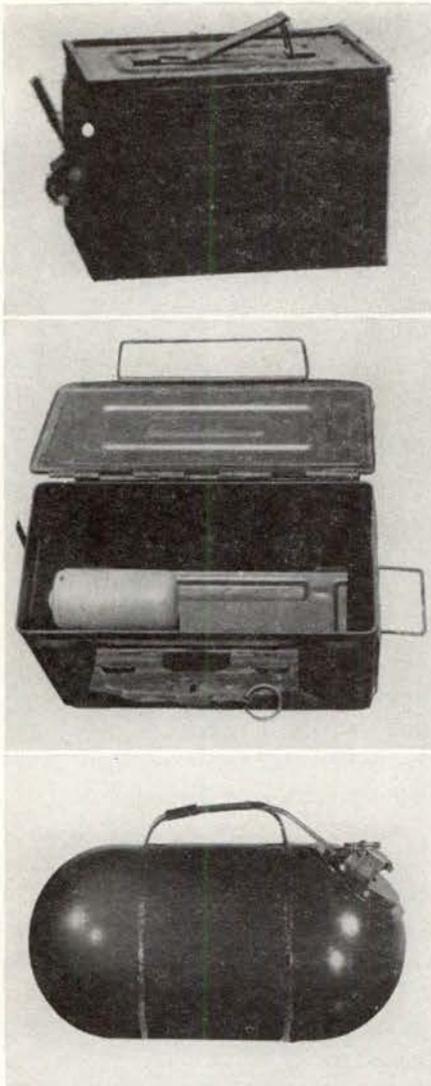


Figure 5. *Top*: field expedient bunker bomb used in Korea; *Center*: interior view of the bomb, showing the M-15 white phosphorus grenade which serves as a detonator when the bomb is filled with napalm; *Bottom*: napalm hand grenade which has been tested as a replacement for the bunker bomb.

ated manually or fired by remote control. Added fire support is provided by a .30-caliber machinegun which is mounted coaxially to the flame gun. The carrier's low silhouette and good cross-country mobility should contribute to its use in Infantry operations.

Flame weapons which can reach out and engage the enemy at extended ranges are desired. Recently Maj

Gen William C. Creasy, Chief Chemical Officer, announced that research is being conducted on a flame rocket. No details have been given on its design or range. It is visualized that this rocket will be available for close support in platoon and company areas. The large amount of fire delivered by such a weapon would do much to stop or break up the kind of mass attacks experienced by frontline units in Korea.

During the Korean conflict a number of napalm field-expedient weapons were developed. Among those which proved to be most effective were such things as flame land mines, flame fougasse, napalm bunker bombs and Husch flares. Troop units have been authorized to construct certain of these field expedients as outlined in Department of the Army Training Circular 3-1, dated 17 May 1956, and to conduct training in their use. One item now being tested is an all-purpose incendiary burster which can be joined in sections to burst and ignite containers from five to 55 gallons in size. The burster is designed to eliminate the requirement for detona-

tors, plastic explosives and firing devices. This requirement was initiated as a result of the demand for flame expedients in Korea.

Another item which we should take a look at is the napalm hand grenade which is visualized as a replacement for the napalm bunker bomb. Figure 5 shows both the bunker bomb and the grenade. In contrast to the land mine, which is designed to spread the flame, the napalm hand grenade confines the flame to the interior of the bunker. Its intense heat and the effects of white phosphorus and smoke drive the enemy into the open. At present no specific Research and Development requirement exists for this munition.

Figure 6 shows very graphically the effects of an air-delivered fire bomb. This bomb is highly effective against troops in open or exposed positions and in vehicles, thatch huts or other combustible, built-up areas. It is also effective, to a lesser extent, against tanks and personnel in bunkers. Since attacking Infantry can "lean" closer to fire bombs than to

Figure 7. A comparison of thickened and unthickened fuel capabilities against specific targets.

COMPARISON OF FUEL CAPABILITIES		
Target	Thickened	Unthickened
Enemy personnel in pillboxes, bunkers (small gun ports):		
Ventilated	Excellent	Poor
Poorly ventilated	Excellent	Excellent
Enemy personnel in open fortifications	Good	Excellent
Enemy personnel in villages	Excellent	Excellent
Armored vehicles:		
Open ports, hatches	Excellent	Good
Engine air-intake ports	Poor	Excellent
Supplies, all types	Good	Poor
Unarmored vehicles:		
Carrying personnel	Good	Excellent
Unoccupied	Good	Poor
Gun positions	Excellent	Good
Wires and cables	Excellent	Good
Small-arms ammunition	Excellent	Good



Figure 6. The effects of an air-delivered fire bomb in Korea.

conventional high explosives, this weapon could be useful in a close-support role. However, the Infantryman must be trained to advance rapidly across burning napalm as soon as the flame subsides to exploit its success fully.

In the attack of a target, the selection of fuel is important. Thickened fuel increases range and accuracy, and it sticks to and burns hot on the target. Unthickened fuel can be used, but range, accuracy and time effect on the target are reduced. Figure 7 shows the effectiveness of various types of fuel against specific targets and is based on combat examples from World War II. Note that thickened fuel is preferable, except for an attack on personnel in the open.

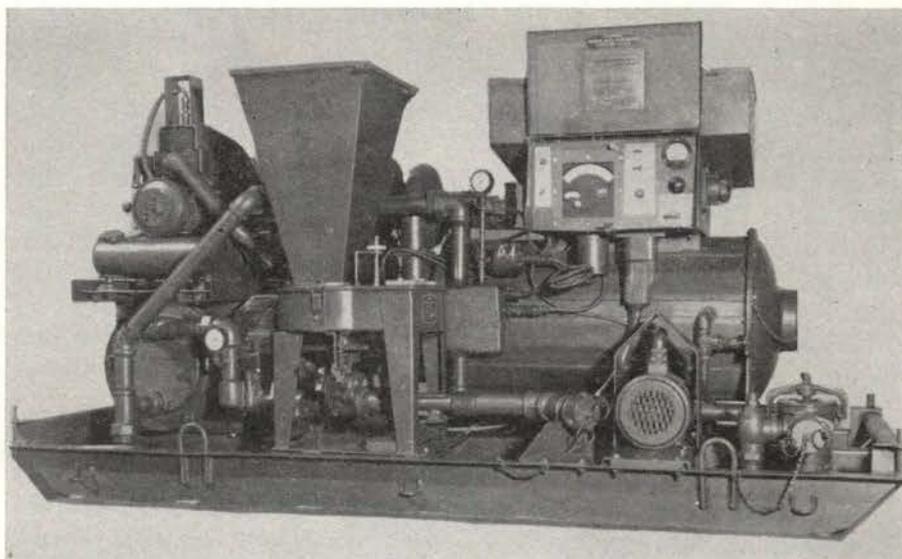
Considerable training is required in the preparation of fuel.¹ It must be mixed under proper temperature conditions, water must be excluded because it breaks down the thickened fuel, and the fuel must be aged. A test shot of the mixture should be fired to insure its suitability for combat—lives depend upon it at the close range of flame attack. In Korea, I Corps SOP required flamethrowers to

