

Maintenance



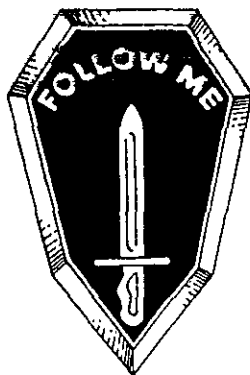
Infantry

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Commandant's NOTE

MAJOR GENERAL KENNETH C. LEUER Chief of Infantry

INFANTRY DOCTRINE—WHAT SHOULD IT BE?

Here at the Infantry School, one of our most important missions is to keep the field supplied with accurate, up-to-date doctrinal publications. I would like to discuss briefly the meaning of the term *doctrine* and some implications for the design and development of doctrinal literature.

The word literally means “teaching” or “instruction,” or “something that is taught.” But it can also be defined as a principle or a body of principles that is taught, believed, or advocated. Although the Army Dictionary of Terms seems to say that the word *doctrine* is used only in the latter sense—an authoritative fundamental principle which is used to guide the actions of military forces—the actual usage of the word in the Army does not appear to be that precise. For example, doctrinal publications use a variety of nearly synonymous terms such as *principles, concepts, imperatives, fundamentals, and tenets*, along with equally synonymous terms such as *tactics, techniques, methods, procedures, and skills*.

What, then, should be included in doctrinal publications? The answer to this question cannot be obtained without first examining the target audience for each publication. Infantry doctrinal publications try to address the needs of every echelon, from the squad leader to the brigade commander and everything in between. Each publication, however, focuses on a specific organizational level and is vertically integrated two echelons above and below that level. These publications must address a number of organizations that have different capabilities and limitations (yet with increasing similarities the lower the echelon), and they must serve the needs of the total Army, not just active duty units.

Doctrinal manuals are also used extensively by instructors at all service schools, in the field by ROTC instructor groups and readiness and mobilization regions, and by all the non-infantry units that are required to perform infantry tasks for their own security. In addition, infan-

try doctrinal manuals are frequently used by other branches of the Army and by other services to understand the employment of maneuver units as well as their capabilities, limitations, and support considerations.

The primary purpose of core doctrinal publications (platoon, company, battalion, brigade) should be to facilitate problem-solving for the leader at each of these levels. This purpose can be accomplished in many ways, but it should focus primarily on the codification of principles and concepts. This does not necessarily imply stovepiping the same concepts from echelons above corps down to fire-team level. For example, there are fundamental principles for employing a field army, and there are fundamental principles for employing a squad. To a higher level commander, the “doctrine” or principles for employing a squad or team may seem like only so many techniques or standing operating procedures (SOPs), but in the eyes of the platoon or squad leader, these techniques or SOPs are the very things on which he needs to train his soldiers.

Doctrinal publications should also address the capabilities and limitations of a unit and the employment considerations that will help a leader solve problems through his analysis of METT-T. This provides him with a framework and the basic knowledge that he must have before entering the problem-solving process.

Another key function of doctrinal publications is standardization. Standard procedures, especially activities like staff procedures and drills, improve interoperability and ultimately facilitate synchronization on the battlefield. Standardization also makes it easier for a leader to move on to the problem-solving mode by eliminating many of the low-level problems. It solves questions such as where items of equipment on the TOE go and what function the TOE designer intended for them.

The standardization of procedures for gaining and employing support is especially critical, and these are

found throughout our doctrinal manuals, which serve as the key source for implementation of many STANAGs (standardization agreements) and other agreements. This kind of standardization certainly improves the flexibility and interchangeability of maneuver units on the battlefield.

Maneuver doctrinal manuals must offer a careful balance between theory and application (the "how-to"). The "how-to" of tactics, techniques, and procedures must represent the best ways of doing things. They must stem from lessons learned both from history and from recent combat action. In this sense, doctrinal manuals preserve the lessons learned and prevent a sometimes painful relearning process later. "Cookie cutter" solutions must be stringently avoided, however, because the intent is to foster a problem-solving approach.

The content of doctrinal manuals is also affected greatly by mobilization considerations. Since National Guard and Army Reserve units have few large-scale training opportunities, they need an emphasis on "how-to" that focuses on proven tactics, techniques, and standardized procedures. This gives them the best opportunity to "do it right the first time" and offers them the best return on their most precious commodity—time.

Our doctrinal manuals also serve as textbooks and reference works in the school and in the field. The link between the manuals and the mission training plan is especially critical; the base doctrinal manual serves as the point of departure for the mission training plan, which tells the commander how to train his unit to accomplish his doctrinal missions successfully.

When and how is new doctrine developed? In theory, doctrine should guide the development of force structure and new equipment. Often, however, it is developed or revised when doctrinal voids are discovered, technology outdates doctrine, deficiencies are identified, capstone manuals are revised, or the force structure changes.

The present doctrinal development process is governed by TRADOC Regulation 11-7, which is now being revised. The Infantry School develops and fields all infantry doctrine from the individual soldier level through the brigade level. The school shares with the Armor School proponentcy for heavy force doctrine from company through brigade. It also produces some environmental manuals.

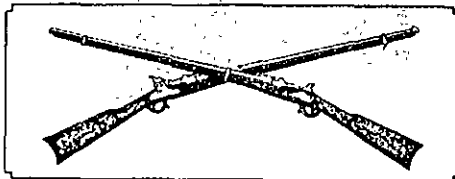
The actual development of a doctrinal manual goes through three phases—research and writing, staffing, and approval. A manual is written in progressive stages—outline, preliminary draft, coordinating draft, and final draft. The outline and the preliminary draft undergo comprehensive reviews through internal staffing, and the coordinating draft is staffed externally with other TRADOC schools and field units. The comments made are incorporated into the final draft and, once approved, this draft is considered doctrinally correct and ready for publication.

The field review of doctrinal publications is one of the most important parts of this process. The quality of USAIS doctrinal literature is dependent upon disciplined, effective review by the field. A number of proposals have been made recently to increase field participation in the validation process, including the application of the doctrine by maneuver units in field exercises before its publication.

I expect an increase in the review and revision of doctrinal manuals as we move forward in the development of the new Joint Readiness Training Center. The center will evaluate a light unit's ability to apply doctrine in the field, as the National Training Center has done with heavy forces. Already, this relationship at the NTC has had a dramatic effect, in the sense not only that doctrine has vastly improved, but also that more commanders and staffs are now reading and studying doctrine.

As the Chief of Infantry, I am committed to providing the field with the best available infantry doctrinal publications, and units in the field have an important role to play in that process. My intent is to reduce the amount of literature published in terms of both bulk and number of publications, yet simultaneously to increase its relevance, timeliness, and readability. In this regard, units in the field may look forward to the consolidation of the many low-echelon infantry publications in the near future. This is in consonance with the fact that we are one infantry; although we may arrive on the battlefield by various means, once there, our missions are relatively the same.

Your role in the field as validator, and ultimately as recipient and executor of infantry doctrine, is critical. I look forward to working with you in the future with the goal of producing the best possible doctrine for our infantrymen.



INFANTRY LETTERS



UNIVERSAL SKILLS

Once again the issue of the specialization of the Infantry rears its head. Colonel Huba Wass de Czege's article in *INFANTRY*'s September-October 1986 issue (pages 13-15) and Captain Marty J. Eaton's letter in the March-April 1987 (page 4) both lead to the conclusion that *Infantry should be divided as the Artillery branch was divided into the Air Defense and the Field Artillery branches.*

Before serving as a mechanized infantry company commander in the 3d Armored Division, I had never been in a mechanized unit, but I found the transition quite easy and discovered a few interesting things. The best squad leader in *my company in all phases—maintenance, tactics, and so on—was a sergeant who had previously served only in airborne units. My lieutenants had as a basic weakness the concept of not dismounting, because they felt their M113s would carry the day in most if not all situations.*

In the combat support company I had commanded previously, my antitank platoon sergeant had had extensive service in a Ranger battalion and little mechanized experience, but his platoon was credited by the corps IG with the best OR rate and maintenance program in the corps.

My point is that the basic infantry skills are universal. I believe that an officer or soldier firmly schooled in the basics of infantry makes an excellent infantryman no matter what "type" he is. Personally, I believe the transition from light to heavy is easier than the other way around.

There is no aspect of the infantry that requires the specialization of officers and NCOs. Outside of the gunners, I am not convinced that the 11M MOS is a valid concept. All infantrymen need to know how to breach fortifications; all infantrymen need to know patrolling and small unit tactics. The list is endless.

In addition to these skills, *some* infan-

trymen need to know how to maintain a Bradley, how to jump out of an airplane, and a few other things.

We are not creating a "Jack of all trades." *We are creating a soldier who can conduct the basic mission of being an infantryman in different environments with different assets—a feat that is not at all impossible.*

What I am afraid Captain Eaton has lost sight of is that mechanized infantry is not another branch, it is another form of the basic branch. The skills that defeat the enemy are the same in all the different aspects the infantry assumes.

JACK E. MUNDSTOCK
MAJ, Infantry
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BOOTS AND FEET

Lieutenant Larry T. Staats' article "The Feet: Mission-Essential Equipment" (*INFANTRY*, March-April 1987, page 13) brought out some good thoughts on the care of a soldier's feet.

I've done some walking (with the 31st, 47th, 22d, 14th, and 18th Infantry Regiments), and on most of these walks, blisters would appear. It seemed that no matter what kind of combat boots I wore, I'd still get blisters. I took to carrying a needle, matches, merthiolate, and a roll of adhesive tape. On a break, I would heat the needle, break the blister, put on the merthiolate, slap on the adhesive tape, and be ready to move. It would still hurt but not as much.

One exception was the jungle boots issued to me in the 18th Infantry. (They may hurt, too, in time.) It just happened that near the beginning of that tour we went on operations in the "Rung Sat" swamp for three days at a time, breaking in 9th Division officers whose units were soon to arrive in Vietnam. Walking in all that water and mud softened the boots and, I suppose, molded them to our

feet. No blisters. But there was the problem of immersion foot.

Now everyone doesn't have a swamp to wade around in to shape up their boots, and this might not work on regular combat boots in any case. But this brings me to my final point: *Once I read about some soldiers who had grease in their boots. Although there was no explanation for the grease, I got to thinking—grease, slippery, less friction. A jar of vaseline didn't weigh that much, so I added one to the stuff that went to the field with me. I put the vaseline on my socks, over the top of where my toes rubbed the toe of the boot, back on the heel, and on the sock where it covered the ball of the foot where the calluses were. It worked pretty well.*

Whether this would work for everyone or not, I'm not sure. But if it cuts down on blisters and sick call time and helps accomplish the mission, then all you have to worry about is some yucky socks to be cleaned.

W.P. Conboy
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Wenonah, New Jersey

BELLY FLOPPER TO JEEP

The picture in *INFANTRY*'s March-April 1987 issue of the Belly Flopper (page 7) recalled to my mind the many times I saw that vehicle scooting around Fort Benning when I served there 1933-38. Since you mentioned its role in the evolution of the jeep, I thought you might be interested in this additional information for your archives.

In the summer of 1944 as a student at the Army Navy College, I spent one month of the course at the Navy War College at Newport, Rhode Island, where many wealthy families maintained summer homes. They often included students in their social activities, and on one such occasion I was invited to the home of a

Mr. Frazer, who had started as a blacksmith in Tennessee, then worked his way up the ladder as the automobile industry evolved, finally becoming the head of the Willys Overland Company. In an after-dinner conversation, he told me that he had conferred at Fort Benning with the then-commandant, Brigadier General Walter Short, about building a lightweight utility vehicle. General Short told him that what the Army wanted was a vehicle that four men could carry across a fordable stream. Mr. Frazer replied, "General, what we want to do is build a vehicle that will carry four men across a fordable stream."

Following this visit, Willys began development, so when the Army did eventually generate its requirement, Willys with its head start won the competition hands down. In view of the number of vehicles required, however, it was decided that both Ford and Willys would build them. (As Mr. Frazer related it to me, Edsel Ford visited the Willys plant to receive the plans and remarked, "We don't like using your plans a damned bit." Mr. Frazer replied, "Edsel, you don't think we like letting you use them, do you?") As one might expect from a proud industrial giant, Ford did not surrender completely. The company made just enough minor changes that an experienced mechanic could distinguish between the two, and many claimed the Fords were better, although I could never tell the difference myself.

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LOST ART TO FINE ART

My compliments to Major Thomas J. Kuster, Jr., on his timely and vital article "The Lost Art of Patrolling" (INFANTRY, May-June 1987, pages 21-25). Except for a few patrol-oriented units such as the Rangers, for whom patrolling is a standard operation, I would venture to say that most infantry units pay only FM-lip service to what is truly an infantryman's art form.

Major Kuster makes the point that les-

sons learned in combat are rarely passed along to succeeding generations; this is especially true when we phase from a combat (Vietnam) to a non-combat (post-Vietnam) environment, and when personnel who would be in a position to impart this hands-on field expertise either leave the service or are promoted away from positions in which they might influence novice patrol operators.

What then will it take to ensure that the infantryman—who will be the commander's "eyes and ears" during the next conflict, be it low-intensity or classical—does not have to re-learn the tricks of the patrolling trade? A few suggestions:

First, unit commanders need to be flexible. Too often, written patrolling doctrine becomes "the bible" with no deviations allowed. Patrol commanders, most often junior NCOs—with only outline guidance—should be allowed to develop patrol techniques based on the "what works best" principle rather than on strict adherence to uniform and equipment SOPs. Pragmatic innovation should be the order of the day.

Second, we need to incorporate patrolling tips into current doctrinal manuals, perhaps as an appendix. This would be a compilation of lessons learned—along the lines of those laid out by Major Kuster—based upon the following:

Historical precedent. We should look at the techniques used successfully by U.S. forces during World War II, Korea, and Vietnam—in different theaters or areas of operation—to see which of them maintain their validity. Further, techniques adopted by foreign services, both Allied and opposing, should be studied for applicability.

Contemporary patrolling techniques. We should compile the techniques presently used by specialized units that are tasked with patrolling as a primary or secondary mission: U.S. Army Rangers and Special Forces, Navy SEALs, Marine Reconnaissance. This should include a study of Active, Reserve, and National Guard components. Again, techniques adopted by foreign services—from the then-Rhodesian infantry units in Africa to the British forces serving in Northern Ireland—should be analyzed and adopted, if they are workable within

the U.S. military context.

Patrolling, regardless of the type of conflict, will always be integral to the commander's planning sequence. The patrol, with its myriad missions, must be as self-protective, versatile in organization, and original in concept, in its peacetime configuration as it necessarily must be during times of conflict.

The lost art of patrolling? If we're going to score first-time battlefield successes—and save lives—the next time around, we had better rewrite that phrase to read "the *fine art of patrolling.*"

JOHN COLEMAN
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NAVIGATIONAL ERRORS

In the article "Know Your Angles" (INFANTRY, March-April 1987, page 38), Dr. Georgann Lucariello states that it is a "problem when instructors tell students to ignore the G-M angle when navigating because the change is so small." The author then provides data showing that errors from other sources, "within accepted Army standards," may be five to ten times as great.

I believe the author is trying to illustrate the principle that errors may add, and that the elimination of little errors will usually give a result that is a little better, even if a little better is still poor due to larger uncorrectable errors.

The proper question is how large the G-M angle can be before the benefits of correction outweigh the risks inherent in computation, and how this "critical" angle varies from one navigation problem to another. Shooting from the hip, I can't think of a situation in which I would risk a 2-degree or a 10-degree error to gain a 1-degree correction, especially in light of the larger errors implicit in dead reckoning with a compass in most terrain.

An additional reason for ignoring the Fort Benning G-M angle in field instruction is that it is too small to allow for testing. With a 1-degree G-M angle, statistical analyses of the performance of a large number of soldiers would be required to determine the differences be-

tween the groups that ignored the correction and those that used it. I assume soldiers need individual feedback about their performance.

Unfortunately, in most of the world the G-M angle is too large to ignore, and at a good many Army training areas it is too small to allow for effective training and practice in the field. There is, however, an inexpensive way to solve the latter problem, regardless of the local magnetic declination. The grid on training maps need only be rotated (by the printer) to artificially create a significant G-M angle, say 11 degrees. Actually, the terrain is rotated under the grid, since the grid is natural only when parallel to the map edges. Rotation should be in a direction to minimize the slight shift in sun and star azimuths. At first glance, it may seem that such a rotation would result in an unnatural situation for the trainee, but that would be true only for trainees who grew up nearby and knew the training area intimately.

WILLIAM W. COCHRAN

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EDITOR'S NOTE: Dr. Lucariello replies as follows:

The purpose of my article was first to make soldiers aware of the discrepancy between what is printed on the map sheet and the current declination, and second to warn them about ignoring seemingly small declination differences. The unadjusted differences, or choosing to ignore a regional declination, can result in an error that is additive in nature.

I agree with Mr. Cochran's comment regarding performance pressures on the soldier. But the G-M angle and conversion procedure is one bit of information that is written on the map sheet, and the declination can be easily updated.

Granted, for short distances, the small declination error can be ignored with relatively few significant consequences. However, as was indicated in the article, this ignorance exacerbates navigational error over long distances.

Although lack of accuracy while navigating is a significant problem, a more catastrophic problem arises when

a soldier is positioned in one area and calls for fire in a nearby area. His choice of ignoring the declination, paired with the firer's choice, may result in extensive casualties.

Therefore, the question I pose to Mr. Cochran is this: What is the cut-off between "too small" a G-M angle to make a difference and one large enough to be significant?

MORTARS FOR LIGHT PLATOONS

The article "Mortars for Light Platoons," by Richard K. Fickett (INFANTRY, May-June 1987, page 15) is right on the money.

The method of employment Mr. Fickett outlines is, to my recollection, the one used by our 60mm mortar section in World War II. Our mortar section sergeant was the FO, and the FDC was, in essence, between his ears. The mortars were usually close enough to him for his hand and arm signals to be effective. To my recollection, our 60mm mortars were much more useful, reliable, and effective than our machineguns (M1919A4s). The M-2 baseplate for the mortar gave a very nice direct fire capability to it also.

The weapon capability chart in this article seems to be quite subjective. The 30-06 round fired by the BAR (Brown-ing automatic rifle) and the LMG (light machinegun) is the same round, and has the same effects. In practice, the LMG is limited by the burn-out range of its tracers, which puts its effective range at about 700 meters. The BAR may be the single most accurate rifle ever built. Since good shooters can hold the M-1 rifle or the M14 rifle in the black at 1,000 yards, I'm sure that the BAR could also hold in the black at 1,000 yards (or meters) and beyond.

Since light infantry carries its ammunition into battle, high cyclic rates of fire are, or can be, detrimental to them. Light infantry needs one round, single shot effectiveness. I do not recall the exact numbers now, but in World War II it took about 10,000 rounds of 30-06 ammunition to inflict one casualty on the enemy. (With the 5.56mm round, that number

came out to be something like 100,000.) Numbers like that make the 60mm mortar round seem like a real bargain, don't they?

Infantry units at the rifle squad level cannot function without having the indirect fire capability of a 60mm mortar available to them. The terminal ballistics of high angle fire is a requirement for success on any battlefield, low-intensity or high-intensity. The 60mm mortar round kind of whispers in on its final trajectory, giving very little notice of its arrival, and this makes it more effective than noisier kinds of shells. Also, the firing signature of a 60mm mortar gets lost out on a battlefield. In comparison, the firing signature of a light machinegun is spectacular and will draw counterfire from everything the enemy has available.

Radar detection and sophisticated artillery would probably not be present on the low-intensity battlefield to bother the 60mm mortar sections. Even where they were present, quite enough time would elapse for the mortar crew to displace to alternate locations. Under some conditions, the baseplates could be left behind, and when the positions were re-occupied the original firing data would still be useful.

Machineguns are for high-intensity battlefields. Mr. Fickett is correct in saying that our light infantry cannot afford to deploy without the 60mm mortar in their possession. One also has to keep in mind that a light infantry brigade has no artillery. (My World War II division's regiments all had cannon companies armed with 105mm howitzers, in addition to the guns of the division artillery.) Even in those days, mortars were something like three or four times as effective as machineguns and rifles.

Would I trade a pair of LMGs for a 60mm mortar? You bet I would!

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INFANTRY NEWS



THE SCHOOL BRIGADE (TSB), U.S. Army Infantry School, recently had three of its battalions redesignated under the U.S. Army Regimental System.

The 1st, 2d, and 5th Battalions, TSB, in ceremonies at Fort Benning in mid-August, became respectively the 1st, 2d, and 3d Battalions, 11th Infantry Regiment, The School Brigade.

Infantry Officer Advanced Course students are assigned to 1st Battalion, Infantry Officer Basic Course students to 2d Battalion, and officer candidates to 3d Battalion.

The Brigade's former 4th Battalion (Airborne) was previously redesignated the 1st Battalion, 507th Infantry Regiment.

THE CENTER FOR ARMY Leadership at the U.S. Army Command and General Staff College has announced the publication of a new field manual, FM 22-102, Soldier Team Development. The manual, which compliments FM 22-100, the Army's basic leadership manual, was written to help leaders at company level and below in developing soldier teams to meet the challenge of the AirLand Battlefield.

The manual can be ordered through normal DA 12 series distribution. Account holders who are on distribution for FM 22-100 will automatically receive a copy of FM 22-102.

THE U.S. ARMY INFANTRY Board submitted the following items:

Device-Based BRM Training. The results of evaluations conducted over the past several years have indicated that improvements in the training effectiveness and economy of basic rifle marksmanship may be achieved through the use of device-based training.

At the request of the Infantry School, the Board conducted a concept evaluation

program (CEP) test to further explore the potential of selected device-based training programs of instruction (POIs). This test focused primarily on the relative effectiveness of the alternative POIs rather than on the materiel systems.

The training devices used included the Multipurpose Arcade Combat Simulator (MACS), a low-fidelity, indoor, part-task trainer that uses a light pen to engage computer-generated graphics displayed on a monitor; the Location of Miss and Hit (LOMAH), an outdoor live fire range incorporating an automatic electronic feedback system to provide positional information regarding the location of the projectile with respect to the target; and the Weaponeer, an indoor M16A1 rifle marksmanship diagnostic and training device designed to feed back an individual firer's performance through the use of a console monitor and a hard-copy printout. (See also INFANTRY, September-October 1986, page 7.)

Testing was conducted at Fort Benning from 12 February through 25 March 1987 using soldiers undergoing One Station Unit Training (OSUT) and at Fort Jackson from 28 March through 20 May 1987 using soldiers undergoing Branch Immaterial Basic Training.

Performance data was collected from soldiers training on devices and during live fire in order to compare the relative effectiveness of the standard BRM POI and the five test POIs. Each test POI used one or more of the training devices during selected periods of instruction; all other periods of instruction were the same as in the standard BRM POI.

The Infantry School will use the test results in developing optimum training strategies and in initiating actions to obtain appropriate training devices.

BFVS High Survivability Modifications. To counter the proliferation of modernized threat weapons on the battlefield and their effect on Bradley Fighting Vehicle Systems (BFVSs), a series

of high survivability (HS) modifications have been and are being made to the systems. Although it is impossible to prevent all penetration of modern threat weapons, the HS modifications are designed to prevent catastrophic loss of the vehicle and to provide increased protection for the crew or squad.

An initial operational test and evaluation of these modifications was conducted at Fort Benning during the period 2 February through 17 April 1987. Test soldiers consisted of four Bradley infantry fighting vehicle (BIFV) squads from the 29th Infantry Regiment, two Bradley cavalry fighting vehicle (BCFV) squads from the U.S. Army Armor Center at Fort Knox, and four main battle tank crews and four M113A2 infantry squads from the 197th Infantry Brigade.

The HS modifications looked at during this test included armor tiles applied to the hull and turret; an interior spall liner; restowage of ammunition, BII, and TOE equipment; a hydraulic lifting device for the engine access door; re-indexed torsion bars; improved brake linkage, transmission controller, cold-start check valves, and fan-speed valves; relocation and redesign of fire suppression handles and swim drain plugs; and road wheel debris covers and brush guards.

The test addressed mission performance, logistics, transportability, training, human factors, and safety. Additionally, side-by-side mobility comparisons were made between the BIFV/BCFV HS vehicles and the standard M2 BIFV/M3 BCFV, the M1 tank, and the M113A2 armored personnel carrier. The decision authority will use these and results from other testing to arrive at a procurement decision.

BFV Trim Vane Positive Lock Modification Kit. In April 1987 the Department of the Army temporarily suspended all Bradley fighting vehicle (BFV) swim operations and directed the

U.S. Army Materiel Command to provide a positive lock device that would prevent the inadvertent collapse of the BFV trim vane. The Infantry Board conducted an operational assessment, from 20 to 23 April 1987, of one trim vane safety lock modification kit that provided a visual means of checking for proper trim vane erection but did not, in itself, ensure proper erection.

On 27 and 28 May 1987 the Board conducted an assessment of a second trim vane positive lock modification kit (part number 57K0303). This kit consists of two solid-bar rigid links, two mounting brackets, two spring-loaded locking pins, and associated hardware. The installation of this kit requires the permanent removal of the current locking pin actuating cables, the locking link slide tracks, the locking pins, and the cable support guides.

A contractor installed the kit, and the unit prepared the vehicle for swim operations that included water entry, an hour of still water swimming, and water exit. (EDITOR'S NOTE: The Infantry School has since endorsed the use of the trim vane locking device for training individual soldiers in various Bradley courses, for new equipment training, and for training units already fielded with the vehicle. The Department of the Army, on 14 July, authorized the resumption of Bradley swimming once units were equipped with the locking devices and once drivers, leaders, and trainers were trained on their use and inspection.)

THE NATIONAL INFANTRY Museum has provided the following items:

The Museum is pleased with its newly acquired oil painting of General Philip Henry Sheridan, who lived from 1831 to 1888. He was commissioned an Infantry officer in 1853 upon his graduation from West Point, but gained his reputation as a brilliant cavalry officer in the Civil War. The portrait is being displayed in a grouping of Civil War artifacts that includes a 34-star American flag recovered from the battlefield at Gettysburg and a trunk that belonged to General Sheridan, along with a canvas trunk cover stamped with his name.

Some other notable purchases made

recently are a Civil War musical horn; a Lafayette coverlet, blue and white double weave, that commemorated Lafayette's 1825 visit to the United States; and a set of 12 Civil War prints by the artist Harlow, depicting a variety of Civil War personages and events, encased in a portfolio titled "Army Memories."

A Model 1917 trench knife and scabbard, the type used by American Infantry soldiers in World War I, has been donated by Under Secretary of the Army James R. Ambrose.

Other donations include:

- A Nazi war flag captured in World War II by Company B of the 2d Ranger Battalion at a German headquarters bunker at the Lacrist Batteries outside Brest, France.

- A framed print of General Douglas MacArthur painted by artist Carl Bohnen in 1942.

- A book titled *The 82nd Airborne Division: "America's Guard of Honor."*

- A book titled *What Are Generals Made Of?* donated by its author, Major General Aubrey S. Newman.

- A framed photograph of the 349th Infantry Regiment, 88th Infantry Division, taken soon after the drive to Rome was begun, on a mountainside just south of Itri in Italy, where the unit fought dur-

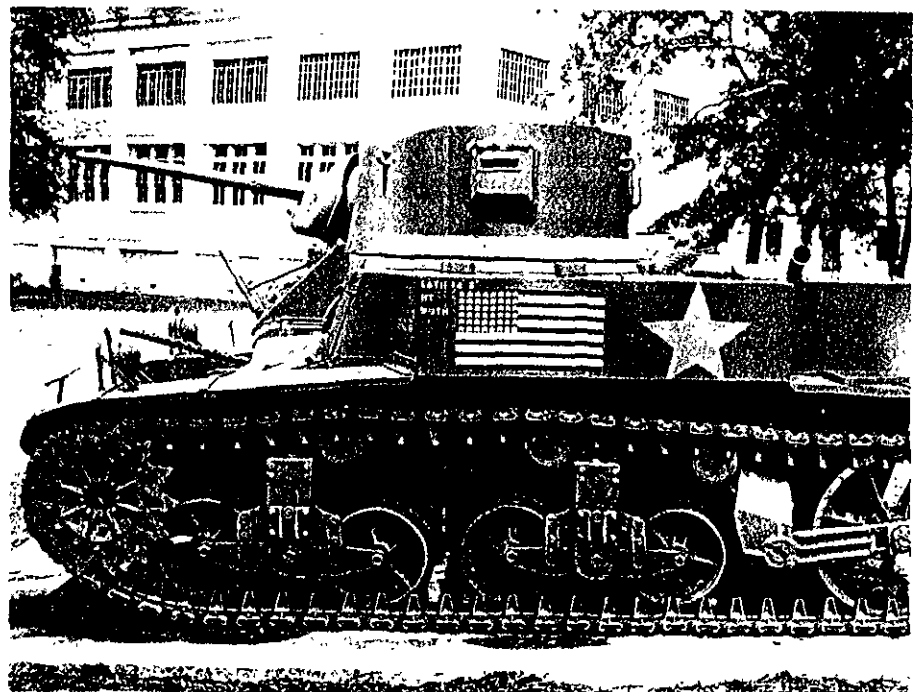
ing World War II.

- A large plaque featuring a blow-up of a recent newspaper article honoring Army wives in general, and featuring the wives of Fort Benning's commanding general and the commandant of the School of the Americas. The plaque will be used in exhibits that deal with the soldier's family and community life in the military establishment.

The Museum prepared special exhibits honoring Memorial Day and Law Day and showed still another exhibit in honor of the anniversary of the Constitution titled "U.S. Infantry: Defender of the Constitution 1787-1987."

As part of its educational and community relations programs, the Museum will co-sponsor, with Columbus College, a lecture series that deals with the history of Fort Benning and its relationship with the local community. Displays will be provided by the Museum, and the lectures will be delivered by Dr. Charles White, the Fort Benning Historian.

The photograph shown here is that of the M3A1 "Stewart" light tank on display on the Museum grounds. The Stewart was the first American tank committed to use in World War II, furnished to the British on lend-lease. Its first battle was against the Germans at Sidi Rezegh, Libya, in November 1941. It was then



M3A1 Stewart Light Tank.

widely used by American soldiers after the United States entered the war.

The National Infantry Museum Society, formed at Fort Benning a number of years ago to assist the Museum with financial and volunteer support, is open to anyone who is interested in joining. The cost is \$2.00 for a one-year membership or \$10.00 for a lifetime membership.

Additional information about the Museum and the Society is available from the Director, National Infantry Museum, Fort Benning, GA 31905-5273; AUTOVON 835-2958 or commercial (404) 545-2958.

A BALLISTIC BLANKET for the TOW antiarmor system has been developed by the U.S. Army Natick Research, Development, and Engineering Center as an interim solution for a field safety problem.

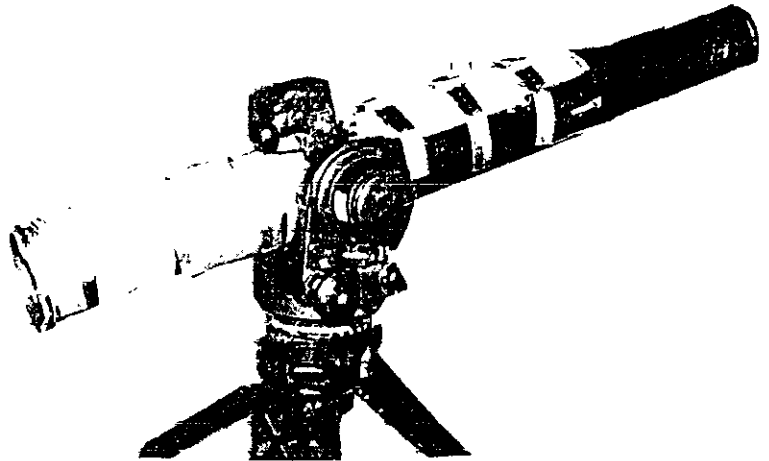
Late in 1986, during training maneuvers, two TOW missile test firings failed because the launch motors exploded instead of burning normally. In each instance, the fragmenting motor sent debris in all directions. Gunners and assistant gunners within ten feet of the weapon could have been seriously injured.

For a quick-fix solution, the U.S. Army Missile Command (MICOM) asked that Natick design, develop, and construct a ballistic protective Kevlar blanket.

Kelvar, which is stronger than steel, pound for pound, is used for the inside layers of the blankets. The outside covering is a coated polyester fabric that is used on TEMPER tents. TOW crews wrap these reusable blankets fore and aft on the launch tubes, attaching them with high strength webbing and buckles around the tube.

In reliability testing, 60 of the blankets were subjected to overpressure fragmentation explosions. The blankets will contain all fragmentation resulting from an explosion within the firing tube.

For the TOW missiles used on the ground and on jeeps, the blanket is an acceptable short-term solution to the problem. Up to 300 blankets can be fielded to supply training centers worldwide so



TOW with protective blankets.

that TOW training can continue with more safety.

For the TOW pods on attack helicopters, however, Natick is now working on a ballistic system. Although

the Kevlar blankets will work ballistically on these TOWs as well, they may not be acceptable aerodynamically because of their weight.

A NEW MINE CLEARING line charge (MICLIC) is now being issued to units in the continental United States. The rocket-propelled system is a joint Army-Marine Corps development adopted for the Army by the Troop Support Command's Belvoir Research Development and Engineering Center.

The system features a Marine Corps launching system and explosive line charge mounted on a standard Army trailer. In operation, a developed rocket propels the line charge across an enemy

minefield from a standoff position. The Army plans to field about 1,400 systems.

The assembled system can be towed by a light forces engineer vehicle, a tank, or an armored personnel carrier. Command detonation of the charge causes the mines to detonate, clearing a path 100 meters long by eight meters wide. Three new safety improvements will be incorporated into MICLIC during the fielding process—an improved fuze, an arresting cable disconnect, and a trailer disconnect.

Fielding in Europe will begin this fall.

A NEW GENERATION of protective masks for U.S. Army and Marine Corps personnel will be produced under a contract awarded in June 1987. The contract calls for the production of 300,000 M40 and M42 protective masks.

The M40 mask was developed for use by the infantryman, while the M42 mask

was developed for the combat vehicle crewman. They replace three different types of masks (the M9A1, the M17A2, and the M25A1), which have been in the field for some 25 years.

The masks are scheduled for fielding by June of 1988.



PROFESSIONAL NOTES



Character and Leadership

MAJOR ROBERT L. MAGINNIS

George Washington, this country's first great military leader and our first president, once said: "War must be carried on systematically, and to do it you must have men of character activated by principles of honor."

History has shown us that in any fundamental clash between great nations, when their very existence is at stake, the final issue is usually determined by the character of their leaders and not by intellectual factors.

The word "character" comes from a Greek word that means "engraving." When it is applied to a leader, it designates that leader's moral worth or value; it results from a four-dimensional complex development process that includes behavioral tendencies (personality), values, personal relationships, and experiences.

Understanding this complex character development is important for today's military leader because that knowledge will enable him not only to develop his own character but also to guide the character development of his subordinates. This process is best illustrated when it is applied to a prominent military figure. And what better figure can we use as we near the bicentennial of our Constitution than George Washington? His total character certainly provides us a worthy example.

George's father, Augustine, took pains to teach him to be unselfish, imbuing him with a spirit of justice and inspiring him

with a love of truth. His father also taught him to know and to worship God.

George was Augustine's third son and first child by his second wife, Mary Ball Washington. Augustine provided for his family by strip-mining Virginia wilderness for iron ore that he then shipped to England. Although he died when George was only 11, he left a legacy of Judeo-Christian values, a strong work ethic, and an inheritance (Ferry Farm).

Mary Ball Washington was an imperious woman, of strong will, who ruled her family alone. She was endowed with plain, direct good sense, and was given to making prompt decisions. She was dignified, reserved, and sober-minded. The daughter of an almost illiterate girl of only fair English blood, she had been orphaned early in life and subsequently raised by a guardian. She had met the much older Augustine at the local vestry (church).

Mary loved her five children and wished passionately to possess their emotions. Her powerful maternal affection reduced all the children to obedience with one exception—George. Interestingly, he was thought to be her favorite; perhaps it was because he best reflected her own fiery temperament.

During George's early years at Ferry Farm, Mary made a practice of reading to the children from Sir Matthew Hale's *Contemplations*. These admirable religious and moral maxims were tenets

for both outward action and self-government. They apparently sank deep into Washington's mind and influenced his blossoming character.

Mary never encouraged George's military pursuits. She especially resented his participation in the French and Indian War. Later, even during the dark days of Morristown and Valley Forge, she constantly complained in public about his failure to pay her sufficient attention.

Mary had little enduring influence on George's life. His character was much more influenced by his association with his half-brother Lawrence (Augustine's eldest son) and the Fairfaxes of Belvoir.

Lawrence's return from school in England in 1738, and George's first meeting with him, was the first significant emotional event in George's life. Lawrence's participation in an amphibious operation against Cartagena in the West Indies in 1741 made him all the more a hero in George's eyes. The manly and cultured elder Washington provided an excellent role model for George.

In July 1743 Lawrence married Ann, the daughter of Lord William Fairfax. They settled on Lawrence's estate on the Potomac River, which he re-named in honor of his wartime commander, Admiral Edward Vernon.

In 1747, at the age of 14, George left Mary's control to live under their guardianship. He subsequently spent much of his time with his brother and the

latter's circle of friends, particularly the prominent Fairfaxes. Lawrence's military experience and spirit began to influence George's interest in the martial arts, and George's amusements and acquaintances soon took a military turn.

At Mount Vernon, Lawrence frequently discussed the amphibious operation with his military comrades and "the old gentleman," Colonel William Fairfax, a former British regular. Their "war stories" made a considerable impression on George, so much so that at school his playtime was consumed with drilling and parading willing classmates.

George's early education was guided by at least three "educators" and two military mentors. His first exposure to a formal educational setting probably began when he was six. He reportedly attended the "old fields school" kept by one of Augustine's tenants named Hobby.

When George lived at Ferry Farm he attended the Reverend James Marye's school in Fredericksburg. It was there that he laboriously copied and studied the famous rules of civility—a poor substitute for a course in good manners. At best, this was a meager education.

When he resided with brother Lawrence he attended a "superior school" run by a Mr. Williams. It was here that he learned business skills and perfected his knowledge of mathematics, which led to his surveying competence.

Lawrence's war comrades, Adjutant Muse and Jacob Van Braam, transformed Mount Vernon into a school of arms. Muse frequently instructed young Washington on the art of war, lent him treatises on military tactics, and explained the evolution of the military arm. Jacob Van Braam, a soldier of fortune and a self-professed master of fencing, gave George lessons in handling the sword and accompanied George on several of his wilderness adventures.

In 1751 George accompanied his ailing brother to Barbados, where they hoped that the tropical climate would help Lawrence recover from a racking cough. They returned the following spring but Lawrence died shortly thereafter. Their mutual devotion was evidenced when George was named in Lawrence's will as heir to the estate after Ann and daughter Sarah. Lawrence also left George a social

OFFICERS! FRONT AND CENTER!

On Christmas Day in 1776, General George Washington's troops crossed the Delaware to attack and defeat the Hessian troops in winter quarters at Trenton, New Jersey, in an operation that has been pointed to with pride ever since.

Washington's troops had been driven across New Jersey. They had crossed the Delaware River and had taken up winter quarters at Valley Forge, Pennsylvania. It was a cold winter and the troops were suffering. The morale of the troops and the American colonists was low. Washington conceived of a bold stroke. He would cross the Delaware on Christmas Day and deliver a surprise attack on the Hessians in their winter quarters in Trenton.

This was not a simple operation. The wide Delaware had to be crossed, and accounts state that there was some floating ice in it. The area had many Tories, and there was a possibility that there were even some on Washington's staff. His most trusted staff officer was Major General Lord Stirling, who was his Engineer with the title of Chief Artificer. This officer, General Washington, and an aide even planned the operation in a house away from the rest of the staff to avoid premature disclosure.

In the meantime, Lord Stirling assembled ore boats to carry the troops. These were stable, flat-bottomed boats that drew little water; they were used to bring iron ore down the Delaware to forges. They were manned by a company of men from Marble Head, Massachusetts, many of whom had been fishermen.

On Christmas morning the plans were ready. Washington ordered his troops to form for parade at 1600 and to bring one day's rations with them. When assembled, Washington ordered the officers to come forward and report to him. Then he informed them of the operation and told them to take their men to the boats. The men were not to be instructed on the operation until they were loaded in the boats. Lord Stirling supervised the loading and the crossing.

The rest is well-known history. The Hessians had been celebrating Christmas and were surprised and defeated.

Many believe that the Army custom of calling officers Front and Center at evening parade came from the way General Washington issued his orders on Christmas Day, 1776. (General Bruce C. Clarke, United States Army, Retired.)

legacy that would open important doors in the years to come.

The elder William Fairfax was a grandfather figure for George and was also influential in Washington's character development. He gave his young friend a knowledge of men and manners that no school could and was instrumental in seeing to several of Washington's early jobs.

Washington and Lord Fairfax's son, William George Fairfax, who shared a mutual attraction for the science of surveying, in 1748 traveled as a survey team into the Blue Ridge and Shenandoah wilderness. This shared adventure cemented a lifelong friendship.

George married the widow Martha Dandridge Custis in January 1759. They

had met the year before and, according to George Washington Parke Custis in his *Recollections*, "It was love at first sight."

Martha was only five feet tall, with dark hair, beautiful teeth, hazel eyes, and a plump figure. She was infectiously gentle. She brought to the marriage her late husband's money and his two children.

Despite some initial disagreements, Martha soon created what George had yearned for but never enjoyed at Ferry Farm—a happy home life. Their love and mutual devotion developed as the relationship matured.

Earlier, in 1752, Washington's military career had begun, in effect, when he was appointed adjutant general in the Virginia militia. The following year he was dispatched by Governor Dinwiddie with a

message of protest to the French commandant on the Ohio. The criteria for selecting someone for this dangerous mission were physical strength and moral energy, the courage to cope with the Indians, and the necessary sagacity to negotiate with white men. Although George was only 22, Dinwiddie had confidence in his judgment and abilities.