be recharged every three days to insure the adequacy of the fuel. To provide large and continuous supplies of thickened fuel, a special mixer is used. Figure 8 shows the M5 incendiary oil-mixing and transfer kit now in use by the Marines. It can furnish 25 gallons of fuel per minute. A 270-gallon-batch mixer, known as the service unit, flamethrower, truck-mounted, M4, was used in Korea by

the Army (Figure 9.) At the present time, research is being conducted for thickeners which require the use of less fuel and thickening agent and little or no mixing equipment. This will help to reduce logistical requirements.

Weather conditions must also be taken into consideration during the firing of flamethrowers. Rain has little effect on flame, but snow will reduce its effect by smothering it. A

Figure 8. The M5 incendiary oil-mixing and transfer kit.



¹Detailed information on the mixing and evaluation of flame fuels is contained in TF 3-2245. TM 3-366 also covers thickened fuels.

strong crosswind will tear up the fuel rod; a headwind will reduce the range; but a tailwind will assist the flame in reaching the target. During cold weather in Korea it was sometimes necessary to use two or three ignition cartridges to fire the weapon successfully. Fuel should be thinned in cold weather and thickened in hot weather to insure ignition.

The servicing of flame weapons will be accomplished by a newly organized Chemical Combat Support Company at corps. This unit will send a platoon to the Infantry division to assist in CBR matters. One of the platoon's functions will be to mix the thickened fuel and to provide necessary maintenance so the Infantry will receive a "ready-to-go" weapon.

So far we have examined the effects of flame weapons. We have talked about their characteristics, capabilities and limitations, and we have discussed operational and logistical considerations. Now let us consider some of the basic principles for their tactical employment.²

To be effective with the flamethrower, the Infantryman must have more than a knowledge of the weapon. He must be trained to work as a part of a weapons team. Flame attacks frequently have failed because the operators, although experienced with their weapons, were not trained to work with supporting fires and troops. The desired results can be achieved only with properly organized and trained flame teams.

Proper preparation and checking of the equipment is also necessary. An example of poor preparation occurred in Korea when portable flamethrowers were used in an attack on Heartbreak Ridge. Three flame weapons were laboriously carried to the assault position, but two failed to fire because they lacked ignition cartridges. The one thrower that did function reduced an important bunker without casualties to friendly forces.

²Tactics for the portable flamethrower are discussed in Department of the Army Training Circular 22, dated 19 October 1953. Details on the preparation and employment of napalm field expedients are covered in Department of the Army Training Circular 3-2, dated 17 May 1954.



Figure 9. The M4 truck-mounted flamethrower service unit. Also shown is a flame jeep (a modified 1/4-ton truck) which was used to some extent in Korea.

Reconnaissance is a must for successful employment of flame weapons. The target and any supporting elements must be located; a route of approach which will offer protection from enemy fire must be designated; and the amount of flame required for the action, together with plans for demolition and breaching support, must be determined.

Reconnaissance for mechanized flame vehicles must consider mines, obstacles and soil trafficability. Much time can be saved if the officer in charge of mechanized flame weapons moves with the forward Infantry commander. He can complete his reconnaissance while the vehicles are moving into position. Normally, mechanized flame weapons will be in reserve until a suitable target is located. While it may be necessary at times to commit them to action without a thorough reconnaissance, this risk must be evaluated on the basis of the urgency of the situation and the necessity for expeditious action.

Once the reconnaissance is complete and the target has been selected,

it is necessary to isolate the objective. Since the fire and smoke of the flamethrower will attract fire from enemy supporting positions, the area of attack must be isolated from enemy observation and fire. This often can be accomplished most economically by the use of smoke to blind and neutralize adjacent positions which could interfere with a flame attack. Artillery and mortars can be used to neutralize enemy positions on the flanks and rear. In dealing with an enemy who is well trained in defense against flame weapons, this is a most important principle.

The individual soldier with portable flamethrower is vulnerable to anti-personnel weapons, and the mechanized flamethrower is vulnerable to antitank weapons. This is a limitation which is not common only to flamethrowers. Just as the individual soldier must offset his vulnerability by using his own weapons, by taking advantage of cover and concealment and by advancing with fire support, so must flamethrowers. This vulnerability to antipersonnel and antitank weapons is

an important factor which the tactical plan must consider. Blinding neutralization, or destruction of antipersonnel and antitank weapons must be planned. This will permit the flame attack to advance to effective flame gun range.

The number of weapons to be employed in a flame attack will depend on many factors, the more important of which are the size and nature of the objective, the terrain, and the morale and physical condition of enemy troops. Piecemeal utilization should be avoided. In general, the more flamethrowers utilized, the more difficult the control, yet the greater the success. The attack should be pressed home boldly.

An example of the mass use of flamethrowers was an attack conducted by Company K, 17th Regimental Combat Team near Dagami in the Philippines. Other elements of the battalion were having great difficulty in clearing the enemy from a cemetery. The commander of Company K preceded his assault with six portable flamethrowers to burn and smoke the enemy out. He then advanced through the cemetery without difficulty.

It has been found that the enemy soldier rarely fights back when he is caught in a flame attack. He usually does one of three things: runs, surrenders or tries to hide under any available cover. If he runs, he may return to man his position, even though fuel is still burning on the ground. Also, enemy in concealed positions may hold their fire until the flame attack is over and then engage the assaulting forces. It is therefore essential that friendly Infantry follow closely and quickly. Surprise and shock must be exploited to the fullest extent. Success depends primarily on coordination between flamethrower teams and supporting Infantry.

Since flamethrowers are short-range weapons, the enemy may be able to get away before the flame attack reaches his position. To destroy enemy who are flushed out or demoralized by the flame, provision

must be made for cut-off (maneuver) forces or fires. The cut-off force may consist of an Infantry unit deployed on the flank. If tanks or Infantry carriers are used, the firepower of these vehicles can assist in destroying the enemy. Artillery and mortar fire can be planned for and used in terrain where the movement of a cut-off force is not possible, although it can be expected that some of the enemy will escape. To be effective, the cut-off force and/or fires must be ready at the time the flame attack begins and before the enemy has an opportunity to move out of his position.