Washington returned in January 1754 with a defiant message from the French, and the governor immediately took steps to send the Virginia militia into the disputed territories. Lieutenant Colonel Washington, the second-in-command, led the advance party into the wilderness and met and defeated a small group of French troops. Subsequently, the party made camp at Great Meadows and resumed work on Fort Necessity. Meanwhile, the militia commander died at Will's Creek, and this propelled Washington into command.

Throughout the campaign, Washington showed great boldness. On one occasion he met a French force of approximately 1,000 men with only 150 raw recruits. His fearlessness and consequent intimidation of the French went far to offset his inferiority in numbers.

AIDE-DE-CAMP

In April 1755 British General Edward Braddock appointed Washington as an aide-de-camp for his frontier campaign. Interestingly, the British treated him with the utmost courtesy, and he eventually gained Braddock's respect and affection.

Braddock's force marched slowly north. On 9 July it crossed the Monongahela River and was immediately attacked by some 900 French and Indians, who quickly enveloped the British flanks and threatened to completely destroy the larger British force.

At the beginning of the attack, Washington was in trail, suffering from a fever. But at the sound of battle, he mounted his horse and rode everywhere, carrying the orders of his general. Washington's clothing was ripped four times by musket shots, and he had two horses shot from under him.

Washington emerged from this unsuccessful mission as a heroic redeemer of colonial honor. As a result he was commissioned a colonel and made com-

mander-in-chief of the forces for the defense of Virginia with full power to carry out offensive and defensive actions. For two years he protected the vast 350 miles of Virginia frontier with no more than 700 men.

During this command, Washington's leadership was severely tested. In an effort to bring discipline to his militia he established strict rules. For example, he observed that "the men of this regiment are very profane and reprobate" and said "if they do not leave [these practices] off, they shall be severely punished." He promised 100 lashes to any soldier found drunk. He also forced his soldiers to take part in organized prayer meetings. But he was always learning and investigating and continued to study. He bought and read practically every military work he could find. The benefits of his independent study became evident in 1776 and 1777 during his second reconstruction of the Continental Army. His views on cavalry and artillery could only have been formulated by a man of broad military reading and culture.

During the years between his resignation from the militia and the Revolution, he remained in the public eye. Because the local citizens regarded him as a savior, he was consistently re-elected to the Virginia House of Burgesses until 1775. Between trips to Williamsburg for legislative sessions, he managed properties that eventually included nearly 8,000 acres and hundreds of slaves.

PREPARATION

These experiences helped to prepare Washington for his role as commander-in-chief of the Continental Army. The years in the wilderness had toughened him and sharpened his ability to survive, fight, and lead. His "gentleman" years as a government leader and plantation owner and manager had prepared him to manage the vast resources required to support an army in the field and to cope with national and international political negotiations.

Washington's character was evidenced in both significant and subtle situations throughout the American Revolution. Prior to the Battle of Germantown in October 1777, for example, a North Carolina soldier asked Washington to

drink wine with him. At first Washington refused. The soldier exclaimed, "You're above drinking with soldiers!" Washington responded, "Come, I'll drink with you." Afterward the soldier told Washington, "Now, I'll be damned if I don't spend the last drop of my heart's blood for you." This is evidence of Washington's cold exterior but sensitive heart. He even carried this demeanor into battle. French staff officer Barbe-Marbois recorded, "I have been told that he [Washington] preserves in battle the character of humanity which makes him so dear to his soldiers in camp."

During a battle, he would often ride along his lines cheering and calming his soldiers and supervising their firing and movement. His emotion and compassion were especially evident during the winters at Morristown and Valley Forge. Despite the Army's deprivations, he remained hopeful. He wrote from Valley Forge to a friend, "I have no doubt that everything happened for the best, that we shall triumph over all our misfortunes and in the end be happy."

COMPASSION

During the Battle of Princeton on 3 January 1777, Washington rode past an American soldier who was leaning over a wounded British soldier and trying to rob him. Washington drove the thief off and placed a guard over the Redcoat until he could be evacuated.

The great German strategist Von Moltke commented on Washington's tactics during the war. He said "no finer movement was ever executed than the retreat across the Jerseys, the return across the Delaware a first time, and then a second, so as to draw out the enemy in a long thin line." Washington's tactical wisdom, prudence, daring, and quick and hard strikes were expertly and boldly evidenced at Trenton, Princeton, Germantown, Monmouth, and Yorktown.

Washington was not impetuous. Rather, his strongest feature was prudence, and he never acted until every circumstance, every consideration had been maturely weighed. He was a perfectionist. His ruling passion was for accomplishment, and his greatest frustration was military defeat. It appears that the more compli-



cated the task and the more overwhelming the odds, the better he performed.

Washington's brigade inspector during the Revolution, General Robert Porterfield, once found the commander on his knees in morning devotion. General Alexander Hamilton confirmed that this was Washington's daily habit. "He gave a part of every day (during the war) to private prayer and devotion."

Washington was regarded throughout the colonies as a sincere believer in Christianity—a devout man. He once said: "It is impossible to rightly govern the world without God and the Bible."

George Washington provides an excellent study of the important phenomenon called character. The raw material he inherited was not especially unique, for he was not a genius. He was a typical young man who was aided through life by a desire for accomplishment, by a number

of deep-seated values, and by significant relationships and experiences that provided direction and encouragement.

Washington's character was, in today's terms, a combat multiplier for him, and character can be a significant factor for today's leaders as well.

Character development requires a two-part approach: First, leaders must ensure that they are building their own character to reflect the ideals of the nation and the military profession. And then, these same leaders must influence the development of the character of their subordinates.

Building personal character begins with taking inventory of one's own dominant behavioral tendencies and values. With this in focus the leader should then determine his goals. Finally, he must realize that building character requires hard work, study, and challenging experiences. In short, the leader must develop daily

habits of living and working that continually hone his desirable behavioral tendencies and values.

In developing the character of his subordinates, a leader must begin by being a role model. He and each subordinate must agree on the behavioral tendencies and values that will support the subordinate's professional goals. Then the leader must establish a command climate that supports the development process, providing stressful experiences and consistently rewarding actions that support the development of the desirable ends.

Frederick the Great once said:

A mule who has carried a pack for ten campaigns under Prince Eugene will be no better tactician for it, and it must be confessed, to the disgrace of humanity, that many men grow old in an otherwise respectable profession without making any greater progress than this mule.

To follow the routine of the service, to become occupied with the care of its fodder and lodging, to march when the army marches, camp when it camps, fight when it fights—for the great majority of officers this is what is meant by having served, campaigned, grown gray in the harness. For this reason one sees so many soldiers occupied with trifling matters and rusted by gross ignorance. Instead of soaring audaciously among the clouds,

such men know only how to crawl methodically in the mire. They are never perplexed and will never know the causes of their triumphs and defeats.

Every military organization—as Frederick suggests—has those who soar and those who “crawl methodically in the mire.” Our Army needs leaders of character who can soar audaciously and capitalize on the knowledge, experience, critical judgment, ideal values, and deep

thinking of the true military professional. The end product will be character, the kind that becomes the decisive factor in battle.

Major Robert L. Maginnis, now assigned to the 6th Infantry Division (Light) in Alaska, formerly served as a leadership instructor in the Infantry School. He is a 1973 graduate of the United States Military Academy and has attended the Naval Postgraduate School.

Loyalty

LIEUTENANT COLONEL JAMES W. TOWNSEND

In any unit people talk and think about loyalty. Bosses demand it, for themselves and their organizations. It follows that the soldiers in the trenches, the subordinates, ponder how loyalty is perceived by the boss. But saying “Be loyal” is not a simple, two-word end-of-transmission solution. The various aspects of loyalty are more complex than that.

Loyalty, according to Webster’s New Collegiate Dictionary is “faithful allegiance to a leader, organization, or course.” Army Field Manual 22-100, Military Leadership, classes loyalty as a leadership trait and defines it as “the quality of faithfulness to country, the Army, seniors, subordinates, and peers.” In this sense loyalty transcends rank and applies with equal force to corporals leading crews and teams and to generals leading divisions and corps. It is universal and fundamental.

Loyalty is critical to a proper organizational climate in a unit, and its presence can be felt throughout a unit. Its directions point upward, downward, and laterally. When it works properly in all directions, the leader or commander senses that the unit is cohesive, supportive, and responsive. In turn, the soldiers in the unit feel they are being cared for and are part of

a team organization that truly looks out for its people.

Upward loyalty means being loyal to the boss, to the leader, to the commander. Downward loyalty is the leader’s loyalty to his subordinates, his people, his team. Lateral loyalty is loyalty to adjacent organizations, units, and sections; it has to do with being a team player. (In the eyes of some leaders, downward loyalty is the most important kind.)

In discussing loyalty toward the boss or leader or commander, the key thing to remember is that “the boss is the boss.” He must be followed and obeyed; otherwise, disorganization and disunity set in. The missions and objectives of the unit must be supported. The boss’s problems and worries should be the subordinate’s problems and worries. A unit has to reflect its boss, and people have to be responsive. To think otherwise runs counter to the tradition and history of effective, high performing combat units. The ultimate proof of loyalty upward occurs in battle, where units must respond instantly, without question, in the face of deadly enemy fire.

A significant aspect of loyalty to the boss is the flow of information upward. The boss must be kept informed. This does not mean intruding on his time for

trivial matters. After all, he is a busy man and his time is precious. But he needs, routinely, to know three things—the subordinate unit’s goals, challenges, and scheduled events. As one technique, all three can be presented to the commander (at battalion level and higher) through a published quarterly training program, updated by monthly informal review meetings between commanders.

A training program clearly states the unit’s goals for the coming quarter; it notes any shortfalls or problems or challenges that may be facing the unit; and the calendar serves as a schedule of events. When the boss gets a copy of the training program or is briefed on it, he has a chance to add to or delete from it. In addition, he is informed, and a contract is established between him and the subordinate commander. The boss knows what the subordinate is planning to do and when he is planning to do it.

Upward loyalty sometimes means telling the boss he is wrong, and this requires real moral courage. How does a subordinate leader do this? First, he makes sure he is right. Unless the decision or policy in question is of immediate importance, he should sit on it for a couple of days, making sure he understands it fully and

seeking the counsel of fellow leaders. He questions the staff and the boss himself to make sure he understands the various issues, positions, and facts. When he is reasonably sure of his ground, he goes to the boss and lays out the facts; he states the problem, draws out the lines of disagreement, and explains how the position or decision may hurt the unit or its mission. He makes it clear from the beginning, of course, that he will support the final decision, regardless of what it may be.

Another important point is that if the subordinate wins and the boss's decision or policy is changed, he should be humble. He should make the boss feel good about it. And he should tell his own subordinates and the staff that the decision was changed for the betterment of the unit because of the wisdom of the boss. And indeed it was.

How about loyalty downward—to the soldiers in the trenches? Loyalty to subordinates takes many forms, some of which are easily forgotten. Setting and enforcing high standards is one of the most vital of these aspects. Being loyal to subordinates starts with setting proper standards and maintaining the discipline required to make the unit good. Being easy on people, causing them not to measure up, leads to a bad unit; this is the ultimate in disloyalty to the men, because in battle it can get them killed.

PROPER EXAMPLE

A leader reinforces a sense of loyalty to his subordinates when he sets a proper example for them to follow. Setting the example is a leadership principle that serves to set the tone of a unit. When a leader sets a clear example for his men, he is being loyal to them, because this reduces any frustration and confusion they may feel about standards and conduct. They know that in the absence of orders or instructions they can do as the leader does without fearing a negative reaction or punishment.

Conversely, a leader who sets a poor standard for his men is doing them the ultimate disservice. A poor example causes confusion about a leader's purpose and his standards and serves to unhinge unit morale. A leader who sets the example his men should follow finds himself

leading a more enthusiastic and effective unit.

Training that is geared to the demands of battle also reinforces loyalty in a unit. Properly conducted, such training helps the men because it increases unit effectiveness and reduces battle casualties. When a leader cares for his men, when he is loyal to them, he trains them in a realistic and challenging manner so they are physically, mentally, and psychologically prepared for the rigors of battle. Battle is tough and demanding, and so must be the preparation for it.

It follows that standards, training, and discipline are closely interwoven so that each supports the others. When a leader sets battle-oriented standards and reinforces them with tough, realistic training, he also reinforces the state of discipline and combat readiness in a unit.

REWARD SYSTEM

Part of demonstrating to subordinates is taking care of them through a system of awards, letters, and efficiency reports. Good people should be rewarded and brought to the forefront so that they will be selected for the promotions, assignments, and schooling they deserve.

Properly taking care of the good soldiers also means punishing the bad ones. Rewards, ratings, and promotions must be commensurate with duty performance and potential for positions of increased responsibility. If everybody, including the poor soldiers, gets good ratings, the system becomes corrupt. The soldiers in the unit lose faith in the reward system. Promotion and selection boards lose faith in the ratings of the commander. As a result, the good people suffer. They are less motivated toward high performance, and unit effectiveness is reduced.

Perhaps the best way for a leader to convey a sense of loyalty to his subordinates is simply to express his thanks to them. Too often leaders look for the big piece of pie for their people and forget that it is the little bits that really make a difference in unit morale over the long run. A leader should thank his soldiers when they have done good work just as he would point out mistakes to them if they have done bad work. Such demonstrations of appreciation will bring soldiers closer to

the unit and the leadership chain.

The most critical aspect of loyalty may be trust, because it implies that one person can rely upon the character of another. How does a leader build trust and thereby promote loyalty in his subordinates? First, he should try to identify problems in the unit. Second, he should seek solutions to the problems and should support his subordinates as they work to solve the problems. And third, he should be careful not to overreact to bad news and lash out at subordinates. If he does, he simply will not be told the bad news, but this does not mean the bad news will go away.

The third aspect of loyalty, lateral loyalty, is the type that leaders, section chiefs, and commanders share with their counterparts in adjacent units. It is the essence of helping others, of being team players. It means that whenever it is morally and physically possible, organizations help adjacent organizations by sharing their talents, resources, and skills in a routine, unflinching manner.

Commanders and leaders who understand lateral loyalty do not regard adjacent units as their enemies. They work to make their own units good without fretting about being outdone by a fellow unit commander. Such a commander evaluates his unit in terms of his own standards and fosters friendly competition that is positive, wholesome, and constructive. But when a sister unit is in a jam, he helps out. That is lateral loyalty.

EXTRA DIMENSION

As a final note, loyalty is a powerful leadership trait that adds an extra dimension to unit spirit and preparation for battle. Loyalty is essential to team building. It must flow up, down, and laterally within a unit. But this sense of loyalty does not automatically exist in a unit; it must be developed by the unit's leaders through hard work and dedication to mission and men.

Lieutenant Colonel James W. Townsend is assigned to the 1st Battalion, 15th Infantry in Europe. He previously served in the U.S. Army Infantry School and the 75th Ranger Regiment at Fort Benning. He is a 1969 ROTC graduate of Texas A and M University.

The Company FSO

CAPTAIN CLYDE J. SINCERE III

Since the introduction of the fire support team (FIST) in 1977, both the maneuver and the artillery communities have closely examined the concept. In most cases, this scrutiny has been a positive attempt to improve upon the FIST, but it has also resulted in a few misconceptions. These misconceptions stem primarily from the way a maneuver company commander perceives the role of his FIST as part of his combat team. Too often, this means that fire support is not effectively integrated into a company's scheme of maneuver.

One of these misconceptions holds that the company fire support officer (FSO) has overall responsibility for integrating that fire support. Many company commanders, believing this, take little or no interest in it themselves. Unfortunately, this lack of interest may result from a corresponding lack of professional knowledge about fire support. A brief review of the evolution of the FIST concept may help do away with that misconception.

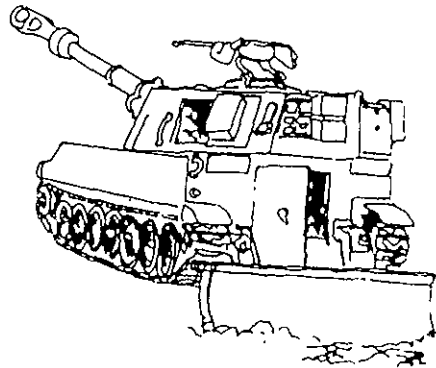
Before World War II, the field artillery did not have forward observers (FOs) with the maneuver elements. Instead, each battery had a reconnaissance officer who established a battery observation post from which he could call fires. Thus, fire support had to be integrated into the scheme of maneuver by the maneuver commander.

During World War II, field artillery batteries provided one FO to each supported maneuver battalion, but he had to move from one company to the next. Again, the maneuver commander routinely performed fire planning and observation.

Between World War II and the Vietnam conflict, there was an attempt to

relieve the company commander of the FO role and put it in the hands of his trained artillery or mortar observers. A three-man FO party was developed to acquire and attack targets. Although this party also did some limited planning of fires in support of maneuver operations, the company commander for the most part still had to do integrated fire planning.

This attention to fire support detracted from the commander's ability to plan, coordinate, and supervise the maneuver operations. Thus, the FIST concept was



developed to relieve the company commander of detailed fire support planning and coordination. It did not, however, relieve him of the responsibility for *orchestrating* all of his available combat power.

This concept also expanded the artillery lieutenant's responsibilities, because he no longer acted as a forward observer but became the coordinator of all company fire support.

Today, the company commander is ultimately responsible for the fire support plan and for its integration into his maneuver operations. He gives his FSO guidance, and the FSO in turn integrates the available fire support—including

mortars, close air support, naval gunfire, and artillery—into the company's scheme of maneuver. As the maneuver plan is executed, the FSO continues to plan and coordinate fires and triggers the plan when and where the commander calls for its execution.

A second misconception arises from the statement that the company commander should keep the FSO in his hip pocket. Many commanders have interpreted this to mean solely in close physical proximity. In fact, even the U.S. Army Field Artillery School has adopted as standard procedure the idea of locating the company FSO in the commander's vehicle.

From my experience, this has resulted in a significant degradation of fire support at the maneuver company level. In many cases it has reduced the FSO to being little more than the commander's personal forward observer. No longer does he have the necessary tools immediately available to him to coordinate and trigger the company fire support plan effectively and quickly.

Other commanders have taken this idea to mean leaving the FSO in his own vehicle but travelling within a few meters of the commander's. This not only causes an obvious signature problem, but it also substantially limits the fire support team's ability to see the battlefield. When moving, commanders wisely use the terrain for survivability, but this often puts them at a disadvantage in trying to see the battlefield clearly.

Commanders need to allow their FSOs to move about the battlefield, staying relatively close but positioning his team where he can best control fires. After all, an FSO does monitor the company command net and stays in close communica-

tion with the commander.

The statement about the commander's hip pocket was intended to point out the fact that a commander must fully and continuously keep his FSO abreast of the situation and his own intent in executing the mission. For his part, the FSO must totally understand the concept of the operation and how the commander envisions integrating fire support—especially during the execution phase.

It is surprising, therefore, that some of the same commanders who insist on having their FIST chiefs right in their "hip pocket" during a battle ignore them during the planning process for that battle. Some commanders may even fail to take their fire support coordinators to hear the battle order. But just as the battalion order is where the planning process begins for a company commander, it should also be where the company FSO conducts his face-to-face coordination with the battalion FSO, who is, essentially, his second boss. Just as the battalion commander gives guidance to his com-

pany commander on his plan, so the battalion FSO briefs the company FSO concerning the battalion's fire support plan. This coordination must take place in order for the battalion FSO to execute the fire support tasks directed by the battalion commander.

The final misconception is that the burden of responsibility for developing the relationship between a company commander and his FSO rests with the FSO. That responsibility belongs to both. In fact, the company commander has the final responsibility. After all, as the leader and trainer of lieutenants, he is just as responsible for teaching the FSO to apply what he has learned in school as for teaching his other young lieutenants to apply their knowledge to the battlefield.

This is not to say that the commander should try to teach his FSO artillery tactics and techniques, but he should teach maneuver tactics and how he, the commander, fights battles. In turn, the FSO should be able to discuss with the com-

mander how fire support systems can be integrated into the planned maneuver. Through this dialogue, the maneuver company commander and the FSO will succeed on the battlefield because they will have achieved the understanding that makes an effective combat team possible.

In today's peacetime Army, because of the limitations on training realism and the obvious safety considerations, it is sometimes difficult for maneuver company commanders to see how well fire support complements their schemes of maneuver. But any commander who fully understands the FIST concept, and who employs his FIST as it was meant to be employed, will be able to integrate fire support effectively into his maneuver operations.

Captain Clyde J. Sincere III is assigned to the U.S. Army Field Artillery School. He previously served as a brigade fire support officer with the 4th Infantry Division. He has also served as a battalion fire support officer. He is a 1977 ROTC graduate of Arizona State University.

COHORT Housing Program

LIEUTENANT ALLEN J. GILL
LIEUTENANT GARY E. LUCK, JR.

A light infantry battalion preparing to receive its COHORT soldiers fresh from one-station unit training (OSUT) faces several challenges. One of these is helping the married soldiers find housing, plan budgets, and integrate their families into the Army community. The ultimate goal is to accomplish this mission as effectively, easily, and quickly as possible.