Since flamethrowers have a limited fuel capacity, plans must be made for resupply and refueling. Discharged portable flamethrowers usually are left on the position and are replaced by ready-to-go weapons from the rear. When mechanized flamethrowers have expended their fuel, they are returned rapidly to a predetermined refueling point for servicing and return to action as soon as possible.

To get a clearer picture of how a successful flame operation is conducted, it might be helpful to take a look at a simple combat example from World War II. We will consider a mechanized flame attack made by Company C of the Canadian Lake Superior Regiment in Holland. Elements of a German paratroop battalion were located in cellars of buildings and in surrounding ditches

and hedges. The position extended over a front of 200 yards and was supported by heavy mortar fire. All road approaches were covered by automatic weapons and rocket launchers.

Company C had been halted by heavy mortar and small-arms fire, approximately 800 yards from the enemy position. One platoon of tanks and five carrier-type flame vehicles were available to support the company. Two of the flamethrowers were on the right flank and three were on the left.

The flame weapons were organized into two units, each of which was accompanied by an Infantry platoon. The flamethrower personnel and Infantry units had operated together previously and understood what was required of each other. Reconnaissance of the route of advance was limited, but friendly supporting armor had previously operated in the area up to 400 yards from the enemy. From that point the route was to be selected by the flame vehicle commander. One Infantry platoon with three flamethrowers advanced on the left flank; the other platoon with two flamethrowers advanced on the right flank. A third platoon was dispatched as a cut-off force. Supporting fire from the tanks covered their approach to the objective. The flame vehicles assaulted the enemy position, closely followed by the Infantry. The posi-

LT COL WALTER L. 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, now Command and Staff Department, of the United States Army Infantry School.

tion was quickly overrun. Fifteen of the enemy were killed—very few by burns—and 110 demoralized enemy were captured.

Another example, taken from the combat experiences of the 41st Infantry Division in the Pacific, illustrates the employment of the portable flamethrower. Company A had been fighting the Japanese in jungle-like terrain and was holding a small ridge. The enemy was located in a pillbox constructed of coral and reinforced logs. The position was protected from small-arms fire and rockets by a small ridge directly to its front. The pillbox housed an automatic weapon and was supported by snipers located on nearby ridges. Three unsuccessful attempts had been made to reduce the position by using rocket launchers and rifle grenades, and Company A had sustained a number of casualties in these attempts.

Reconnaissance revealed that there was a suitable firing position for a flamethrower, if it could be worked forward through the thick and tangled underbrush. To provide fire support and a cut-off force, the company commander assigned a BAR team to accompany the flamethrower to the firing position. Additional fire support was provided by Infantrymen against the enemy pillbox and snipers. After the thrower had carefully moved to the proper spot, the first burst of flame

forced three enemy soldiers—all on fire—from their position, and after the next two bursts five soldiers ran from the pillbox. As the enemy appeared, the BAR team disposed of them. Within a few minutes all resistance had been eliminated. Later, demolitions were used to destroy the pillbox and to prevent its reoccupation.

When properly combined in the assault with Infantry, tanks and supporting fires, flame contributes greatly to the speedy reduction of enemy resistance. One important use of flame weapons in the offense is to fill the gap between assault fires and the Infantry and other supporting fires that must be lifted or shifted to permit the advance of the Infantry during the last stage of the assault.

Flame has proved to be highly effective in defensive operations. In Korea, mechanized and portable flamethrowers and most of the expedients mentioned earlier were used to blunt enemy assaults and cover areas which direct-fire weapons could not reach. It was found that flame expedients could also be used for added protection by frontline Infantrymen at night to provide early warning of approaching enemy troops. A sergeant in the 15th Infantry who had accepted the use of flame mines with hesitation came to appreciate their use rather dramatically. One night enemy ap-

proaching his position detonated some of these mines and were effectively silhouetted. The sergeant killed nine of the attackers with one sweep of his "grease" gun. From then on he could not be supplied with enough flame mines.

To obtain the most from these weapons in night defensive situations, we must make thorough plans. Lanes of fire must be cleared to avoid the starting of fires which would reveal our position. Muzzle drip must be eliminated and alternate positions must be prepared. Also, our Infantrymen must be trained in the employment of flame minefields and must wait until the main enemy force has entered the area before detonating the flame.

With the development and adoption of new and better flame weapons, it is envisioned that flame will be utilized on a day-to-day basis in support of Infantry operations and that flame weapons may be included in TOEs for use as general—rather than special—purpose weapons.

Yes, flame is a valuable support weapon in the Infantry. It can help the commander in both offensive and defensive operations, in daylight or at night. But he must have a thorough knowledge of its effects, he must understand its capabilities and limitations, and he must conduct aggressive training if it is to work for him.

LETTERS (continued from page 5)

I have several suggestions which would alleviate this:

1. Print the changes on paper 3/16ths of an inch smaller on all sides, but leave the printed form the same size. The smaller size would allow the change to fit into the back cover of the FM with no overhang.
2. In the original printing of the FM, make provision for future changes by allowing extra cover stock for

a pocket to be included in the back cover. The pocket would keep changes securely in place. It could also be used to hold instructor or student notes.

I feel that these innovations would be valuable in helping units to maintain an up-to-date library of field manuals. The advantages gained would be well worth any additional expense incurred through the use of more cover stock and added bindery time.

Jay A. Miers
2nd Lt, Infantry, USAR
Phillipsburg, N. J.

Many thanks for your stimulating remarks about Infantry and for your recommendations to solve the problem of filing changes to field manuals. Your suggestions, including three of the sample cover pockets which you inclosed, have been forwarded to Hq, USCONARC for consideration. Constructive ideas such as these can increase efficiency in the Army. You are to be commended for the ingenuity and effort which you have put into this project.—Editor.

Change Suggested

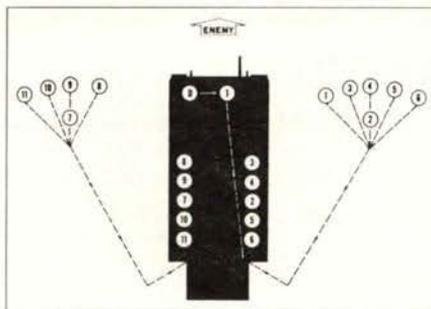
Sir:

In your April-June 1958 issue you had an article entitled "Carrier Battle Drill" by Capt John T. Hodes. This article interested me quite a bit, as just before I was transferred from Fort Lewis we had experimented a little on the subject.

We found that the seating arrangement described by Captain Hodes afforded a slight hesitation by the squad before it started on its offensive (forward) movement. This was due largely to the fact that the men in the extreme flanks of the squad took a little longer to get in position because of the extra distance they had to travel. We improved our dismount time by rearranging the seating so that they dismounted in the following order: Left side—numbers 11, 10, 7, 9 and 8; right side—numbers 3, 4, 2, 5 and 6. The squad leader dismounted last. (See sketch.)

Caesar J. Skis
Sgt, 43rd Co. TSB
Fort Benning, Ga.

Your suggestion was passed to the Infantry School's Ground Mobility Department. The Department's comments are summarized as follows: "It is important that all units have an SOP for carrier battle drill, so that



Suggested seating arrangement

each man knows exactly where to go and what to do upon dismounting. At the present time there is no Army-wide SOP to govern seating arrangements in the Infantry personnel carrier, but plans are being made for the adoption of a uniform method.—Editor.

"Queen" Publicity

Sir:

Enclosed is a photograph of a display, "Infantry, Queen of Battle," used recently by the Military Department, University of Oklahoma to generate interest in the Infantry.

The display included the crossed rifles of the Infantry; the Combat Infantry Badge; the Infantry School patch and the Ranger arc; pictures of the Infantry on parade, in training

Infantry display at University of Oklahoma



and in combat; and photos of currently used Infantry weapons.

The cadets on guard, and in their ceremonial parade uniform, are (left to right) Sergeants Jean D. Reed and George L. Horsman, of Company H, Seventh Pershing Rifle Regiment, National Association of Pershing Rifles, University of Oklahoma, Army ROTC.

James L. Brown
Capt, Infantry
University of Oklahoma
Norman, Okla.

The University of Oklahoma ROTC unit is to be complimented on this project. It demonstrates esprit and interest in the Infantry. We would like to know what other units are doing along these lines.—Editor.

"Oops"!

Sir:

Capt John T. Hodes' article, "Carrier Battle Drill," in the April-June issue of *Infantry* mentions that the 81mm mortar squads of the rifle company are transported in 1/4-ton trucks.

I am currently assigned as a weapons platoon leader of a rifle company in Germany, and the 81mm mortar squads of my platoon are carried in 3/4-ton trucks. We also used 3/4-ton trucks to transport our mortars while I was with the 3d Infantry Division at Fort Benning.

Was the statement in Capt Hodes' article a misprint, or has the TOE of the rifle company been changed?

Daniel K. Young
1st Lt, Infantry
APO 162, New York

The reference to the 1/4-ton truck was an error we did not catch. Each of the three 81mm mortar squads of the ROCID rifle company is transported on a 3/4-ton truck with a 3/4-ton trailer. Assigning this vehicle to the five-man mortar squad provides complete mobility for transporting the personnel, the weapon and its ammunition. Thank you for bringing this to our attention.—Editor.



ANSWERS TO QUARTERLY QUIZ *(See page 34)*

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. The commander of the unit being air transported is responsible for the loading, lashing and unloading of supplies, equipment and troops organic to the unit, into and from the aircraft, with the technical assistance of Air Force personnel and subject to safety inspection by the Air Force. (Chap 1, Sec I, par 2a, TM 57-210, January 1957, and Sec III, par 5a(3), AR 59-106, September 1956).

2. a. In addition to the radio relay system and the radio/wire integration system provided by the area support platoon, the battle group may communicate with division by means of six additional radio nets. These are (a) the Division CG/Command Net; (b) the Division Intelligence/Operations Net; (c) the Division Air Request Net; (d) the Division Command/Operations Net; (e) the Division Warning/Broadcast Net, and (f) the Division Administrative/Logistical Net. (Chap 2, Sec III, par 19, FM 11-10, July 1957).

3. Two methods of distributing supplies by the field army are (a) supply-point distribution and (b) unit distribution. Supply-point distribution is a method in which the using unit employs its organic transportation to obtain supplies from the issuing agency. Unit distribution is the method whereby the issuing agency delivers the supplies to the using unit. (Part 2, Chap 1, Sec II, par 16li and j, FM 7-21, August 1957).

4. Some of the important characteristics of contour lines are as follows: (a) contours are smooth curves which always close; (b) when crossing a stream or valley, contours form

U's or V's with the base of the U or V pointing upstream (toward high ground); (c) when crossing ridges contours form U's or V's with the base of the U or V pointing down ridge (toward low ground); (d) contours close together indicate a steep slope; contours far apart indicate a gentle slope; (e) on uniform slopes contours are evenly spaced; on irregular slopes they are unevenly spaced; (f) last contour closed indicates a hilltop; and (g) movement parallel to contours is relatively level; movement across contours is up or down slope. (Chap 1, par 19, MR-3, "Map and Aerial Photograph Reading," USAIS, August 1957).

5. The command post of the transportation battalion normally is located in the division service area. Companies are normally attached to divisional units for operational control. When not attached to divisional units, personnel carrier companies are located well forward in the division area in formations dispersed down to platoon level. Headquarters and service company and the truck company are similarly dispersed in the division service area. (Chap 5, Sec XIV, par 113c, TT 7-100-2, USCONARC, March 1957).

6. c. The head of the HEAT rockets (M28 and M28A2) consists of a tapered, thin-gage steel body, cylindrical in shape, which is 3.5 inches in diameter. It contains a shaped charge, consisting of about two pounds of composition B held in place by a thin-gage metal cone. When detonated, the force and heat of the explosive are focused by the metal

cone to form a small, powerful jet. The forward end of the head, called the ogive, is made of thin-gage metal and is hollow. The ogive holds the shaped charge at the required distance from the target to obtain the maximum effect from the jet. This distance is called the standoff. When the rocket hits the target, the detonation of the explosive may cause some small particles to be knocked off the inside surface. If the jet hits the engine or ammunition stowage, it will probably start a fire and cause an explosion. (Chap 5, par 24a, FM 23-32, April 1955).

7. b. (Appendix II, table II, TM 57-210, January 1957).

8. b. The transportation battalion has the mission of providing tactical mobility to assault elements of an Infantry division for pursuit, exploitation and for other tactical missions. (Chap 1, Sec II, par 2a, FM 55-37, July 1957).

9. d. The supply and maintenance platoon of the Infantry battle group is responsible for providing the transportation required to resupply the mortar battery with ammunition. The ammunition is obtained from army supply points as required and is delivered directly to the mortar battery firing positions. The mortar battery assists in the operation by providing guides and additional manpower at unloading points in the firing platoon areas. The prime movers in the mortar battery should not be used to resupply ammunition, since to do so would immobilize the mortars. (Chap 11, par 67, FM 6-18, May 1957).