During March 1986, the 3d Battalion, 14th Infantry, 10th Mountain Division at Fort Benning faced just such a challenge. Through creative thinking, foresight, and hard work, the battalion met this chal-

lenge by developing a comprehensive housing assistance and sponsorship program. This program could also be of great value to other units preparing to receive COHORT soldiers in the future.

First, an informative and detailed housing packet was produced that provided the relevant financial and rental information as a guide for incoming married soldiers who might be searching for off-post housing. In addition, married soldiers were matched with dedicated sponsors in a program designed to help them consider feasible housing alternatives, find neces-

sary points of contact on and off post, and make responsible decisions.

In planning the housing packet, which would go to each soldier while he was still in OSUT, members of the battalion contacted all local apartment complexes, real estate companies, and trailer parks, and checked classified advertisements in local newspapers. Most of the managers and real estate agents were glad to help. Once the information had been collected from these sources, a simple off-post rental and sale packet was constructed. A three-column table was made up listing

the agent/owner/complex (including addresses and telephone numbers); the type of housing being rented or sold (apartment, house, or trailer); and the average monthly rental fee. (Specialists-4 John Franklin and Todd Bryer did the legwork for the housing plan and carried it out.)

The next step was to consider what was actually realistic, financially, for the new soldiers. More important, the soldiers had to be informed, in the simplest terms, what they could or could not afford to do. The battalion did this in two ways.

First, the battalion commander wrote a cover letter to accompany the housing packet, telling the soldiers, "You need to start thinking about where your family is going to live after you graduate and, if you live off-post, how you are going to get to and from work. Look closely at how much money it is going to cost to move your family here. Unfortunately, it is very expensive to live off post. . . you *must* have a place for them to live *before* you make arrangements for them to come here."

AUTHORITY FIGURE

(It is mandatory that a soldier receive such advice from authority figures, not only for his family's and his own well-being but also for the unit's well-being and future combat readiness and effectiveness. The soldier may decide to wait until a later date, or a promotion, before he considers moving his family to his duty station.)

In addition to these comments from the commander, a sample monthly budget was included in each package, including initial expenses such as security, telephone, and utility deposits and downpayment figures on high-expense items. The budget included all normal monthly household expenses at realistic rates for the local area. These figures were subtracted from the pay and allowance figures for married privates first and second class to give them hard figures, on paper, to study and consider before committing themselves to a plan of action.

Although such a budget may seem unimportant or inconsequential to older and more experienced personnel, its impor-

tance to an 18-year-old private, newly married and moving his family for the first time, should not be underestimated. Again, the primary consideration is the welfare of the soldier, his family, and the unit from the first day of his arrival in the unit.

As additional features of the housing packet, a map of the post and surrounding off-post areas was included as well as a list of telephone, utility, and cable television companies with pertinent information, addresses, and telephone numbers. The battalion color coded a map of the local area according to the expense of renting in general areas, crime rates (obtained from local police departments), and distances to place of duty. This en-



abled a soldier to use his housing reference list, compare the information on the list with his highlighted map, and begin searching for housing in an organized manner, with the assistance of his sponsor.

The sponsorship program was the second portion of the battalion's program, and it proved invaluable. Once again, early planning was crucial. Sponsors for the graduating OSUT COHORT soldiers were picked early so they could be prepared for their mission. Selection was based on maturity, dedication to the unit and the Army, marital status, and ability as well as willingness to enter the program. Wherever possible, they were volunteers who were leaders in the soldier's direct chain of command. This also proved to be an important step in the vertical bonding of a COHORT soldier to

his new leaders while fostering commitment to the unit.

The entire chain of command was instructed to allow these sponsors the time they needed to accomplish their mission. After preparing for their job and attending the housing briefing, many of the sponsors needed a great deal of time when the soldiers first arrived. They sometimes had to provide transportation for their soldiers to search for housing and had to be familiar with the area as well as with the entire packet the soldiers had received earlier. They also needed a briefing or a short class on one-on-one counseling, if they were not already experienced in that area.

A sponsor's job was to help his soldier find housing, show him he was cared about while providing a role model, and assist the soldier, in any way possible, in dealing with the problems inherent in moving his family.

If a sponsorship program such as this one is adequately thought out and planned well in advance, a unit will recognize higher morale, decrease the time needed to be combat ready, and meet its duty to care for and provide assistance to the new married soldiers. For the best results, the two aspects of the program, the housing packet and the sponsorship program, must be combined into a unified effort.

In the 3d Battalion, 14th Infantry, the housing program succeeded in helping soldiers make the difficult transition from being geographic bachelors in training to being permanent party members. The unit was able to begin its training mission without unnecessary delay and with maximum benefit to the new soldier and his family, the gaining unit, and the Army family values tradition. It can be a valuable tool to others facing the same challenge in the future.

Copies of the battalion's original housing plan can be obtained from Commander, 3d Battalion, 14th Infantry, ATTN: S-1, Fort Benning, GA 31905-5965.

Lieutenant Allen J. Gill, formerly assigned to the 6th Battalion, 1st Infantry Training Brigade at Fort Benning, is now serving in Korea. He is a 1984 ROTC graduate of the University of Florida.

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Battle Dress SOP

CAPTAIN NOYES B. LIVINGSTON III

Many uniform and load-bearing equipment (LBE) SOPs are apparently written by leaders who spend a lot of time riding around in jeeps. It is unfortunate that these people do not complete a squad live fire or combat assault course first so their SOPs will be more appropriate for the conditions their men must fight in. What is worse, when their soldiers do try to rearrange their equipment to fit their more primitive needs, some other well-intentioned leader will probably stop them because the rearrangement violates the particular unit's SOP.

Most leaders know that SOPs help them check their soldiers' preparedness and the condition of their equipment. The principle behind an inspection according to an SOP is that equipment can be located quickly, and that if it is not where it is supposed to be, it is not there at all. What many infantry leaders forget is that their SOPs and inspections are only parts of the combat readiness process, not products themselves.

The primary purpose of a battle dress SOP, therefore, is to require soldiers to wear their uniforms and equipment so they can efficiently use them under the worst possible combat conditions. The fact that these conditions are short-term or infrequent in peacetime training does not mean that they should not underlie battle dress SOP requirements.

Unfortunately, the way most infantrymen wear their fighting load is dictated by the normal peacetime requirement to sit in Bradley fighting vehicles, M113 armored personnel carriers, and jeeps. Of course, there are also everyday rear area conditions—standing in formation, presenting a neat military appearance, and being able to swing the arms while marching—that influence the wear of equipment.

What would a battle dress SOP look

like if it were drawn up by an infantryman who had done a lot of tactical training and was willing to slouch during the few times he sat down with his load-bearing equipment on? This is probably what he would put in the SOP:

First, the front of the soldier is kept as clear and clean as an aircraft carrier's flight deck, because he will be coming in for a lot of rough landings on it. He will also be crawling across rocks, roots, and deadfall.

Accordingly, a soldier's ammunition pouches are at his sides so that he can continue looking forward while lying in the prone position. This also enables him to reach to his side to open a pouch, pull out an upside-down magazine, and rotate it up into his M16 rifle's magazine well without exposing himself unnecessarily and without losing sight of his sector or target.

POUCHES

Admittedly, side-mounted pouches do get in the way of a soldier's arms if he's standing at attention or marching, and he may not be able to rest his arms on the pouches if they are on his sides. But these shortcomings are logical consequences of tailoring a battle dress SOP to tactical conditions instead of garrison considerations.

All items on the LBE are moved as far back as possible and adjusted to fit closely together while being worn on the body, instead of while lying flat. A rolled-up rainsuit, poncho, or butt pack is worn in the center of the back. Many infantrymen do not wear a butt pack, either because it is not issued or because it gets in the way of sitting down. They should, though, because a butt pack can hold an extra MRE ration, a pair of spare socks

taped up in a ziplock freezer bag, and rain gear that can double as an emergency MOPP suit. A soldier never knows when he can get to his rucksack and survival load, so these lightweight items come in handy when he has to fight using only what he has with him.

A canteen carrier, a canteen cup, and a canteen of water are to the immediate right of the butt pack. A spare canteen and carrier, or an entrenching tool, depending on what buddy team equipment the soldier has been assigned to carry, is on the left rear in the same position. A bayonet and scabbard or a field knife is to his right rear side in front of the canteen. The two ammunition pouches are on the soldier's right and left sides.

Leaders carry a compass and case in front of the left pouch. Soldiers can carry a spare field dressing case containing a lightweight personal hygiene kit made from an old style two-piece telescoping plastic cigarette case to the front of the right pouch. This case holds a jigsaw puzzle assembly consisting of a cut-down toothbrush, a partial tube of toothpaste, a cut-off cartridge razor, a small signal mirror for shaving, a couple of spare razor blades, and a small bar of soap. The cigarette case is taped closed with duct tape.

The load-bearing suspenders and pistol belt are adjusted so that the belt fits loosely around the waist, and most of the weight is carried by the suspenders. The field dressing and case is worn in the fabric loop on the left suspender right side up so it does not accidentally open up while the soldier is crawling. A flashlight is worn by all soldiers on the left suspender to the left of the field dressing to keep it away from the face. The flashlight lens is covered with olive drab duct tape or coated with mud to lessen reflection.

An anodized or dark-painted aluminum

snap link is worn in the right suspender fabric loop. It holds a pair of black leather glove shells hung through the adjusting straps. The glove finger and thumb tips should be cut off so the hands and palms are protected and hidden while allowing normal feeling and finger control. Nothing bulky should be worn on the right suspender because it could interfere with the soldier's ability to rapidly shoulder and fire his M16 rifle.

The protective mask and case are worn slung across the right shoulder, with the case resting on the left side under the arm and the lower strap fastened around the chest. This position is better than on the left hip because the case will not get caught on vehicle hatches and equipment, and the soldier can protect it, or hold it down with his arm, while running. Wearing it under the arm also prevents the case from being snagged during crawling and allows better control while putting on the mask. The protective mask and case are worn beneath the LBE suspenders and pistol belt, not over them, so that the sol-

dier always has it on him.

In spite of a desire to present a good military appearance, the helmet camouflage cover must not be stretched and shrunk down to fit snugly over the helmet. It must be loose enough so that extra material can be pulled out to break up the helmet's outline and permit natural camouflage to be stuck into the holes in the cover.

A common defense of a garrison-oriented battle dress SOP is that it allows soldiers to ride comfortably in vehicles and go about their usual routine training duties with a minimum of inconvenience. After all, it is argued, soldiers can quickly change their equipment around if they actually go into combat. That may be true, but in some cases it may be too late. Generally, individual changes will not be made uniformly, and the unit will quickly lose the benefits of a preplanned and practiced battle dress SOP.

It is better for a leader to train his soldiers the way he believes they will have to fight instead of the way they would

prefer to fight. The distinction is small, but it is important. Training reinforces all behavior, both good and bad. Although soldiers may learn new tasks faster in combat, the habits they enter the fight with are the only ones they have to build from. And since poor behavior gets worse under stress, it is important that the right behavior be reinforced to begin with.

In a similar manner, our battle dress SOPs must conform to the environment we may have to fight in, not the one we usually train in. A good leader will recognize this critical difference and will develop a battle dress SOP that lives up to its name. His soldiers will then be better equipped to fit the ground when they have to hit the dirt for real.

Captain Noyes B. Livingston III is assigned to the 2d Battalion, 141st Infantry, 49th Armored Division, Texas Army National Guard. He served four years as a U.S. Navy enlisted man during the 1960s and is also a former enlisted man in the Texas Army National Guard.

Space Systems

The Ultimate High Ground

MAJOR FREDERICK W. CONARD

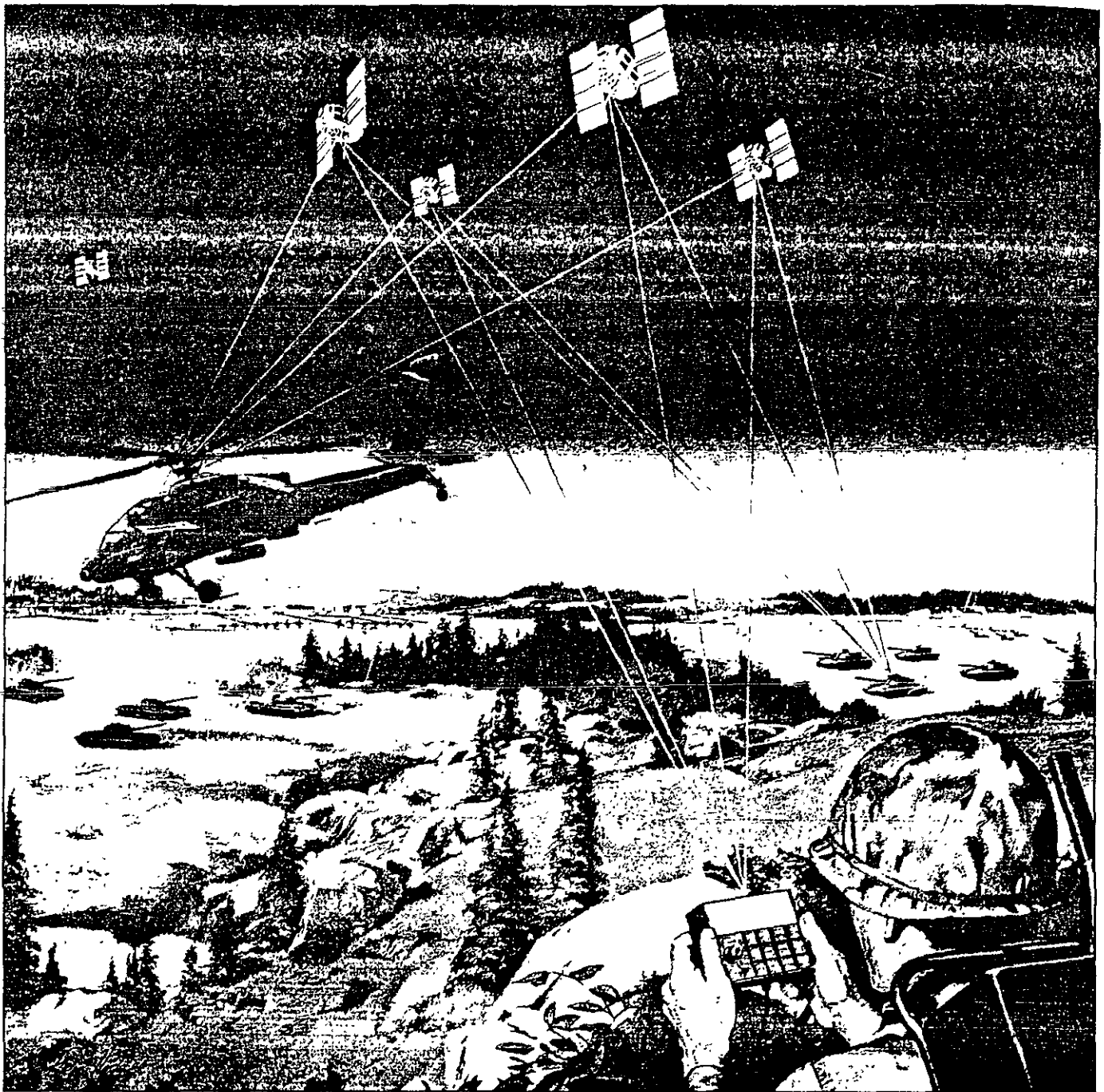
The infantry has always known how important it is to use the high ground. But the ultimate high ground is space, and we need to know how to use that ground, too. We don't have to own it—just borrow it now and then.

Space systems are becoming indispensable to the execution of infantry missions. We already use them for everyday purposes. Aside from the obvious AUTOVON overseas telephone links, divisions and corps use AN/TSC-

85/93As, and RDF units have the portable PSC-3/VSC-7 TACSATs (tactical satellites) and URC-100s, all of which use military or leased communication satellites. We are already controlling the first of a constellation called DSCS III—the Defense Satellite Communication System—which is our most advanced and reliable communication satellite. It significantly improves communication, and its anti-jam features make it highly desirable for any level from corps to

special operations force.

We are all familiar with weather satellite information. The Defense Meteorological Satellite Program (DMSP) provides near real-time weather information to both tactical and strategic force commanders for staff weather office predictions. Unfortunately, sometimes the weather still arrives before the prediction. The Army has therefore defined the need for an Army Environmental Satellite System (AESS)



GPS satellites will provide two- and three-dimensional positioning with incredible accuracy.

constellation of satellites that would provide weather support directly to the tactical commander on demand.

It is clear, then, that systems such as these are not just for the theater army commander. The AESS program is intended to provide environmental information even to the brigade or the battalion tactical operations center. DSCS III provides reliable, jam-resistant communications to division or separate brigade headquarters, as well as to the detached com-

pany defending a critical site.

At an even lower level, space also provides a solution to the problem of position location. We now have flying the first block of NAVSTAR/GPS (Global Positioning System) satellites. The fully operational constellation of 18 satellites, plus spares, will provide two-dimensional and three-dimensional positioning with incredible accuracy for combat and supporting forces; and the GPS receiver can be mounted in aircraft, trucks, tanks, and

ships and can be carried in rucksacks.

We already have a fine navigation aid in the Position Location Reporting System (PLRS). The hybrid PLRS/JTIDS (Joint Tactical Information Distribution System) is of exceptional help in real-time data communication. But for all its benefits, PLRS is a radiating system that gives off 360 degrees of signature; and it relies on network control stations that are as vulnerable on the battlefield as anything

else. GPS, by contrast, is a passive (non-radiating) receiver, always within view of four or more positioning satellites about 11,000 nautical miles out.

Obviously, GPS will help the infantryman in many ways—with close air support, link-up operations, air drop, and logistics delivery. A contact team will no longer have to roam through the night looking for a damaged vehicle or for the first sergeant when he is taking out chow. Field artillery first round hit probability will certainly improve, while mine emplacement and countermeasure operations will become more accurate and safer.

Space support for the man on the ground is not going to happen by magic, though. Infantry units will have to have some space-smart staff people at battalion, brigade, and higher levels who have been in the trenches to interpret for the commander, for example, how his command, control, communications, and intelligence (C³I) is affected if a satellite is lost, or what support is best to request for a new mission.

From the high ground on earth, we can see what's on the other side of the hill. From the high ground of space, we can see what's on the other side of the globe.

Information can be passed to units throughout the world to make possible the early tailoring of units and to allow quick-thinking, flexible leaders the agility they need to avoid the enemy's strengths and attack his weaknesses. With their "speed of light" communications and data relay, global navigation improvement, and timely environmental pictures, space systems will enable us to synchronize and orchestrate all our armed forces toward our singular goal.

The Army is getting smarter in space, and the infantry needs to get smart right along with it. We cannot palm this responsibility off on the Signal, Air Defense Artillery, or Military Intelligence branch to do for us. We are the ultimate users of space support, and we have to make our needs known.

Fortunately, there are ways to accomplish this. The Army Space Institute at Fort Leavenworth is integrating the space-related activities of the Training and Doctrine Command (TRADOC). In addition, the Army Space Agency, recently activated as a component element of the U.S. Space Command in Colorado Springs, is working on improving space systems support for the field army. Inherent in the Agency's mission is pro-

viding information, establishing contacts, and opening channels of communication with the users, such as the infantry.

What is in the future? We can only imagine. But it is not unrealistic to expect such things as multi-spectral imaging satellites that can "see" fallout patterns, or show the size and density (perhaps even the type) of chemical contamination in an area of operations, or determine soil moisture content and therefore vehicle trafficability (for them as well as for us). It is entirely possible to develop a system that can read a vehicle's or a weapon's health and operational status from a bar code, much like those read by scanning devices in the commissary, or can digitally map areas that are otherwise denied to us.

Space is the ultimate high ground. What can it do for the infantry? How far can your imagination go?

Major Frederick W. Conard is an Infantry officer assigned to the U.S. Army Space Agency in Colorado. In addition to various command and staff assignments, he has served as a satellite engineer with the U.S. Air Force and also as a tactical support exercise officer. He is a 1970 graduate of the United States Military Academy.

SWAP SHOP

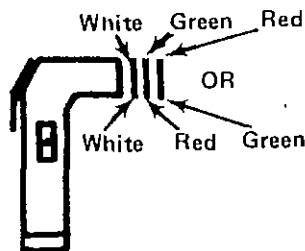


In a combat environment most infantry missions will be conducted during the hours of darkness or limited visibility. With the increased authorization of AN/PVS-5As, just about every soldier will have a set of night observation devices (NODs).