10. c. The effective ranges of the sniper scope in receiving direct rays from other infrared light sources are: from a flashlight with infrared filter, one mile; and from another sniper scope lamp, four miles. (Part 2, Chap 15, Sec II, par 223b, FM 21-75, June 1957).



WHAT'S NEW FOR INFANTRYMEN

Changes • New Developments • Items of Specific or General Interest to Infantrymen

Gyroscope Plans

Department of the Army has announced a revision of the division rotation plan, Operation Gyroscope.

Utilized since July 1955, rotation of entire divisions was discontinued after the recent interchange of the 3d and 10th Infantry divisions. Although the division plan has been described as highly successful, Army officials feel that with the inherent flexibility of the modernized pentomic organization, it will be more advantageous to accomplish overseas rotation with smaller units, rather than divisions. Thus, beginning in December 1958, only smaller than division-size units, such as battle groups and battalion-size units, will be exchanged.

This new system is expected to permit a higher degree of readiness for Army divisions deployed overseas, since only a small portion of these divisions will be rotating at any one time.

At present, the revised plan calls for rotation of units between the United States and Europe only. Personnel returning to the States may request assignment to the previous home station of their division, if property ownership or other personal reasons warrant.

Composite Division

The Army is inactivating the 11th Airborne Division and reactivating the 24th Infantry Division in Germany, effective this month.

The 24th will be a composite division of three Infantry and two Airborne battle groups. This will make it similar in size to the Army's new pentomic Infantry divisions.

Major units which will comprise the 24th include the 1st Airborne Battle Group, 187th Infantry; the 1st Airborne Battle Group, 503d Infantry; the 1st Battle Group, 19th Infantry; the 1st Battle Group, 21st Infantry; and the 1st Battle Group, 34th Infantry.

Paper Sandbag

Army Engineers are developing a paper sandbag which could replace the traditional burlap bag which has been used by the Army for years.

The paper sandbag is scheduled to be troop-tested this year at various locations. It is believed that the type of paper being used in current experiments could be pro-

cured without difficulty and would meet operational requirements. The knitted paper fabric does not ravel when punctured. It resists the shock effects of a close blast as well as jute burlap, and it has a service life comparable to the jute sandbag in water.

New Combat Boots

New Army combat boots are currently undergoing field testing by personnel of the Infantry School at Fort Benning.

The boots, which will be selected from two types worn in the test, may be adopted by the Defense Department for all military services. The United States Army Infantry Board at Fort Benning and each of the other services must give their approval before the boot is adopted.

The test is being conducted jointly by the Quartermaster and the Army Surgeon General's Office. The test is part of an Army program to develop and standardize a common interservice footwear.

The boots now being tested have rounded sole edges, beveled heels and hard toe caps. Their cost is estimated to be about the same as the present full-lace issue boot.

The test group is divided into halves. One section wears Type A boots while the other section wears Type B boots. Finally the groups will switch types of boots. At the end of the tests, each man wearing the boots will be interviewed by a QM representative. Test personnel continue to perform their normal tasks during the study.

Left: Type B boots. Right: Type A.





Flying jeep

Flying Jeep

In line with the major advances being made in space travel, an Army flying jeep may soon make its first flight.

This new unconventional aircraft, as well as other military vertical take-off and landing machines is described as being the closest thing yet to a flying carpet. The entire wingless jeep will be lifted and driven by horizontal propellers or fans encompassed within the machine's body.

During the summer of 1957, the Army awarded contracts for building prototypes of the new machine.

Plastic Assault Boat

The United States Army has awarded a contract for production of the recently standardized plastic assault boat. (See "What's New For Infantrymen," October 1957 issue of *Infantry*.)

The boat was developed by the U.S. Army Engineer Research and Development Laboratories and is designed for assault crossings of rivers, streams and other water obstacles. It is lightweight and capable of carrying 15 men with their field equipment and weapons.

Constructed of fibreglass-reinforced plastic, the boat measures 16 feet, 4½ inches long. It is five feet four inches wide at the gunwale and weighs less than 300 pounds.

It is designed primarily for hand paddling; however, a 25-horsepower outboard motor can be attached. A fully loaded boat can attain a speed of 3.2 miles an hour when paddled by ten men, and a speed of 7.5 miles an hour when propelled by a 25-horsepower outboard motor. With one man aboard, a maximum speed of 22 miles an hour may be attained when propelled by the outboard motor.

Sun Compass

An improved sun compass has been developed by the U.S. Army Corps of Engineers. Featuring improved accuracy, versatility and greater operational range, the instrument is now military standard and provides a means for land navigation at all north or south latitudes. It may also be used with many navigational stars, whereas its predecessor was limited in its daytime operation from

the equator to 45 degrees north or south latitude, and it could be used only with the North Star. In the new universal sun compass, a clock mechanism provides for the mechanical tracking of the sun or stars.

Although simple in design, light in weight, and compact, the improved compass is of rugged construction to provide long life under the severe conditions encountered in military use. The weight of the instrument without carrying case is approximately nine pounds.

The compass is encased in a weatherproof carrying case, and is designed to permit rapid mounting of case and compass on vehicles. In addition, the instrument is readily removable from its case for mounting on a vehicle or for other uses.

Specialist training for operation of the compass is not required. Unit training in advanced map reading, supplemented by approximately two hours of instruction, or previous experience in star identification and one hour in actual operation of the sun compass, will suffice for the average soldier.

M56 Carriers

A hard-hitting, fast-moving combination assault gun and personnel carrier has been developed to provide increased mobility for rifle companies of the new pentomic Infantry division. The versatile new weapon was created by mounting the 106mm rifle on the M56 chassis.

After reviewing existing families of vehicles to select an armored personnel carrier suited for both personnel and weapons, a committee from the Weapons Department and Combat Developments Office of the Infantry School saw that such a carrier, if selected, probably would not be available for issue until the 1962-1965 period.

To meet the immediate need for such a carrier, the Weapons Department utilized a pilot model of the M56 which was available at the Infantry School, and thoroughly tested it to determine its suitability as a carrier for the 106mm rifle.

In conjunction with the Cleveland (Ohio) Ordnance Plant, a low-cost kit was developed to permit the 106mm

105mm rifle mounted on M56



rifle to be mounted in the M56. No modification of the weapon, mount or vehicle is required, except for a few mounting bolts. The vehicle may be restored with ease to its original condition.

The new weapon has undergone strenuous tests, and all phases of firing have been successfully demonstrated. It was demonstrated for Fort Benning and USCONARC personnel earlier this year and received its public unveiling during the United States Army Ground Mobility Symposium held at Fort Benning in April.