For a few pennies, a standard flashlight and three colored lenses can be turned into an effective signaling tool when used with a set of NODs. This method provides a secure means of signaling that cannot be detected by the naked eye. It has

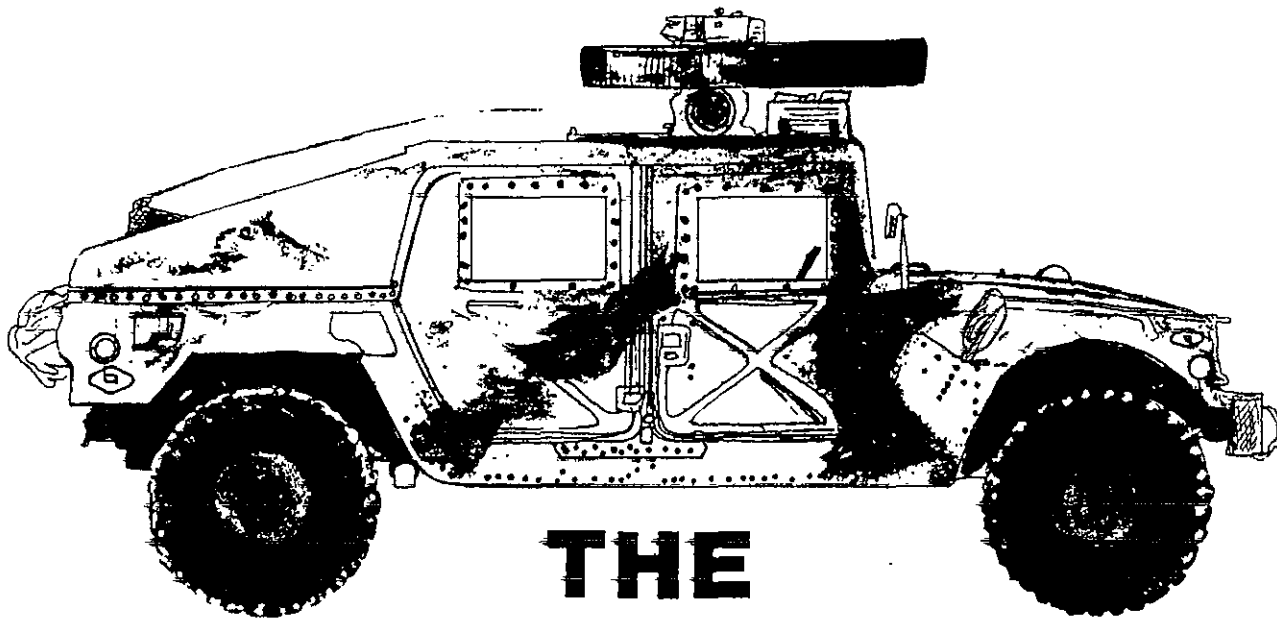
a variety of uses for close-in signaling on the ground or distant signaling from the air. And this signal has the added advantage of being cost effective: A BA-30 costs 18 cents, compared to an infrared chem-light, which costs \$3.51.

To set up the flashlight, place the white lens closest to the bulb, followed by the red lens and then the green, or by the green and then the red (see sketch).



(Submitted by 2LT Robert G. Johnson, Jr., Company B, 2d Battalion, 27th Infantry, Fort Ord, California.)

TOW GUNNERY



THE MOTORIZED APPROACH

LIEUTENANT COLONEL GREGORY C. CAMP

CAPTAIN DAVID H. DWELL

The Army's interim design for a motorized infantry division was approved in 1985. A key portion of that decision was based on the use of TOW-2s mounted on HMMWVs (high-mobility multipurpose wheeled vehicles) as the division's anti-armor weapon until an assault gun could be fielded. Since the proficiency of the TOW crews would determine the success of the division in battle, the 9th Infantry Division (Motorized), organized under this concept, developed a TOW-2 gunnery program roughly analogous to the tank gunnery program. Much of this program can easily be adapted for use by other units as well.

First, the division's leaders acknowledged that the TOW-2's role in a motorized division would be different from its role in other types of units. In the 9th Division the TOW-2 would be the primary divisional tank killer and would not be used as an overwatch or a supporting system. Recognizing the overriding importance of TOW gunnery, therefore, the division outlined a comprehensive training approach.

The gunnery program would be launched with three key components:

- A facility would be established from the division's existing resources to serve as the home of the division master gunner and as a focal point for all gunnery issues.
- TOW-2 gunnery tables would be designed, validated, and implemented, incorporating a gunner skills test (GST) and gunner, crew, section, and platoon firing tables.
- The division master gunner would design a master gun-

ners course to train and certify master gunners down to at least company level.

A World War II barracks was converted into office space, classrooms, and storage for training aids and devices. The division gunnery officer, the division master gunner, and a small staff moved in. This facility, called Gunnery Hall, has become the focal point for TOW training throughout the division, a place where trainers can gather to discuss the latest in gunnery. The classrooms are used for the Master Gunners Course and for unit level training as well. An "all source" training aids register is available that integrates the products of Fort Benning, Fort Belvoir, Fort Knox, and other sources. Gunnery records are maintained, including all live fire reports and the records of all units that shoot the TOW tables.

Each master gunner becomes intimately familiar with the hall during the Master Gunners Course and is encouraged to consider it his second home. The exchange of ideas that results from Gunnery Hall patronage greatly improves the programs of the battalions and in itself justifies the cost in manpower and money.

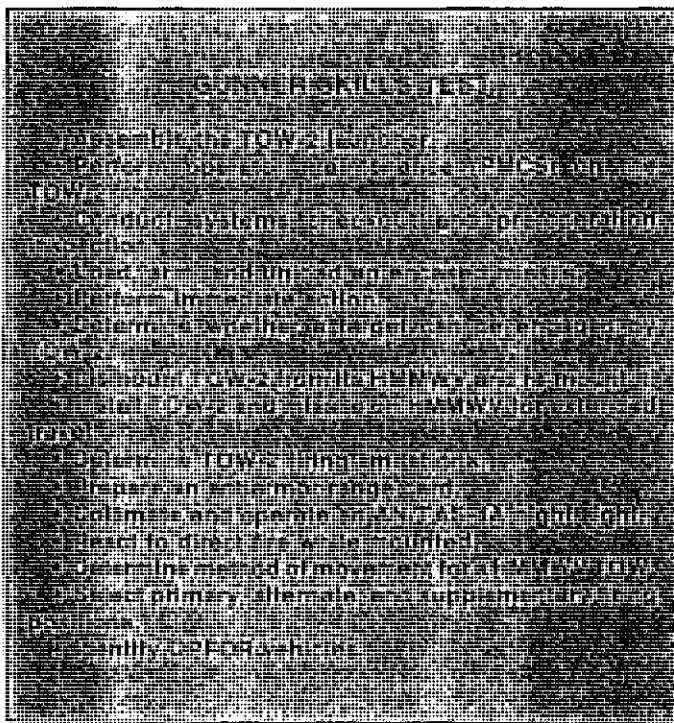
The Master Gunners Course, which is two weeks long, is taught by the division master gunner staff. The program of instruction covers the basics of TOW-2 gunnery instruction, including a review of the Army's training literature. Representatives from the Army Missile Command and the division support command's Main Support Battalion present instruction on the maintenance of the TOW-2 and the M70 and on mainte-

nance training. The division master gunner teaches the execution of the gunnery tables, emphasizing uniformity of standards throughout the division and covering training and target devices in detail.

The course culminates in a field exercise during which the students set up and run one of the gunnery tables. That exercise reinforces all they have been taught about gunnery instruction, targets, and standards. By the end of the course, both the students and the instructors are confident of the new master gunners' ability to take the gunnery program back to their units and ensure quality training.

TABLES

The gunnery tables, which were synthesized from many sources—including FC 7-91, Antiarmor Training in Units; FM 23-34 (Test), TOW Gunnery; and FM 17-12-3, M60 Tank Gunnery—were designed to capture the best features of tank gunnery. The gunner skills test integrates all the Soldier's Manual tasks for the TOW-2, plus four tasks originated by the 9th Division, into a comprehensive hands-on evaluation that each member of the crew must complete with all "GOs" (see box).



Tables 1 and 2 are for gunner practice and qualification, respectively, with the M70 trainer. Table 3 is for crew drill. Tables 4 and 5 are for squad practice and qualification, respectively, using MILES against moving and stationary targets. Table 5 parallels tank Table 8. Tables 6 and 7 are for section practice and qualification. Tables 8 and 9, the capstone tables, are for platoon practice and qualification. Tables 4 through 9 use MILES against an array of moving and pop-up opposing force (OPFOR) targets. Each table has a day phase and

a night phase and incorporates NBC conditions into the tasks.

The cost of a TOW round and the lack of a subcaliber round has forced a heavy reliance on the MILES system. Because of the limited number of TOW-2 MILES units at Fort Lewis compared with the number of TOW-2 systems, MILES operating centers are set up during brigade level gunnery to control the issue, turn-in, and repair of this equipment.

Some innovative training aids have been incorporated into the gunnery tables. The DX-164, a French-built simulator, for example, is used in place of the often balky M70 in Tables 1 and 2. It allows a gunner to simulate firing missiles against real or projected moving targets using his own TOW-2 system in the field. The trainer sees on his instructor console exactly what the gunner sees and can precisely control the target portrayal. In addition, a video tape is made of the squad crew drill during Table 5, and the tape is incorporated into the after-action review.

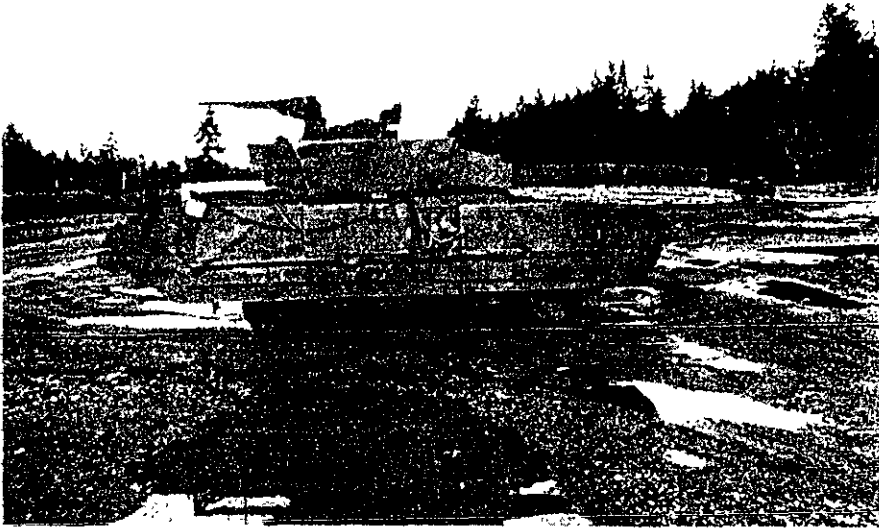
All targets are fitted with MILES receivers. The moving targets are standard cargo HMMWVs with silhouette models (SILMODs) of T-72 tanks mounted on them. These SILMODs, which were based on a suggestion from a soldier in the division, allow a realistic OPFOR to be portrayed with the unit's organic resources. Each model has mounting brackets for the HMMWV, a cutout for the combat vehicle kill indicator of the MILES receiver, and velcro strips for the MILES APC kit laser sensors. The SILMODs are locally produced at the training and audiovisual support center (TASC) using troop labor.

A BRDM kit, developed for the HMMWV armament carriers, can be fitted with the M60 tank MILES kit. The cheap, convenient "shoot back" capability that the tank kit provides strongly reinforces the correct use of terrain, camouflage, and standoff. Stationary targets are portrayed using the tanker's antitank target system (ATTS), a pop-up target that has a full-scale plywood frontal silhouette of a Soviet T-62 tank. The target is rigged with MILES laser belts so that a hit causes a "thumper" to knock the target down. (These training and target devices are covered in detail in the Master Gunners Course.)

The 9th Division's gunnery program has become institutionalized at Fort Lewis. Standard courses with pre-selected target locations and routes have been surveyed at both Fort Lewis and the Yakima Firing Center. The tables have been validated by every battalion in the division, and subtle changes have been made. The division now evaluates each crew in each battalion annually on Table 5, again paralleling tank Table 8. This externally evaluated gunnery table is supported by the division support brigade under the supervision of the division master gunner. Since the intent is to maintain standards and provide high-quality training, the soldiers are retrained and retested until they qualify.

EVALUATION

The evaluation of crews, squads, sections, and platoons is split into two parts: The chain of command is used to evaluate the tactical employment of the system, movement, reporting,



Silhouette model with CVI light in "window."

and camouflage, while master gunners are used as the TOW crew evaluators (TCEs) for fire commands, crew drills, and target hits.

Both groups of evaluators submit written comments and participate in the after-action reviews. The individual commanders are able to emphasize those tactical traits that support their unit goals, and the master gunners insure standardization of the technical tasks throughout the division.

The following example will illustrate how the program works, using Table 5, Task 3—Engage Multiple Targets:

Conditions: Daylight/existing weather; one target hull defilade at 2,500-3,000 meters; second target moving at an oblique angle at 2,500-3,000 meters.

Standards: Determine whether targets can be engaged; determine order of lethality; issue correct fire commands; kill first target within 25 seconds, second target within 70 seconds.

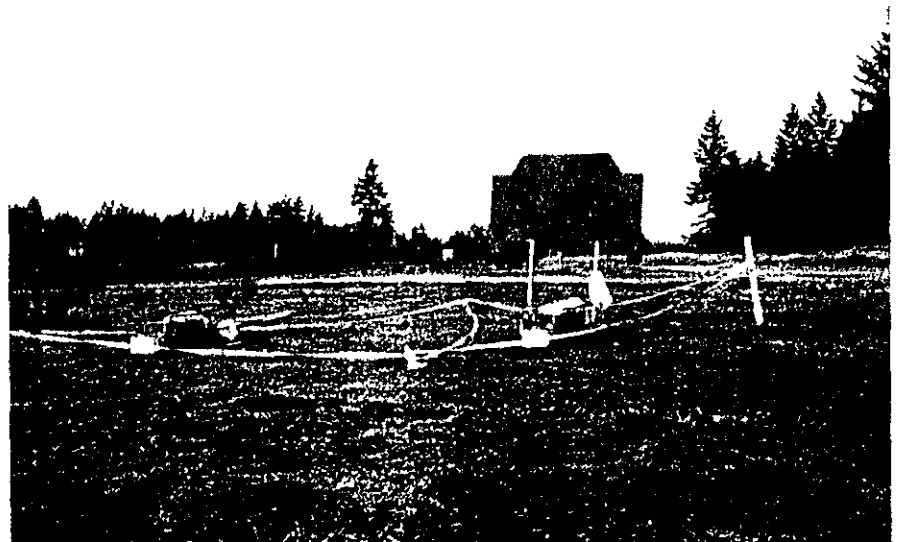
A three-man crew, with the TOW crew evaluator (TCE) in the fourth seat, moves to the grid location given for the

battle position. The squad leader picks the actual firing position on the basis of the available cover and concealment that still allows observation. Once in position, the TCE signals for the targets to appear, and a T-62 frontal view target pops up on an ATTS at 2,500 meters. Simultaneously, a SILMOD T-72 at 2,500 meters appears moving from left to right.

The squad leader detects the targets, determines that they can be engaged and that the stationary target poses the greatest threat to him. He issues a fire command for the gunner to engage that target.

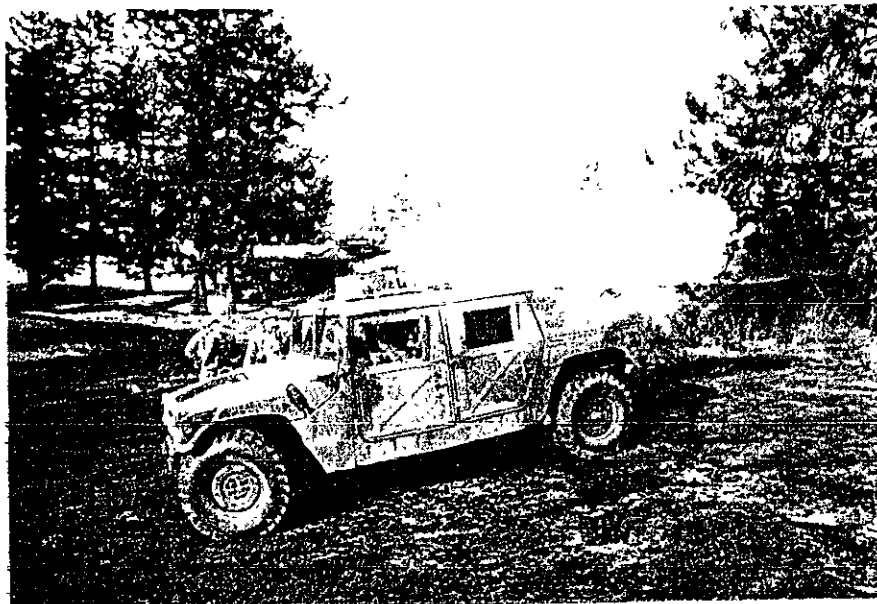
The gunner engages the stationary target with his MILES-equipped TOW-2. If he hits the target, it goes down and a smoke grenade or Hoffman device is detonated to simulate the kill. He then discards the residue of the first round while the loader hands him another one.

The squad leader then issues a fire command for the moving SILMOD T-72. The gunner tracks and then fires at the second target. If he hits the target, a yellow "kill light" (com-



Antitank target system.

Crew during engagement.



bat vehicle kill indicator) blinks continuously and the vehicle immediately stops, popping a smoke grenade to indicate a kill. A full spot report is sent to the platoon leader, and the vehicle immediately moves to its next position so that it will not be picked up and fired on by enemy artillery or other enemy vehicles.

Up to 10 points each can be awarded for the fire command, the crew drill, target lethality determination, and spot reporting, and 50 points for each target that is hit. (This task has a possible maximum score of 140 points. At the end of the day and night phases of Table 5, a total of 880 points are possible. To qualify, a crew must score 608 points.)

The results of this fairly new gunnery program have been impressive. The crews in the division now routinely exceed the published standard of 25 seconds from target detection to destruction.

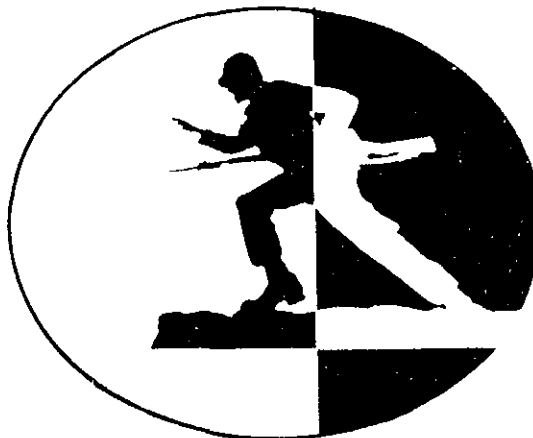
Crew drill has been standardized along with terse fire commands. Additional improvements have been noted in reporting, tactical movement, use of terrain, and camouflage. Most important, the soldiers of the 9th Infantry Division (Motor-

ized) now face an annual challenge of their professional skills, which helps prove to them that they are skilled tank killers. And when the division's TOW crews begin working on Tables 6-9, a corresponding improvement in the section and platoon collective skills is expected.

As we said earlier, much of this program can easily be adapted for use by other units. Copies of the complete program can be obtained from Commander, 9th Infantry Division (Motorized), ATTN: AFVO-OP-G, Fort Lewis, WA 98433-6000.

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Captain David H. Olwell is assigned to 2d Battalion, 1st Infantry, where he has served as company commander and battalion S-3. A 1980 graduate of the United States Military Academy, he has also served as platoon leader and company XO with the 1st Battalion, 509th Infantry.





AOE and the 60mm Mortar

Captain Morton Orlov II

Our Army of Excellence (AOE) has a serious flaw at a critical point—organic fire support in its light infantry companies. The problem is two-fold—the lack of a dedicated fire direction center (FDC) and too few soldiers with which to man the mortar sections of our airborne, air assault, and light infantry divisions. The Army has gone astray in its efforts to properly organize and man these mortar sections, and it appears we have placed strategic mobility requirements and manpower constraints ahead of the combat imperatives of the modern battlefield.

The current mortar section of the units mentioned above has two M224 mortars and is organized into two three-man mortar squads. This organization, which resulted from a 1984 decision made at the highest levels, departs from our past mortar experience through the elimination of the FDC and the men necessary to run one, and the reduction of the mortar squad from five to three men. The absence of a dedicated FDC affects the tactical employment of the section, while the reduction of the mortar squad from five men to three men affects the physical ability of the section to do its job.

There are three reasons for these changes: The number of combat units in the Army has increased, while the Army's overall strength has not; light divisions have a 10,000-man ceiling to meet the strategic mobility requirement of 500 C-141 sorties; and some people believe that the M224 mortar is primarily a direct lay weapon and best used without a dedicated FDC. An in-depth discussion of the AOE force structure requirements and the strategic mobility requirement and concomitant manpower ceiling of the light division are beyond the scope of this article. Nonetheless, each in its own way has influenced the current structure of the mortar section.

The M2 60mm mortar was adopted in 1937 and served in our rifle companies throughout World War II. Historically, the 60mm mortar section was part of a weapons platoon led by a lieutenant. There were three mortar squads of five men each and a section headquarters, with a messenger and a section leader. The platoon headquarters consisted of two messengers, two drivers, a platoon sergeant, and a platoon leader. The platoon had two organic jeeps, one of which was used to transport the mortar section's equipment. Thus, the old organization had 17 men in the mortar section, three mortars, and a vehicle at platoon level to carry its equipment. The M19 mortar replaced the M2 after World War II, and was essentially an improved version of the M2.