Vacuum Canteen

The Army has developed a new vacuum canteen with a plastic mouthpiece that prevents harm to lips in below-zero weather. In addition, the canteen is insulated to carry water for two days in arctic cold without freezing.

The Sergeant

The Army's newest ballistic guided missile, the Sergeant, is being hailed by Department of the Army officials as America's first truly "second generation" surface-to-surface tactical missile.

The missile is more powerful and accurate than the present four-year-old Corporal and can deliver a nuclear blow far behind enemy lines by means of its accurate guidance system. This guidance system is believed to be invulnerable to any known enemy countermeasures.

The Sergeant is a highly mobile weapon which can be quickly emplaced and fired by a very small crew under all conditions of weather and terrain.

Sergeant



Lopair

Lopair CW Detector

A new infrared chemical warfare detector named Lopair has been developed by the Army Chemical Corps in conjunction with a commercial optical company. Contaminated material as far as a quarter-mile distant will set off Lopair's horn and warning light when it crosses the invisible infrared beam emitted by the detector.

YHO-2 Helicopter

The YHO-2 helicopter is a two-man craft designed for economy and reliability. It weighs only 890 pounds when empty, yet it can carry a 660-pound payload. While the machine is "radical in its simplicity and economy," designing engineers claim the new 'copter will give an added dimension of mobility to Army observation, liaison and training activities.

Designated by the Army as the YHO-2, the craft has a top speed of 90 mph and a cruising range of 150 miles. It is scheduled to be tested at Fort Rucker by the Army Aviation Board.

Low Altitude Parachute

A parachute that is thrust upward and outward by explosives is being developed by the Army Quartermaster Research and Engineering Command.

The chute is designed for use by pilots of ground-skimming planes and by soldiers using flying platforms. The newly developed parachute opens in eight-tenths of a second, almost five seconds sooner than the ordinary parachute.

Trainer Insignia

A new insignia has been approved for wear by cadremen assigned to U.S. Army Training Activities. The distinctive insignia was suggested by the commanding general, USCONARC, and approved by Department of the Army.

The insignia is gold-colored metal and enamel with a flaming torch above a breast plate, and jupon in front of

a rattlesnake on a green background. The snake is grasping the ends of an encircling scroll upon which the motto "This We'll Defend" is inscribed.

The snake, the motto, the scroll and the armor were all adopted from the design of the U.S. Army Flag and the Department of the Army Seal.

The four elements represent this country's readiness to defend itself. The torch of liberty shines from the top of the design and the 13 stars (seven on the left and six on the right) allude to our Nation's beginning. The background color is the new Army green.

The insignia has been approved for wear by training personnel on their shoulder loops.

Intelligence Seminar

The United States Army Infantry School conducted its first intelligence seminar 19-23 May, with conferees from commands throughout the Army.

The Commandant had directed that the seminar be held for the purpose of developing and examining intelligence and counterintelligence problems in the ROCID battle group. With the current emphasis on dispersion, fluid operations and atomic firepower, one of the battle group commander's critical problems will be that of collection of information with the speed and accuracy required to support his tactical operations and planning.

The 75 conferees, in addition to personnel from the Infantry School, represented all of the principal commands and agencies of the Army that have intelligence interests, including the Assistant Chief of Staff, Intelligence, Department of the Army; US Continental Army Command; Combat Surveillance Agency; Electronic Proving Grounds; Third, Seventh, and Eighth U. S. Armies; Infantry and airborne divisions; and service schools. The knowledge and experience of the many participants permitted a thorough analysis of the battle group intelligence system and resulted in many recommendations for improvements in the system.

The seminar consisted of a series of formal presentations on intelligence subjects, followed by panel discussions on problem areas. The problem areas which were examined included collection and surveillance, S2 duties connected with employment of atomic weapons, reconnaissance, counterintelligence, training, and intelligence techniques and procedures. Recommendations of the various panels were presented to the assembled seminar on the closing day and are being included in the seminar report to be distributed to all interested commands.

The panel recommendations do not necessarily reflect the official position or teaching of the Infantry School. However, they are being studied and reviewed in detail by the Infantry School for possible changes to current instruction and as a basis for further recommendations to other agencies concerned. The seminar results indicate that, to give the battle group the intelligence capability required, additional emphasis and improvements are

needed, principally in the fields of surveillance, reconnaissance, and radiological survey and monitoring.

Manuals

A completely revised edition of TM 9-2810, Tactical Motor Vehicle Inspections and Preventive Maintenance Services, will be published in August 1958. The provisions of the new manual will greatly simplify vehicle maintenance procedures in the Infantry division battle group, since emphasis will be placed on physical inspection of vehicles by supervisory personnel rather than on records inspections. Maintenance will be performed on the basis of actual need rather than by time and mileage requirements. If the driver or supervisory personnel note a deficiency in the vehicle during daily operation, the required maintenance will be performed immediately. Any other necessary maintenance will be performed during a quarterly scheduled maintenance inspection.

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

- FM 22-100, Military Leadership (new)
- ROTCM 145-4-2, Junior ROTC Manual (revision)
- ROTCM 145-7, Branches of the Army (Chap 4, "Infantry,") (revision)
- TM 57-220, Technical Training of Parachutists (revision)

The following manuals have been forwarded to USCONARC for approval:

- FM 21-150, C1, Hand-to-Hand Combat (change)
- FM 21-(), Evasion and Escape (new)
- FM 21-(), A, Evasion and Escape (new)
- FM 22-5, Drills and Ceremonies (revision)
- FM 23-90, 81mm Mortar, M1, M29 (revision)
- FM 26-5, C1, Interior Guard (change)

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

- FM 21-18, Foot Marches (revision)
- FM 23-(), Carbine Marksmanship Courses, Train-fire I (new)
- FM 23-5, U.S. Rifle Caliber 30, M1 (revision)
- FM 23-32, 3.5-inch Rocket Launcher (revision)
- ROTCM 145-30, Individual Weapons and Marksmanship (revision)
- ROTCM 145-60, Small Unit Tactics Including Communications (revision)
- ROTCM 145-80, Logistics (revision)
- ROTCM 145-90, Operations (revision)

The following manual has been published by Department of the Army and is available to instructors through normal supply channels:

- TM 21-200, Physical Conditioning (new)

Training Films

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

MF 7-8882, Terrain of the Han River Area East of Seoul, Korea, 10 minutes.

MF 10-8878, Classification of Quartermaster Property, 7 minutes.

MF 21-8797, Trainfire I—A New Course in Basic Rifle Marksmanship, 17 minutes.

MF 21-8933, Launching of Explorer, 10 minutes.

SFS 5-116, Loading Heavy Equipment in Aircraft, 28 minutes.

SFS 5-154, Fixed Bridge Maintenance—Nonstandard Bridges, 10 minutes.

TF 5-2450, Demolitions—Electric Priming, 6 minutes.

TF 7-2551, Counterintelligence in Combat, 28 minutes.

TF 7-2559, Reporting Enemy Information, 23 minutes.

TF 8-2524, Prevention of Cold Injuries, 20 minutes.

TF 9-2533, Front Band Adjustment of Hydramatic Transmission 302M, 7 minutes.

TF 9-2534, Fuel Pump, Carter Electric, Characteristics and Checks, GMC M135 Truck, 5 minutes.

TF 11-2490, Radio Set AN/GRC-26-()—Part II—Shutdown Check, 6 minutes.

TF 11-2491, Radio Set AN/GRC-26-()—Part III—Operation Power Plant and Starting Operation, 4 minutes.

TF 11-2553, Radiotelephone Procedures—Operation, 25 minutes.

TF 11-2563, Radio Set AN/GRC-26-()—Part IV—Setting Up Receiver as Frequency Standard, 5 minutes.

TF 11-2564, Radio Set AN/GRC-26-()—Part V—Preparing Transmitter for Operation, 5 minutes.

TF 11-2565, Radio Set AN/GRC-26-()—Part VI—Tuning of the Frequency Shift Exciter, 8 minutes.

TF 11-2566, Radio Set AN/GRC-26-()—Part VII—Tuning Transmitter Using a Doublet Antenna, 5 minutes.

TF 11-2567, Radio Set AN/GRC-26-()—Part VIII—Adjustment for Voice Operation, 3 minutes.

TF 11-2568, Radio Set AN/GRC-26-()—Part IX—Adjustment for Radio-teletype Operations, 6 minutes.

TF 11-2569, Radio Set AN/GRC-26-()—Part X—Adjustment for Dual Diversity Reception, 6 minutes.

TF 11-2570, Radio Set AN/GRC-26-()—Part XI—Tuning Transmitter Whip Antenna, 5 minutes.

TF 11-2571, Radio Set AN/GRC-26-()—Part XII—Partial Shutdown and First Echelon Maintenance for Operator, 3 minutes.

TF 55-2311, Helicopter Maintenance—Part IV—Supercharged Induction System, 16 minutes.

TF 55-2316, Helicopter Maintenance—Part IX—Generator Systems Trouble Shooting, 22 minutes.

TF 55-2560, Operation of the GM Unit Injectors, 4 minutes.

WA-6, The Vice President of the United States—America's World Responsibilities, 43 minutes.

Instructional Materials

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

Rifle Company in Attack, Mounted, 2140-USAR, 3 hours. A conference covering the factors involved in planning and conducting an attack by a rifle company utilizing armored personnel carriers, and an integrated terrain exercise and demonstration covering the planning for and conduct of a daylight attack of a mechanized rifle company. 85¢.

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***Infantry*, Book Department, U.S. Army Infantry School, Fort Benning, Georgia.**

Rifle Company in Night Attack, 2171-USAR, 4 hours. A problem covering the purposes of a night attack, characteristics of night combat, planning factors for the night attack and the conduct of the attack, stressing the importance of night training for individuals and units. 70¢.

Rifle Company in the Defense, 2245-USAR, 4 hours. A problem covering the factors considered by the commander of a forward rifle company in organizing a company area in position defense; the company as part of a larger force in the mobile defense, including the development of plans for retrograde operations. 70¢.

Reserve Rifle Company in Defense, 2250-USAR, 4 hours. A problem covering the employment of the reserve rifle company in defense, to include fire support planning by the company commander, organization of the ground and planning by the reserve company commander to execute a battle group counterattack plan. 60¢.

Army Air-landed Operations, 2932-USAR, 4 hours. An integrated conference and map exercise involving the planning for a helicopterborne assault. It includes the ground tactical plan, landing plan, air movement plan and intelligence considerations. 85¢.

Infantry Portable Radio Sets, 3562-USAR, 3 hours. A conference on radio communication, joint nomenclature system and the characteristics, operation and user maintenance of radio sets AN/PRC-6 and AN/PRC-10. 10¢.

Command Posts, 3626-USAR, 1 hour. A conference and written practical exercise covering the organization, operation and displacement of command posts. 15¢.

Communication Systems of the Rifle Company, 3631-USAR, 1 hour. A conference and practical exercise covering the communication systems of the rifle company, with emphasis on radio nets. 20¢.

Communication Systems of the Rifle Company and the Mortar Battery, 3632-USAR, 2 hours. A conference covering the communication systems of the rifle company and the mortar battery, with emphasis on radio nets. 40¢.

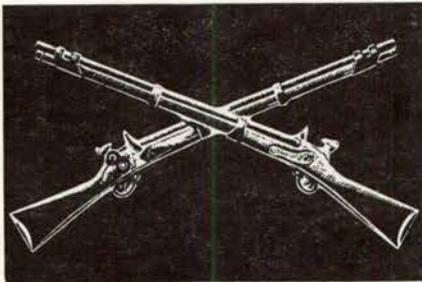
Operation Techniques, 6910A-USAR, 3 hours. A conference discussing operational planning as it pertains to the techniques of graphic representation of operation plans and operation orders. 45¢.

Operation Estimates, 6910B-USAR, 4 hours. An integrated conference and map exercise covering initiation of operational planning, beginning with the mission and planning guidance; discussion and map exercise covering the operations estimate; integration of all the staff estimates into the commander's estimate for a battle group in a tactical situation. \$1.10.

Operation Orders, 6910C-USAR, 6 hours. An integrated conference and map exercise covering the format of operation orders; techniques of preparing operation orders; staff responsibilities in the preparation of an Infantry division battle group attack order in a tactical situation. 75¢.

Operation Orders, 6910D-USAR, 6 hours. An integrated conference and map exercise covering the techniques of preparation of a movement order, defense estimate and defense order; staff responsibilities in the preparation of these orders in a tactical situation involving an Infantry division battle group. 75¢.

Operation Plans, Orders and Annexes, 6910E-USAR, 6 hours. An integrated conference and map exercise covering the techniques of preparation of operation plans, warning orders, fragmentary orders and fire support plan annex; principles of issuance and receipt of oral orders in tactical situations involving an Infantry division battle group. 75¢.