The pentomic reorganization of the late 1950s replaced the M19 60mm mortar with the M29 81mm mortar. This change was made because it was felt the 60mm mortar did not have the range to operate on the anticipated "pentomic period" nuclear battlefield. In some units the weapons platoon was replaced by a mortar platoon, and under the ROAD (Reorganization Objective Army Division) reorganization of the early 1960s the 81mm mortar went to Vietnam with our rifle companies. The 81mm provided the needed range but weighed a great deal more than the 60mm and required vehicles to move it any distance. In fact, the Army's experience in Vietnam proved that the 81mm mortar was too heavy for most, if not all, company-level offensive operations. As a result, many line units obtained the old M19 or M2 60mm mortars and used them without an FDC. Although these 60mm mortars proved to be of great value, this was an ad hoc action that was never

officially recognized by any TOE changes.

As a result, after the Vietnam War ended, the Army began to develop the M224 60mm mortar. The idea was to replace the M29 81mm mortar with one that would weigh less than 45 pounds while retaining its range and lethality. The developers felt that a new mortar designed around these criteria would also improve the mortar platoon's mobility.

With the adoption of the AOE concept, the 81mm mortar, the mortar platoon organization, and the associated vehicles were removed from the rifle company. The 81mm mortar was replaced by the M224 60mm mortar, the platoon structure was replaced by a section structure, and the new organization called for no organic vehicles.

The critical difference between the organizations is the lack of a dedicated FDC, which drastically changes the new section's method of employment. Under the former H-edition TOE, the FDC consisted of three men: the section sergeant (chief computer), the fire direction computer, and the radio-telephone operator. Each man had a specific job related to either leading the section or controlling the mortars' fires. The mortars themselves were used mainly for indirect fire.

SMALL SECTION

Ironically, just when the Army had completed developing a new and improved 60mm mortar and its ammunition, it chose to match this improved technology with a structure that could not adequately exploit it—a small section with no dedicated FDC. In reality, the current mortar section organization in our light infantry divisions reflects the Vietnam era practice of using the M19 or M2 for direct lay or direct alignment fire.

The M224 should not be mistaken for the old M19, though, with its limited range and lethality. Because of its increased range and improved lethality, the M224 was meant to be a replacement for the M29 81mm mortar, and thus should be used with a dedicated FDC. If its new capabilities can be tied to the M23 mortar ballistic computer (MBC), there will be a tremendous improvement in the firepower effect, range, and speed of the mortar section's fire. It should be remembered that the M224 is the only weapon a rifle company commander has with which to influence a battle beyond 1,000 meters.

Unfortunately, according to FM 7-70, Light Infantry Platoon/Squad, the mortar section will "in the course of operations, (use) the direct lay and/or direct alignment methods (as) the primary methods of engagement." This change in doctrine seems to mean that the 60mm mortar section will train and fire without an FDC most of the time. Oddly, the J-edition TOE gives the mortar section two M19 plotting boards, and each section is currently receiving two MBCs, but there is no one to devote himself exclusively to the fire direction computer's duties, which are considerable.

Both the section leader and the squad leaders have crew assignments and are in effect "dual-hatted." They must help the crews, lead the section, and in their spare time train themselves to run an FDC. Anyone familiar with the perishable skills of a fire direction computer will realize the training problem presented by this lack of dedicated FDC personnel. Some may argue that the MBC will reduce the demands of the

computer, but the MBC is a fairly complicated piece of equipment that requires training and practice to master. The addition of the computer does not negate the need for a dedicated fire direction computer; it merely provides a means whereby a fire mission can be computed faster.

The only advantage the direct lay and direct alignment methods have over the FDC results from their speed of employment and limited reliance on FM communications. Direct lay involves sighting the mortar directly on a target by using either the sight and bipod or the mortar in the handheld mode without the sight and bipod. Direct lay is a good method of employing the mortars during a movement to contact, but it requires that a target be identified; and because it relies on line-of-sight, the mortar squad is exposed to the enemy's fire.

Direct alignment is similar to direct lay except that the section or squad leader acts as a forward observer. He must remain within sight of the mortar, although this method does allow the mortar to remain in defilade. It reduces the forward observer's flexibility because he is tied to the general vicinity of the gun-target line.

These methods of engagement can seldom take full advantage of the increased range of the M720 HE round (3,489 meters), because in both cases the soldier who identifies the target is either on the mortar or close to it. During periods of limited visibility, too, the mortar will not be effective, and the use of either direct lay or direct alignment will eliminate the possibility of coordinated illumination missions. These methods also forfeit preplanned fires (such as final protective fires), time on target missions, and the ability to shift and mass fires quickly to support distant units. Aside from not fully exploiting the capabilities of the system, both methods of firing are more likely to expose the mortar crews to enemy fire.

OVERLOADING

For nearly 20 years the Army manned the 60mm mortar squad with five men and usually provided them with some sort of organic transportation. Thirty years later, under AOE, the Army has decided to handle the same amount of equipment with only three men and no organic transportation. Given our current manning level, the mortar section will be unable to fully exploit the improved range, lethality, and speed that the new equipment gives it. The amount of weight each soldier will have to carry is the critical factor. In the mortar section of 30 years ago, the ratio of men to mortars was better than 5:1. Today that ratio is 3:1, yet the current mortar has no weight advantage over the mortar used in the 1950s—the old mortar weighed 46.2 pounds, while today's mortar weighs 46.5 pounds. We have ignored this historic reality and, as a result, our current mortar section is overloaded (see Table 1).

The mortarman's load must be of serious concern to a rifle company commander. According to FM 7-70, "Commanders must ensure that soldiers carry no more than 48 pounds when in contact with the enemy or when enemy contact is expected." Historically, the top weight carried by an individual soldier has been deemed to be one-third of his body weight. Today, however, even the mortarman with the lightest load exceeds this recommended weight. Our doctrine acknowledges that the

MORTAR SECTION MINIMUM LOAD CONFIGURATION¹

COMMON ITEMS	WEIGHT
Battle dress uniform, boots	8.20
LBE	1.60
Canteens (2/filled) w/cup and cover	6.60
Poncho	1.70
Gloves	0.30
Socks	0.30
Bayonet w/scabbard	1.30
MRE (1) ²	0.25
Helmet ³	3.10
ALICE pack complete ³	6.30
TOTAL	29.65

DUTY LOAD

Equipment	Item Weight	Qty	Total Weight
Baseplate M7	14.4	2	28.80
Baseplate M8	3.6	2	7.20
Cannon	14.4	2	28.80
Bipod Assembly	15.2	2	30.40
Sight Unit M64 (w/case)	3.5	2	7.00
Bore Sight	.2	1	.20
Aiming Poles	5.0	2	10.00
M19 Plotting Board	1.0	2	2.00
Circular M19 (w/case)	3.0	2	6.00
Mortar Ballistic Computer	8.0	2	16.00
M2 Compass	.5	2	1.00
PRC-77 Radio	24.0	1	24.00
Telephone Set (TA-1/PT)	3.5	2	7.00
M1911 (.45) (35 rounds)	5.5	4	22.00
M16 (180 rounds in 6 mags)	15.0	2	30.00
SUBTOTAL			220.40
Ammunition (HE M720)	3.75	6	22.50
TOTAL			242.90

¹IMLC does not include any additional environmental protection items such as wet or cold weather gear, or any survival gear like NBC equipment.

²FM 7-72, Light Infantry Battalion, states that the soldier carries a basic load of two days of meals and one gallon of water, requiring the soldier to carry an additional five MREs and a 2-quart canteen (1.25 + 4.80) adding 6.05 pounds to his Common Items weight (35.70).

³These items are not included in FM 7-70 as common items; I believe they should be, because they will be required for most combat operations.

Table 1

soldiers in our light infantry divisions will have to carry loads approaching 72 pounds but indicates that this should occur only when our forces are not engaged, or when they are not in danger of being engaged by the enemy. Simple mathematics proves that the mortar section's soldiers routinely will carry more than the recommended loads (Table 2).

This weight does not include environmental protection items or special protective equipment other than the helmet. The soldiers would have no protection from the elements other than their ponchos, and there would be no wire for the TA-1s, no extra batteries, and only one meal per day per man. There is no realistic way of meeting the field manual's recommended weight limits without reducing the capability of the section; 70.1 pounds represents about the least weight a mortarman will have to carry when fighting the enemy.

The M224 system can be tailored to reduce its mission weight, but for every item of equipment not carried there is a corresponding reduction in capability. The easiest modification is

to substitute the M8 baseplate, which weighs only 3.6 pounds, for the M7 baseplate, which weighs 14.4 pounds. But by doing so, the section loses the 360-degree capability of the mortar, and if the mortar must be fired from soft ground it will eventually bury itself. Then if a commander is willing to give up his indirect fire capability, the load can be cut by another 18 pounds if the section leaves the FDC equipment behind. With this added to the baseplate savings, the section will be 46 pounds lighter.

Another, more drastic, option is to use the two mortars in the handheld mode only; this option requires the least amount of equipment—only two cannons and their M8 baseplates. The total weight reduction would amount to 108.4 pounds. The cost of achieving this weight reduction would be considerable: a complete loss of the mortar's indirect fire capability; a limited maximum range (1,342 meters); and the use of the mortars only in the direct lay mode.

The most glaring deficiency as a result of these load limitations is the amount of ammunition that can be carried. The common response to the problem of ammunition supply and resupply is to state that the rest of the company will carry the balance of the section's mortar rounds. In the days before AOE this may have been a realistic argument, even if units in the

field seldom practiced it. In today's rifle company, with its two-man machinegun teams, SAW gunners, and nine-man squads, there are no extra backs to rely on. If all the riflemen, including team leaders, carried one 60mm round, a company would have a basic load of 42 rounds, 6 in the mortar section and 36 carried by the company, resulting in a paltry 21 rounds per gun. In comparison, the 1955 mortar section had a basic load of 72 rounds per weapon based on a three-mortar section. The company carried half the load (108 rounds), while the battalion trains carried the remaining 108 rounds. There is no easy solution to the ammunition issue, but our current section organization hurts more than it helps.

Because of undermanning, the members of the section are more likely to be physically exhausted and prone to error when entering combat. If the mortar section is not where it needs to be when there is a call for fire, it will have failed in its mission. If it arrives at its position with men or equipment missing, its capabilities will be seriously diminished. The overloading of the mortar section will not only hurt the section, but could adversely affect its company's ability to accomplish its mission.

HANDLING TASKS

The other implication of insufficient manpower in the mortar section is the squad's inability to handle all the tasks of gunnery and fire direction control. Under the mortar section's current organization, if the FDC is to be used, two soldiers will have to man each M224 mortar. During training, a good two-man crew can perform as well as a three-man crew on most, if not all, gunnery tasks. But training is not combat, and when fear, fatigue, and a real fight are added, the results could be less than adequate.

Meanwhile, the section leader and the squad leaders will have to handle the fire direction control duties. At least two men are necessary to monitor the radio, calculate and enter the firing data, and issue the fire commands. Furthermore, the section will not be able to provide itself with even rudimentary security and, during sustained operations, the crew members will quickly become ineffective, since there will be no one to relieve them so they can get adequate rest.

The section cannot afford to lose one man, because with six men and six jobs, each man is absolutely necessary. Any loss will reduce the effectiveness of its fire by increasing the amount of time needed to conduct each fire mission. The loss will also affect the section's ability to move its equipment, as well as any ammunition. This lack of manpower reduces the value of the section. In fact, if it suffered only a few losses, the section would become a liability to its company rather than an asset.

There are a number of possible solutions to the present problem. The mortar section can be removed from the company, but this would reduce the company's firepower and eliminate the longest range weapon in the unit. It would also take away the company's only organic indirect fire support. This solution could be hazardous in the artillery-poor environment of a light infantry division. Adding vehicles to the company structure would increase the unit's battlefield mobility but would also complicate its strategic mobility while running counter to our current doctrine.

		SECTION LEADER	
Common Items			29.65
Duty Load	M16 (180 rounds in 6 mags)		15.00
	PRC-77 Radio		24.00
	Binocular M19 (w/case)		3.00
	TOTAL		71.65
		SQUAD LEADER	
Common Items			29.65
Duty Load	M16 (180 rounds in 6 mags)		15.00
	M23 MBC		8.00
	Binocular M19 (w/case)		3.00
	Bore Sight		.20
	TA-1		3.50
	Cleaning Equipment		2.00
	Ammunition (2 rds HE M720)		7.50
	TOTAL		68.85
		GUNNER¹	
Common Items			29.65
Duty Load	M1911 (.45) (35 rounds)		5.50
	Entrenching Tool (w/carrier)		2.52
	Cannon		14.40
	Baseplate M8		3.60
	Aiming Poles		5.00
	Sight Unit M64 (w/case)		3.50
	M2 Compass		0.50
	Ammunition (1 rd HE M720)		3.75
	TOTAL		68.42
		AMMUNITION BEARER¹	
Common Items			29.65
Duty Load	M1911 (.45) (35 rounds)		5.50
	Blipod		15.20
	Baseplate M7		14.40
	Ammunition (1 rd HE M720)		3.75
	TOTAL		68.50
¹ The remaining gunner and ammunition bearer will carry identical loads. These loads do not include the second plotting board, MBC, or TA-1.			

Table 2

ACTIVE ARMY LIGHT INFANTRY BATTALIONS		
UNIT	LOCATION	NUMBER OF BATTALIONS
82d	Ft Bragg	10 ¹
101st	Ft Campbell	9
7th	Ft Ord	9
25th	Hawaii	9
10th	Ft Benning	2
10th	Ft Drum	3
6th	Alaska	3
		<u>45</u>

¹Includes Airborne battalion in Italy.

Table 3

Another option is to keep the current equipment and manning levels but change our doctrine of employment. Realizing that this doctrine has already been changed to require direct lay or direct alignment only, we could go even further along this line and drop the secondary mission of FDC-directed fires. Specifically, the M224 would remain in a company but would be used only in the handheld role. Its mission weight would then drop to 18.5 pounds per mortar. This option would reduce the weight of the system, but would also reduce its effectiveness.

A similar solution might be to change the mortar section's equipment. There are smaller, lighter mortars available that six men can easily handle. For example, the British 51mm mortar weighs only 13.6 pounds, requires only one man to fire, and has an 800-meter range. The British use this mortar primarily for illumination at the platoon level, but it is also capable of firing HE and smoke. The Israelis have the Soltam Commando, which is a 60mm mortar that weighs 13.2 pounds and has a range of 900 meters. In both cases, the whole mortar can be conveniently carried and fired by one man.

If we adopted this option, we would not have to maintain 11C infantrymen in the mortar section; we could convert those positions to 11B infantrymen. The trade-off would be in range and indirect fire capability, but the section would be more evenly matched in terms of men to mortars.

IDEAL SOLUTION

The ideal solution, however, would be to increase the strength of the mortar section and put it back in a platoon under the control of a platoon leader. There is no need to go back to the days of 17-man sections, but an increase to 11 men is justifiable and desirable. Four men on each gun would provide depth and a better ability to distribute the weight and the tasks of the mortar crew. A three-man section headquarters would add greater depth in the fire direction control process and would allow the

section leader to effectively carry out his reconnaissance and firing site selection duties without hurting the capabilities of the section if it was currently firing.

A similar structure has proven itself in the Ranger battalions, which have eight-man mortar sections and habitually have the weapons platoon leader and his RTO accompanying the mortars. This, in effect, would raise the section's strength to 10 men. Not only would this structure improve the training prospects of the section in peacetime, most important, it would provide the rifle companies with a mortar organization that could truly support them and successfully meet the heavy demands of combat.

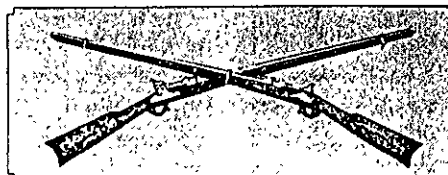
Realizing that the Army today must prepare for war in a resource-restricted environment, the ideal solution may be too costly in terms of manpower. Nevertheless, the current mortar section requires at least a dedicated combined headquarters and FDC. This is necessary if we are to bring the load size down to a realistic level within the section, and if we are to take full advantage of the M224 mortar, which was expressly designed for use in the indirect fire mode.

The creation of a combined headquarters and FDC would require two more men in the mortar section. The two men (privates) would be assigned as assistant gunners, relieving the section leader and squad leaders of their mortar crew duties. The section leader would then be free to lead the section and carry the radio, while the squad leaders would change names and become the dedicated FDC. They would be able to focus their energies on perfecting the use of the new and untried MBC, while remaining proficient on the M19 plotting board, which is the section's backup. This restructuring would greatly increase the mortar section's capacity to meet its wartime mission and would increase the combat power of the light infantry rifle company.

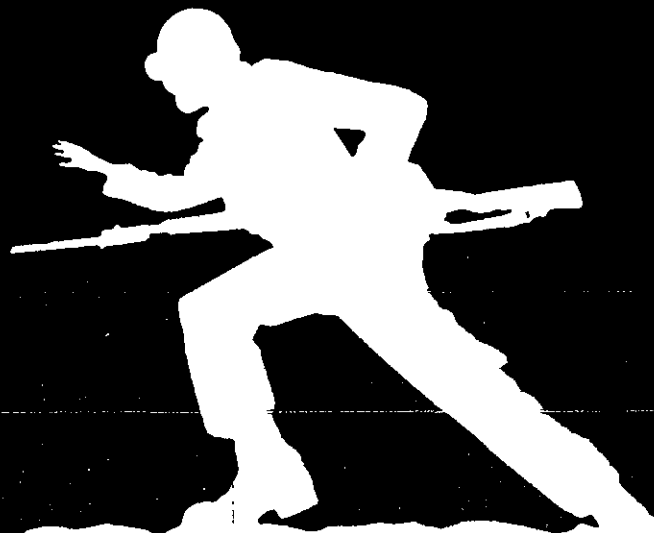
There are 45 light infantry battalions (not including the Ranger battalions) in the active Army today (see Table 3). This means that we have 135 mortar sections that are overloaded, insufficiently manned, and improperly organized to handle the fire support requirements of combat. Strengthening our mortar sections with an increase of two men per mortar section would require an additional 270 men, an increase of 54 spaces in a division's size. It would yield dramatic results.

The Army of Excellence has gone to great lengths to improve the fighting ability of its light infantryman. But that infantryman needs the responsive, indirect fires of his 60mm mortar if he is going to win in a close combat situation. The current mortar section must be changed to meet his needs.

Captain Morton Orlov II recently completed the Infantry Officer Advanced Course and is assigned to the 5th Infantry Division. He previously served with the 82d Airborne Division and with the 3d Battalion, 75th Ranger Regiment.



Infantry in Action



CHARGE!

Lieutenant Colonel Fred L. Walker, Jr.

We scoff at the mob rushes of the Japanese and deride the mass assaults of the Germans, with their wildly spraying sub-machineguns.* Time and again our Doughboys have mowed down these masses of men by the hundreds. Yet, is our conception of the classic bayonet charge any great improvement?

What really does happen when the Infantry rifleman comes face to face with his foe and closes in for the kill? Does anyone who has been in battle recently believe that the fight ends with a charge, a loud "hurrah," and cold steel in the gizzard? This might have been true in the days of single-shot weapons and massed formations, but with the coming of the semi-automatic rifle, and with the vastly increased number of automatic weapons in the squad and platoon, the classic bayonet charge must soon take its place in history beside the cavalry charge.

How, then, does the assault really take place?

Speaking generally, the commander of any unit, regardless of size, goes through the following steps in order to deliver a coordinated assault with his outfit. He first maneuvers his troops as close to the enemy position as possible under the cover of smoke, darkness, natural cover and concealment, and supporting fires of other units.

Next he deploys his rifle units and organic weapons in preparation to support their own further advance by fire and movement.

He must, of course, coordinate the time that his rifle units are to continue movement with the time that his own supporting weapons are to open fire and with the time that supporting fires of other units are to lift.

Next, on command, signal, or time schedule, he starts a simultaneous, coordinated movement of all subordinate units toward the objective. Having brought his troops into close con-

tact with the enemy; having assured a simultaneous effort by all assaulting units; and having prescribed a point of departure and an objective for each unit, the commander has done about all he can do to insure success. Thereafter, he will have little control of his assaulting rifle units until the attack is over and reorganization is completed. His only further influence of the action is by shifting the supporting fire, by personally accompanying and supervising one of his subordinate units, and by his personal example and encouragement.

After the battalion commander has launched his companies in the assault, each of the company commanders may still be able to retain control of his company, moving it to an intermediate objective farther forward under cover of artillery fire, heavy weapons fire, smoke, and natural concealment. During this "close approach" phase, it is desirable for each commander to retain control of his unit as long as possible, for it can be plainly seen that one uncontrolled squad, straying some distance in advance of the formation, might prematurely mask the supporting fires which are protecting the advance of the entire company.

Thus the company commander retains control of his platoons as long as possible before launching the coordinated company assault on the final objective. He can keep this control until the company reaches the last natural covered position.

In the same way, after the company assault is launched, the platoon leader retains control of the movement of his squads as long as possible. The platoon phase of movement will usually start within a few hundred yards of the enemy position, and will often have to be made across ground entirely exposed to enemy observation. Therefore the platoon will usually advance to its assault position covered only by supporting artillery, mortar and machinegun fire, and smoke. The closest point to the enemy which the platoon can reach before launching squads into the final assault will be the point at which supporting fires

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First, the commander maneuvers his troops as close to the enemy position as possible under the cover of smoke, darkness, natural cover and concealment, and supporting fires of other units.

of other units are masked. This may be any distance from 75 to 300 yards, depending upon the terrain, the type of supporting fires, and the mental conditioning of the troops.