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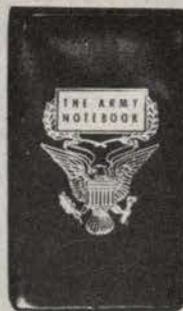
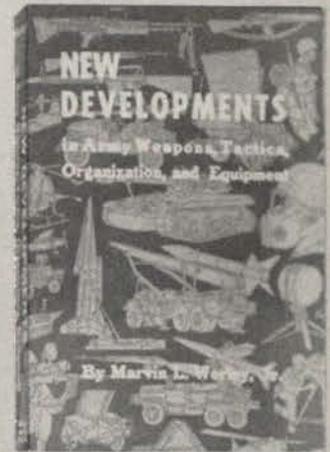
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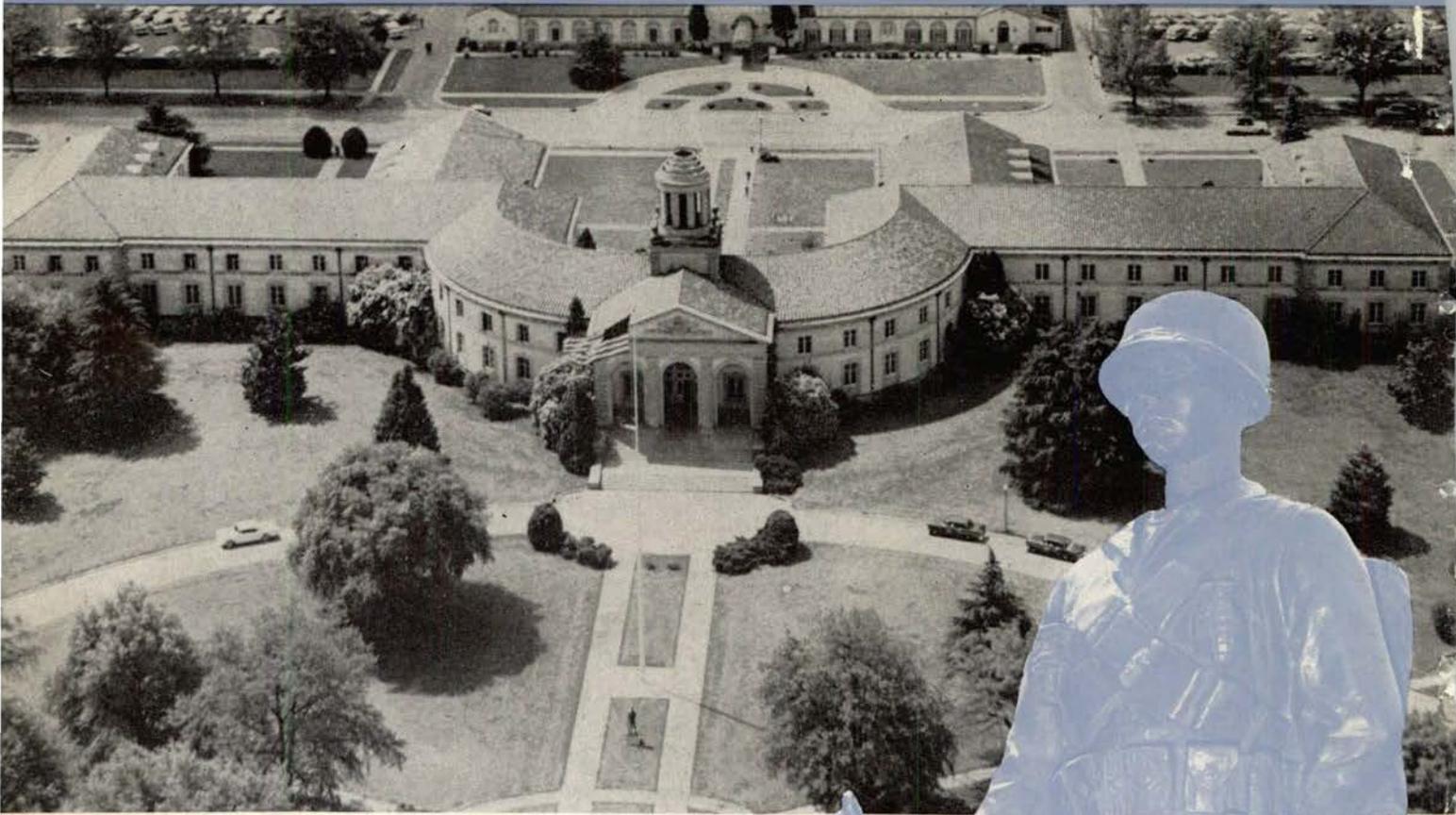
Read for Professional Development

Army Chief of Staff General Maxwell D. Taylor, in a graduation address to cadets of the U. S. Military Academy, remarked, "The day has long since passed when an officer's bookshelf can consist merely of Steele's 'Military Campaigns,' the Manual for Courts-Martial, and a few Army regulations. These books, worthy as they are, need the supplement of a large, well-thumbed library of works covering . . . the whole gamut of the military profession . . ."

Infantrymen, particularly officers and noncommissioned officers, should build a select library of current military reading in order to keep abreast of new developments and to insure professional growth. Listed below are several recommended books which are available through the Book Department of the United States Army Infantry School. Start or add to your library now by purchasing one or all of these excellent publications at special Book Department prices:

New Developments in Army Weapons, Tactics, Organization and Equipment, by Marvin L. Worley, Jr.	\$3.15
The Officers Guide	\$5.40
Paratrooper, by Lt Cols F. X. Bradley & H. G. Wood	\$3.15
New Drill Regulations	\$1.80
The Army Notebook, by Col Sidney Morgan	\$1.40

Send your order directly to the Book Department, United States Army Infantry School, Fort Benning, Georgia. If the order is less than \$5.00, add 25 cents to cover postage. For orders of \$5.00 or more, add five percent of the total amount of the order.



A bronze statue dedicated to "The American Infantryman" has been placed in front of the United States Army Infantry School. The monument is a nine-foot replica of the American Doughboy Statue sculptured by Ernest Kunst and erected in Berlin as a tribute to the American soldier. Financed by contributions from American Infantrymen all over the world, the replica at the home of the Infantryman honors the foot soldier who, since the founding of this country, has been the bulwark of our national defense. In erecting this memorial we mark the passing of the Infantryman as we have known him in the past—a soldier who has moved primarily on foot to close with and destroy the enemy. At the same time, we hail the new Infantryman, who will thunder into battle in amphibious, armor-protected Infantry carriers—who will hurdle obstacles on the ground by striking through the air in planes, helicopters, flying jeeps or missiles to destroy his foe.

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