Having arrived at this point, the platoon leader makes sure that his squads are ready to move forward together before he launches the assault. Some men and groups will arrive at the assault position before others. Some casualties have usually occurred, and a key man here and there may have to be replaced within the squads. An enemy machinegun may be covering the ground immediately in front of the platoon, necessitating a delay until it can be knocked out with a mortar, bazooka, or grenade, or until it can be neutralized with rifle fire and smoke. A wire obstacle may have to be cut. The men may be momentarily winded from crawling and rushing forward. At any rate, the platoon leader notes all these things, takes the necessary action to overcome the various obstacles, and selects the best psychological moment when all squads are ready to launch the platoon assault.

Before lifting supporting fires, the platoon leader must increase the rate of fire of his own weapons in order to maintain fire superiority. He commands or signals to the squad leaders and men near him to fire faster. He may emphasize his order by firing several rounds rapidly himself. All other members of the platoon should promptly take up the rapid rate of fire in order to completely neutralize the enemy to the front. At this time rifle grenadiers and rocket-launcher teams should *blind* and neutralize located enemy automatic weapons to the flanks by firing smoke grenades at them. Supporting units, hearing the increase of fire, must also fire faster in order to

completely neutralize dangerous areas to the flanks of the assaulting platoon.

Thus, if everybody has done his job properly and at the correct time, conditions should now be ideal for the "kill." No one will sense this more clearly than the leading riflemen, and the beneficial morale effect of this overwhelming mass of supporting fire upon our own riflemen is at least as important as its opposite effect on the enemy.

Now let us think, for a moment, in terms of economy of ammunition. This intense volume of fire cannot be maintained for long and is limited by the amount the troops can carry when they move forward in the attack. It cannot be maintained at all if we expand our ammunition prematurely at a time when it is not absolutely essential. That is why each commander moves as close to the enemy as possible before resorting to fire of his own organic weapons for support.

Rifle squads and platoons advance without firing until they are forced by effective hostile small-arms fire to advance by fire and movement; or until they arrive within effective small-arms range (200-400 yards) of the enemy, and are exposed to enemy observation. Thereafter, the rate of fire should be moderate—just enough to support the advance—and the advance must be as rapid as possible to reduce the time of supporting fires to a minimum. As a general rule, rifles, automatic weapons, grenadiers, and bazooka teams, within the platoon, do not engage any target during the earlier phases of the attack, which can be engaged by other supporting weapons.

The platoon must arrive, then, in the final assault position with the maximum of ammunition of all types still in the hands

of the troops. Furthermore, once the rate of fire is increased to the maximum rate, the assault must be completed as rapidly as possible before too much ammunition is expended.

Bayonets will be fixed for the final assault—yes. But when we think of killing, we must think of bullets fired at point-blank range. The bayonet is the final threat and the last reserve. It may be used in emergency, but precious few enemy soldiers survive long enough to be killed with a bayonet.

The platoon leader, then, at the crucial moment shifts supporting fires from in front of the platoon and signals his squads to move forward in the assault. Fires may be shifted on signal (colored smoke, rocket, tracers fired vertically), on time schedule (previously arranged with supporting units), upon increasing the rate of fire by the platoon (which can be heard by supporting units), upon passing a predesignated spot on the ground, or they may be shifted at the discretion of supporting weapon observers whenever they see that fire is masked by the advance of leading riflemen. A signal should be specified only as an emergency means, and one or more of the alternate methods above should always be provided for.

There are several ways in which the platoon leader may start the forward movement of the squads. Again, he may use a signal—but it cannot be relied upon and is an emergency means only. If he can get the attention of his squad leaders, he will simply signal, or command *forward*. If he cannot, he may be able to relay the order down the line by word of mouth to the squad leaders. If the enemy is obviously wavering, is weak, and is making no effort to fire back, squads or groups of individuals will probably start forward without waiting for orders. In an emergency, if squad leaders cannot be contacted, the platoon leader will take personal charge of individuals nearest him and lead them forward, thus showing the rest of the platoon, by personal example, what he wants them to do.

The platoon assault must not be thought of as a conventional mob rush where an entire platoon stampedes forward at a run, shooting and yelling, with gleaming bayonets. That is exactly what we must avoid, as the Japanese and Germans have learned to their sorrow time and again.

No. The movement is still under control except that the initiative had been decentralized to squads and squad leaders. Squad leaders move their squads into the objective aggressively, regardless of the progress of other squads to the right and left. But they move their squads through the enemy position by small group rushes, with every move covered by fire of the rest of the squad and platoon. The more enemy resistance encountered, the shorter the rushes, and the smaller the groups. If resistance is very heavy or if there are serious natural and artificial obstacles, groups have to crawl forward instead of walking or running. Squad leaders direct and control the movement of their men as closely as possible. The platoon leader joins in the assault at whatever point he can best influence the action of his squads. He takes charge of groups and individuals whenever necessary and directs or leads them forward onto the objective.

As a matter of SOP training, automatic-rifle teams and rifle grenadiers of a squad on an exposed flank should observe constantly to the flank and engage promptly any enemy weapons which appear there. As individuals or small groups

of assaulting riflemen get close enough to see individual enemy soldiers, they finish them off with point-blank rifle fire or grenades. When enemy emplacements become visible, their firing ports and openings are kept under point-blank fire until someone gets close enough to shoot or throw a grenade into the position. On close approach additional fragmentation and incendiary grenades are dropped in for good measure. All buildings, caves, or thickets are given the same treatment. Enemy personnel that do not surrender found hiding in holes are promptly shot or bayoneted. Leading riflemen arriving close to the enemy position may fire from the hip for additional fire coverage as they make each forward rush.

During the closing phase of the assault, when the enemy are surrendering and resistance is at an end, and when enemy observation from adjacent areas is blanketed by smoke or reduced visibility, an entire unit may rise and move forward at a walk or run in order to occupy its objective fast, mop up, and reorganize. But this is exceptional. However, troops must be trained to avoid rushes of over thirty to forty yards, when close to the enemy, unless specifically ordered otherwise by the unit leader. When enemy fire stops, for any reason, the instinctive tendency of civilized man is to stop shooting, to get up and look around, and if nothing happens, to start moving forward.

If all members of a squad or platoon do this at the same time, there is nothing to prevent hostile machinegunners from rising up and reopening fire, with tragic results for our side. *This may sound ridiculous, but it is exactly what has happened and continues to happen to green units in combat, time and again.* The platoon and squad leader must control the advance as closely as possible in order to prevent just such an occurrence.

So far, we have pictured the situation in which separate battalion, company, and platoon assaults are launched at different times and locations. Let us consider, briefly, the situation where all three are simultaneous. Under cover of fog, smoke, darkness, or woods, it is sometimes possible to deploy an entire company or battalion secretly within a hundred yards or so of a known enemy position. This might occur when another unit is in close contact with the enemy and is covering the deployment. Under such circumstances, the platoon and company assault and possibly the battalion assault are simultaneous. The final assault might then be launched on order or signal of the company or battalion commander. Here, the platoon leader's job is much simpler, but the final platoon assault is still delivered in the same manner. If the flanks are covered by reduced visibility and by the presence of friendly troops the entire unit might move forward as a group, using assault fire. But this should be tried only when enemy resistance is known to be weak, or when complete surprise is assured.

After the first few bitter experiences, our soldiers in combat learn to do these things as a matter of habit, but the price of learning is often measured in blood. In combat, however, as in rifle marksmanship, experts are made or lost in preliminary instruction, not during record firing. There is no reason why we cannot overcome in training the preconceived idea of the classic bayonet charge and produce expert fighters before we play the game for keeps.

TRAINING NOTES



Resupplying A Light Force

CAPTAIN LEO A. BROOKS, JR.

A light infantry battalion waits in the night for an aerial resupply. A C-130 aircraft flies overhead and drops four resupply bundles to the unit; bundle recovery teams de-rig the resupply and pull it to the woodline. There is confusion as to which bundle belongs to which company. The S-4 has configured the resupply of rations to last for three days, multiplying each unit's field strength by nine (three rations per day per man), and the corresponding number of cases of MREs (meals, ready to eat) are in each bundle. He has figured a resupply of batteries in the same manner—the number of radios for each unit multiplied by the number of days before the next resupply.

But the battalion has a serious problem—what to do with all the empty MRE cases, ammunition cans, cargo parachutes, and packing materials now on the battlefield. How are the soldiers going to fit nine more MREs into their rucksacks when they have yet to consume their initial issue? This light infantry battalion is no longer light.

One of the key reasons for the establishment of light infantry forces (light infantry divisions and Ranger battalions) was the need to move units quickly to an area of operation with a minimum number of aircraft. To accomplish this goal, the MTOEs of these organizations were made austere in terms of support personnel and vehicles. The obvious problem with such organizations is their inability to support themselves.

A Ranger battalion, for example, has

the most austere MTOE of any like-size element. Only two quarter-ton trucks are assigned to the battalion—the commander's and the S-3's. The S-4 section is small, with a total of 24 Rangers. The 12-man support platoon consists of a 10-man food service section, a one-man ammunition section, and a support platoon leader (SPL); other key positions are the S-4, the assistant S-4, the property book officer, and the S-4 NCO in charge. Further, because of the long lines of communication inherent in Ranger operations, Ranger battalions cannot operate with combat trains and field trains as such. Therefore, the first key to success in resupplying the force is the positioning of key logistical personnel.

ANTICIPATE NEEDS

It is the duty of the S-4 to take care of all logistical burdens that might affect the unit during combat operations. He cannot do this job effectively if he is merely listening to the radio back in the field trains. He must feel what the soldiers feel so that he can anticipate unit requirements and be of greater service to the organization.

The 1st Battalion, 75th Ranger Regiment has developed a workable system for resupply. First, it operates with two tactical operation centers (TOCs). TOC I conducts operational duties in the field and contains the commander and the S-3; the assistant S-4, located in TOC I,

monitors logistical requirements but does not act on them. TOC II contains the battalion XO and the S-4; it monitors all operational traffic but acts on administrative and logistical requirements. TOC II moves with the trail company during a battalion movement and sets up at a point from which it can communicate with all the maneuver elements during their operations.

The main idea behind the two-TOC system is to allow the commander and the S-3 to concentrate on the tactical aspects of the operation. TOC II, the administrative/logistical TOC, is like a combat train, except that the distances between it and the fighting elements are shorter. TOC II has no other logistical personnel.

The next key support position is the support platoon leader. Assisted by the S-4 NCOIC, the entire S-4 section, and the company supply sergeants, the SPL provides the supplies to be sent forward to the units in the field. His location is in the battalion logistical operations center (BLOC), which in most cases is at a distance that requires aircraft support for resupply and satellite communications or high frequency radios for communications. This corresponds to a regular unit's field trains.

Some might disagree with the positioning of the S-4 and the support platoon leader, arguing that the S-4 should be in the field trains or the logistical operations center (LOC) because of his greater experience and technical knowledge. This is faulty logic under normal conditions.

The SPL has the assistance of the S-4 NCOIC, the companies' supply sergeants, and the regimental LOC (or brigade trains in another type of unit), which is located with the BLOC. Each of these people is dedicated to supporting the troops in the field. Ultimately, METT-T will control where the key logisticians go. If the regimental LOC is not located with the BLOC, then the S-4 will have to be there to coordinate supplies and aircraft and fight for his unit's priority in the resupply system.

When the S-4 is positioned forward, his field responsibilities take on a much greater tactical sense. These responsibilities include providing pertinent information to the S-3 representative in TOC II; issuing a fragmentary order concerning a resupply mission; acting as the ground forces commander for the tactical employment of all resupply and security parties conducting a battalion level resupply mission; coordinating fire support with the air liaison officer and the fire support officer for the resupply location; conducting pathfinder operations for all rotary-wing battalion level resupply operations; supervising the collection and disposition of air items during aerial resupply missions; and collecting resupply requests from the companies and passing them to the BLOC (field trains).

The S-4 and his logistical team must provide for real-time resupply needs, as opposed to a prearranged amount of supplies dropped on a unit in the field. The S-4 in TOC II sets a no-later-than time at which company XOs submit their routine daily logistical status reports (LOGSTATS). These reports are best sent in the form of simple operational schedules, which minimize the chances for error due to misinterpretation and also shorten transmission time.

Another key asset is the Digital Message Device Group (DMDG), the primary means of communication for the battalion's reports. Of course, the S-4 must keep abreast of the tactical operation by monitoring the battalion command net so he can collect LOGSTATS from the companies early if he sees that they will be unable to meet the set submission time. Once the S-4 collects the reports, he transmits them to the support platoon leader in the BLOC (field trains)



via DMDG. The SPL gives the unit requests to the unit supply sergeants who are co-located with him in the BLOC, coordinates with the regimental (brigade) S-4 for all classes of resupply, and issues everything to the unit supply personnel, who then pack it for resupply—whether by air drop, free fall, or air landing. The support platoon leader sends reports of the resupply quantities and the method of resupply to be used, once they are confirmed, back to the S-4 in TOC II, who then notifies the company XOs. This prevents any confusion when the resupply arrives as to what each unit is supposed to receive.

In his preparations, the S-4 configures the needed items into platoon-size packages whenever possible and then packs those items into duffle bags marked with a color code and the unit's name in spray paint. (These bags can be obtained from a property disposal office.) Duffle bags containing Class V items are marked with red tape on the handle in addition to the regular markings.

Every attempt is made to reduce battlefield litter—MREs are taken out of their cases and placed in the bag loose; ammunition, when possible, is taken out of its containers and placed in sandbags and marked. The duffle bags are placed inside A-21 bags for container delivery system (CDS) resupply or attached directly to a parachute for helicopter resupply.

The company XO is the leader of the company resupply party. This arrangement does two important things: First, it places a leader who deals with logistics at the resupply location to sort out any problems during the resupply mission. Second, it allows the S-4 to have face-to-face contact with the company logisticians to find out their logistical problems.

Each company resupply party includes a security element, which does exactly

what its name implies—it provides security during the conduct of the resupply mission and during the movement back to the company area. The company resupply parties meet the S-4 at a point near the resupply location; there, the S-4 issues instructions for securing the area and sets the order in which the units will be resupplied. Even though the resupply location is secured, only one company's recovery team is allowed on the drop zone or landing zone at any one time. The recovery teams should drag or carry their resupply bundles to a concealed area, if possible, before breaking down the bundles.

In the concealed area the supplies are taken out of the duffle bags and transferred to the empty rucksacks of the recovery party. The duffle bags are then folded up and taken along or cached. When parachutes are involved, the duffle bag is an excellent way to provide some protection when caches are used to hide air items. When time becomes a critical factor, the supplies are carried to unit assembly areas in the duffle bags.

Once a T-10 reserve chute becomes outdated, it is turned in to a property disposal office and can be drawn by the riggers for bundle drops. It is a simple task for the riggers to modify the reserve with a static line, which can be hooked directly to the floor D-rings of the UH-60. The advantage of these T-10 cargo chutes is that they can be cached without causing concern about damage to serviceable equipment.

Some of the resupply procedures developed by the 1st Battalion, 75th Ranger Regiment, may also be useful to other light infantry units.

Captain Leo A. Brooks, Jr., now a company commander with the 1st Battalion, 75th Ranger Regiment, was S-4 of the battalion when he developed the system described. He previously commanded a company in the 101st Airborne Division. He is a 1979 graduate of the United States Military Academy.

TOW Position

An Alternative

CAPTAIN MARTIN N. STANTON

For a TOW missile squad, an important part of dismounted operations is the construction of a fighting position that provides overhead cover and adequate space in which to operate, as well as storage space for the missiles.

The current TOW fighting position, as described in STP 7-11H24-SM, Task #071-316-2603, falls short of meeting these requirements. The prescribed position, as shown in Figure 1, is basically a 60" x 44" rectangular hole, 24" deep, with small extensions cut out of the rectangle to accommodate the legs of the TOW system. The spoil from the hole is used to build up the berms that surround the position and support the overhead cover. (A below-ground cutaway view of the back of the position is shown in Figure 2.)

In practice, this position has several serious shortcomings:

- **It is too tall.** Even if the diagram in the manual is correct (and with the night-sight tracker mounted, I'm not sure it is), with adequate overhead cover this position will stick up at least 38 inches above its surroundings. Even this would be a best-case situation, considering the need to construct a kneeling fighting position that a crew can function in and then adding 18 inches of overhead cover. A more realistic figure is 42 inches or even 48 inches above the ground.

- **It does not have room for a full TOW squad.** The position has room for two people, the gunner and the assistant gunner, but no room for the other two members of the TOW crew. This presents the squad leader with a problem: Does he take the gunner's place and control the weapon, take the assistant gunner's place and give fire commands, or dig a hole

nearby and rely on shouting fire commands to the crew? He may elect to leave one soldier with the squad's carrier (M901, M220, M998), or he may have the extra crewman dig in to provide security for the position. Whatever his choice, these crewmen can play no active part in the operation of the system. In addition, he must consider where to put the squad's radio. The logical place is in the actual

TOW position, but this adds another burden to the two men who are trying to function as an entire TOW crew.

- **It provides no protection for the missiles.** The diagram in the manual shows no room for missiles, nor does it specify where to put them or how to dig them in. The only reference to protecting the extra missiles is the statement, "Improve position by adding overhead cover

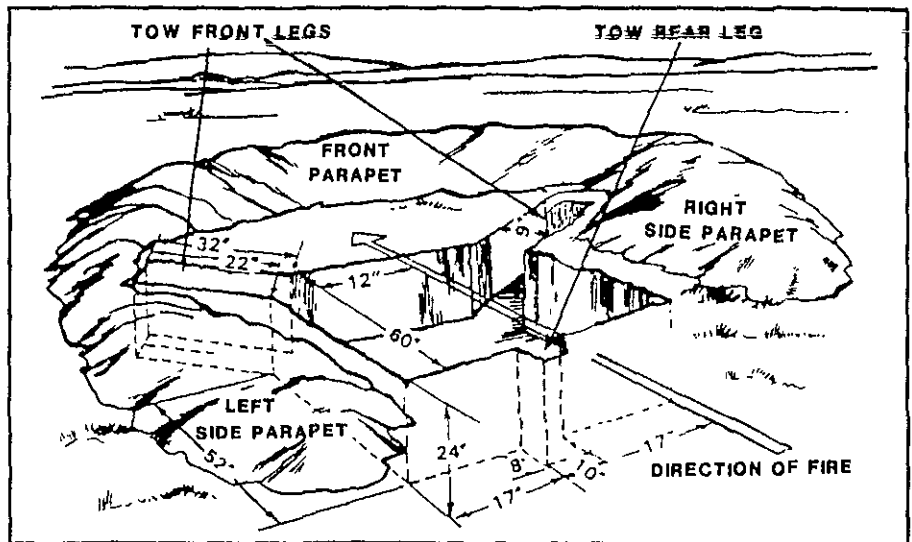


Figure 1. TOW position prescribed in manual.

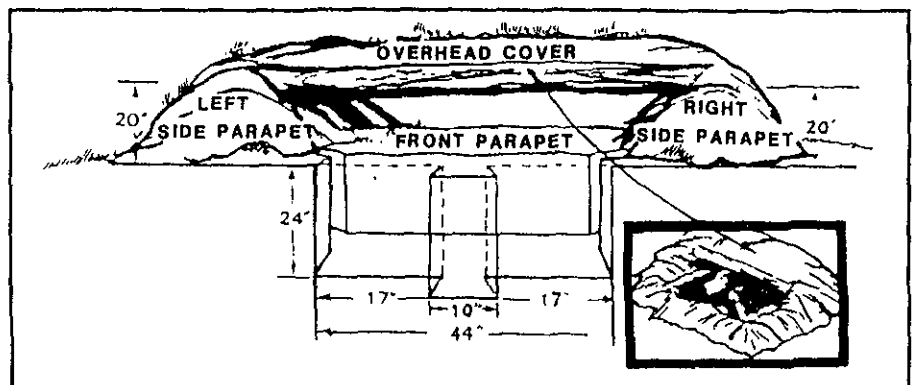


Figure 2. Below-the-ground cutaway view of back of position.

for crew and missiles. There is no mention of *where*, and the illustrations do not support it.

- **It is not deep enough.** A two-foot hole, even with overhead cover, is vulnerable to air hursts. Although this shallow depth is necessary to accommodate the minimum ground clearance for missile launch, it still reduces the amount of protection offered by the fighting position.

In short, the current position won't take the whole crew; it doesn't have room for missiles; even if dug to standard, it still leaves plenty of holes for air-burst shrapnel to get in; and if dug to standard, it is highly conspicuous. If further improved upward and sideways, it takes on the aspect of a parked Winnebago.

I would like to suggest an alternative position that looks something like the one in Figure 3. This position differs from the prescribed TOW fighting position in the following ways:

- **It is split level.** Soldiers stand, instead of kneeling, to operate the TOW system, which stands on a pedestal two feet high (Figure 4). This makes it easier for the soldiers to manipulate both the TOW system during tracking and firing and the

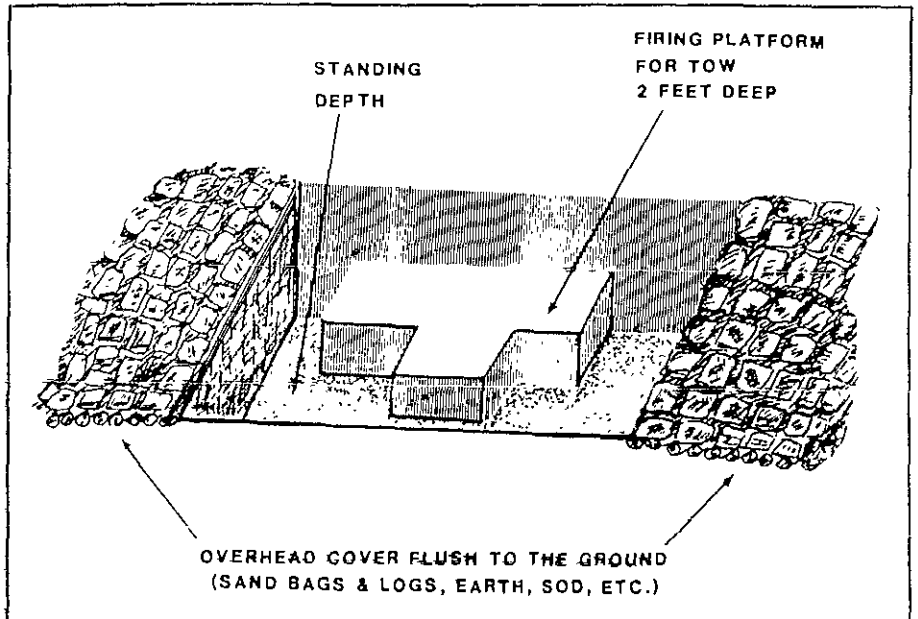


Figure 3. Alternative position.

machineguns in testing the system, and it also offers the crewmen the protection of a deeper hole.

- **It has positions for all the squad members (Figure 5).** This allows the squad leader to communicate and acquire targets without actually being involved in crew duties. It also allows the crew to

prepare and fire missiles faster.

- **It allows for overhead cover without being conspicuous.** It is better to have usable overhead cover at hand (literally a step away), than to have overhead cover that sticks up like a phone booth. The proposed position is virtually indistinguishable from the surrounding terrain until the

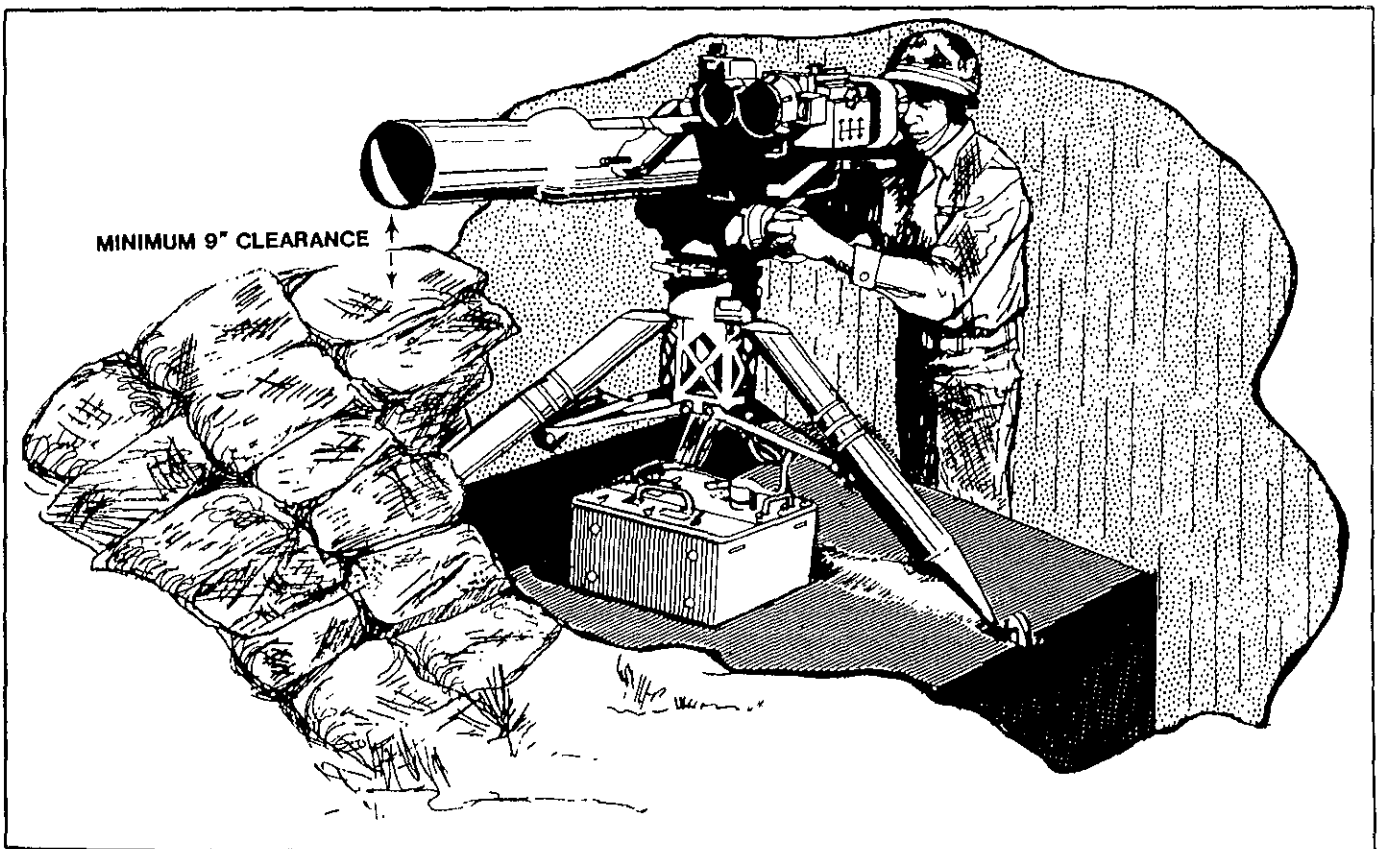


Figure 4. Two-foot high pedestal for TOW system.

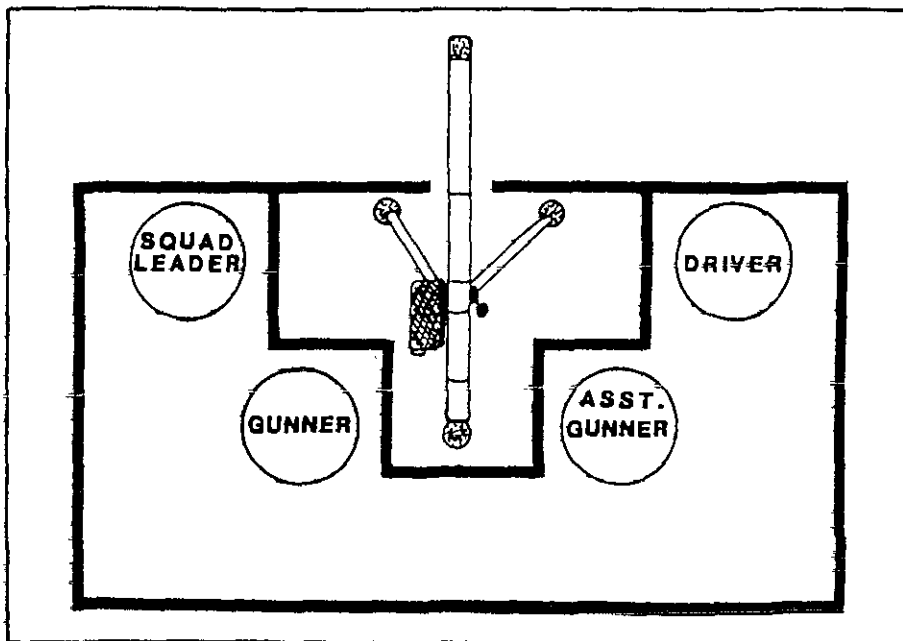


Figure 5. Positions for all the squad members.

crew erects the system to shoot. Even then its signature is only about 18 inches or so above the ground, and this can be easily

camouflaged with bushes or blinds.

This position obviously requires more labor than the current TOW position but

not prohibitively more. It can still be constructed by the squad members using the basic pioneer tools available with the squad carrier. Since construction may have to be halted at any moment in response to a threat, I suggest the following steps in construction: First the basic hole, then the second level, and finally the side overhead cover.

At times, it may be both possible and desirable to build actual overwatch cover for the system as shown in the manual. But the proposed position offers many more advantages than our current one, and should be considered on its obvious merits.

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Squad Combat Training

CAPTAIN GUY SANDS-PINGOT

During their frequent chance encounters with the enemy in the Vietnam War, many of our small units failed to react properly and suffered excessive casualties, even though the enemy forces were inferior in number and firepower. These units and their leaders seemed to lack a clear and concise idea of what actions they were supposed to take on chance contact. Too often, this also led a U.S. unit to do exactly what the enemy wanted it to do—divert manpower and firepower from its main objective for extended periods of time.

After 1973, we tended to forget many of the lessons we had learned the hard way in Vietnam. Proper small unit reaction to chance contacts was one such lesson.

In the 1980s, however, with the advent

of the light infantry concept, the Infantry School formulated a new model for small unit actions—a combat drill that pulled together the steps a small unit should take when it suddenly found itself confronted with an enemy force.

Fundamental within the drill, which was first announced in Field Circular 7-22, Infantry Squad and Platoon Drills, is the insistence on locating and fixing the enemy force and conducting a flank attack after fire superiority has been gained.

Accordingly, the combat drill provides a framework that, in sequential order, reduces decisions to their most critical points. It also serves as a multi-level model for small unit leaders to follow during their combat training programs. Implicit in the drill is the assumption that

small units will be engaged in combat as part of a larger force and as such will take part in a mission—a movement to contact, for example—to find the enemy in order to defeat him.

At one level, that of training, the drill clearly defines what needs to be trained and to what standards. Used as a medium of training, the combat drill improves individual and unit readiness in three ways: It reduces reaction time; it standardizes critical actions; and it ensures that both leaders and subordinates master the skills and tasks required to successfully meet the immediate requirements of a combat engagement.

On another level, that of operational technique, the combat drill clearly lays out the steps that, when practiced by small

units in peacetime, will lead to success in war.

Through constant repetition, the drill also gives individual soldiers a frame of reference within which they can critique and understand their role while seeing how their actions (or inactions) contribute to the success or failure of the unit's mission. Unit discipline and teamwork are taught simultaneously, and set standards are reinforced as an important by-product.

SQUAD DRILL

Although the drill has two variants, one for the squad and the other for a platoon, only the squad drill will be reviewed in this article. It is at the squad level that the first organized reaction to counter a chance enemy contact can take place. (Even when a platoon conducts a mission such as a movement to contact, only a part of its elements—usually a squad—will initially make contact or come under enemy fire.) The squad combat drill lists six major steps every squad leader must consider when he faces the possibility of meeting an enemy force. Here are those steps, with a few of my thoughts about each:

- **Prepare for combat.** This preparation usually takes place in an assembly area, although not always behind friendly lines (patrol base activities, for instance, should be practiced as well). Here the squad leader issues orders; checks equipment and the supply of ammunition, rations, and water; conducts communication checks; camouflages as needed; and rehearses and inspects his men before moving out through the line of departure (LD). While FC 7-22 does not explicitly say so, the preparation for combat does not end when the unit crosses the LD during movement and before contact; the squad leader must continue those actions and preparations that may be critical to the outcome of any future contact.

- **React to enemy contact.** When a chance contact is made with an enemy force, the element of the squad that makes contact instinctively and immediately seeks cover and concealment and returns fire with all available weapons, especially with the SAW or M60 machinegun. Additionally, it tells the squad leader what

is happening. This step immediately runs into the next one

- **Locate the enemy.** This is perhaps the most difficult step to execute. Although the squad can usually discern a general direction from which enemy fire is coming, it is difficult, and at times impossible, for all personnel who come under fire to observe and acquire targets in order to put well-aimed and well-placed sustained fire on enemy positions. Yet this is precisely what these soldiers must do, if they can, even if they are in the midst of hostile fire. The soldiers need to move according to the terrain, and team leaders must make certain that whenever their men move, they are covered by the fire of a base element. The squad leader must personally assess the situation as quickly as he can and reposition his troops accordingly. Once he has made his assessment, he notifies his platoon leader and decides on his next course of action.

- **Gain fire superiority.** In this step, the fire team leaders tell their men what to do as the squad attempts to destroy or suppress the enemy force. To do this, they must control and distribute their men's fire to make sure it is effectively concentrated on critical targets with a heavy volume at first, then tapering it to a sustained rate. There must be no pauses in the fire. (If, at this point, the squad leader decides his element cannot gain fire superiority, he also knows that his force will not be able to maneuver against the enemy position. Here is where the squad drill might merge into the platoon drill with the squad in contact becoming the fixing element.) When the squad leader feels he has gained fire superiority, he maneuvers his soldiers into position for the next step. At the same time he places himself where he can best control the actions of his men.

- **Conduct a flank attack.** In this fifth step, the squad leader chooses the flank to assault based on the principles of cover and concealment, speed in regard to the distance to the enemy, and the location of both his maneuver and fixing elements. Once these points have been swiftly developed into a workable plan, the maneuver element assaults through the enemy position using fire and movement. The standardization of radio brevity codes and pyrotechnic signals is of utmost importance. Surprise and violence of execution

are critical to the success of the attack. The enemy must be kept unaware of the flank from which the maneuver element will attack until the attack is actually begun.

- **Consolidate and reorganize.** When the enemy resistance has been overcome, the squad leader reorganizes his squad and consolidates the position. He makes sure that all enemy resistance has been eliminated. Then he ensures that local security is established and that hasty defensive positions are constructed so the maneuver element and the fixing element (which has deployed to the objective on signal from the squad leader) are both prepared for any possible enemy counterattack.

Additionally, casualties are given first aid, the chain of command is reestablished, ammunition and weapons are redistributed, if necessary, and any prisoners are secured and guarded. After all of this has been done, the squad leader reports to his platoon headquarters and awaits further instructions. A further step not mentioned in FC 7-22 would be to pursue the enemy when the tactical situation warrants it. There are several advantages to this step, the chief one being that it maintains and expands the momentum of the attack against the enemy unit. It must clearly be understood, though, that such actions must be properly coordinated at company and battalion level.

If a squad executes it properly, the combat drill restores to the basic infantry element the principle of maneuver by its clear enumeration of six steps—prepare for combat, react to enemy contact, locate the enemy, gain fire superiority, conduct a flank attack, and consolidate and reorganize. These steps serve as flexible guideposts and as reminders of the actions a squad leader needs to take when he and his men are confronted by an enemy force.

Unlike the older and more complicated immediate action drills of 20 or more years ago, the new combat drill is flexible and can be adjusted to the changing tactical situation. It gives a squad leader and his men a chance to learn the most critical combat steps today in preparation for tomorrow's battle.

Captain Guy Sands-Plingot is a 1978 ROTC graduate of Fordham University. He currently commands Company C, 8th Battalion, 2d Infantry Training Brigade at Fort Benning. He has also served in infantry leadership and staff positions in Germany and in Korea.

Combat Safety

CAPTAIN BRYAN G. WATSON

The senior leaders of the United States Army have taken a hard stand against training accidents, and I applaud both their cause and their unified zeal. I agree that we cannot morally accept the fact that more than a battalion of soldiers die each year in training accidents.

But the Army is fast becoming more concerned with training safely than with preparing to fight safely. In concert with the new safety revival, commanders at all levels now focus their attention on training safely first and on training realistically second. Success is measured by achieving new standards in safety performance instead of achieving preparedness for combat.

Caring for soldiers and training them for combat is an inherent responsibility of the commander. His position also entrusts him with the burden of constantly weighing troop safety against mission accomplishment. The burden is no lighter in peacetime than it is in combat. In the past, commanders allowed their subordinates to strive for a reasonable balance between training safety and combat realism, but commanders at battalion level and lower no longer have that latitude. Many commanders have simply given up trying to achieve a balance, because safety seems to drive training now.

The increase in the responsibility, stature, and certainly rank of the unit safety officer exemplifies the role safety had come to play in a unit's everyday life. The safety officer pores over the increasing volumes of safety regulations and advises the commander on current training restrictions. All too often, unfortunately, it is the safety officer's interpretation of these regulations that governs training

instead of the operation officer's estimate of the unit's needs.

Today's commander develops safety SOPs that outweigh his field SOPs, and are more familiar to him. He develops safety program after safety program, enumerating restriction after restriction. Each new entry is a reaction to someone else's safety failure. This passive-reactive approach to safety characterizes most of the safety programs I have seen.

The real injustice is that the soldier hears only what he can and cannot do in the name of safety. He is still not actively trained in safety and can apply very little of what he is told to the job he will have to perform in combat.

I believe we should adopt an active approach to safety that concentrates on training our soldiers to perform tasks to the same safety standards they will use in combat. I call this approach "combat safety," which is purely a mindset or a framework. The goal is the same as that of our senior leaders—to eliminate needless peacetime casualties. This approach does not differentiate the level of safety that is acceptable in combat from the level that is acceptable in training.

First, the combat safety approach establishes a safety standard for the soldier to meet, and it requires a commander to develop methods of performing combat tasks safely. He then demands that his unit train to standard on those tasks, emphasizing their combat safety principles. The commander must not compromise the standard whether during hip-pocket, SQT, or live fire training, because he owes it to his soldiers not to tailor a safety standard to a particular exercise or a particular visitor.

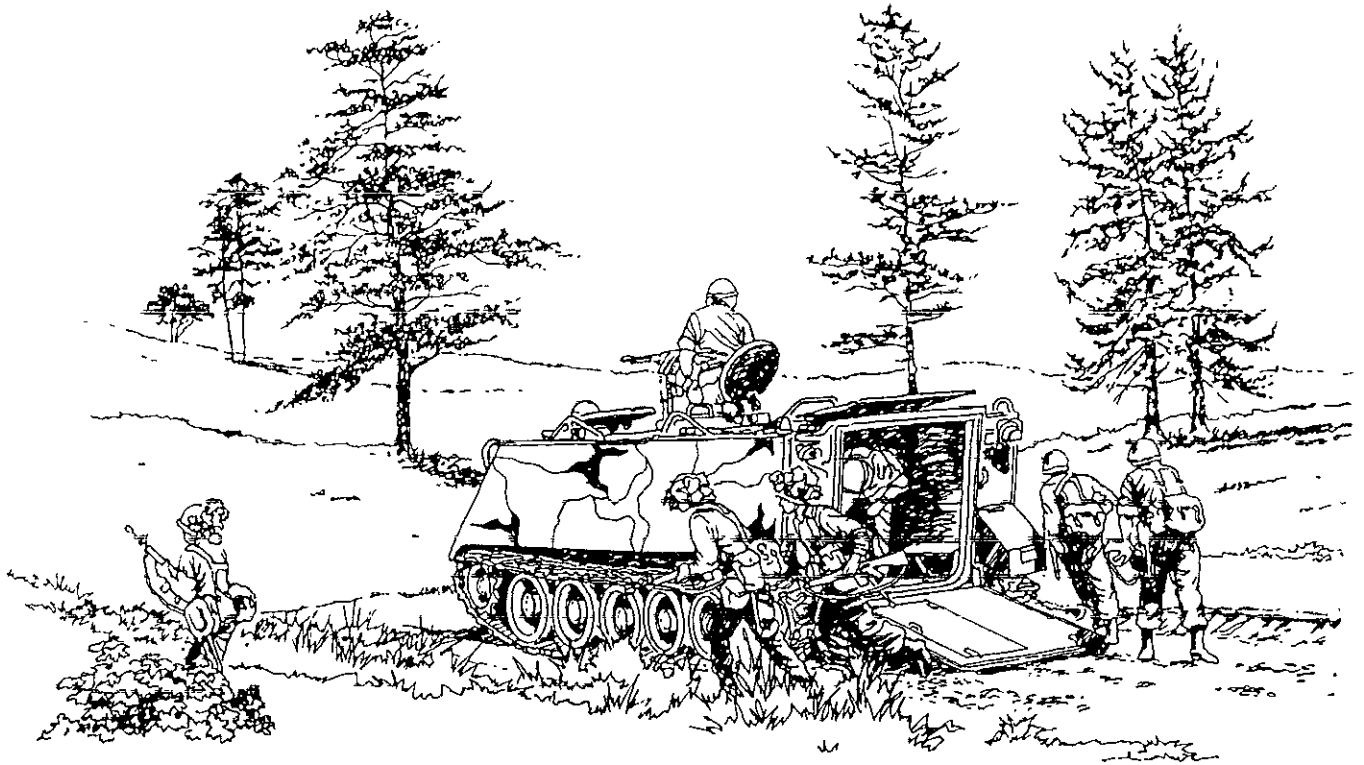
Nowhere is safety paranoia more

prevalent and more counterproductive than on a live fire range. S.L.A. Marshall, in his book *Men Against Fire*, says, "There is today a superior system for bringing infantry weapons under command and control so that in the crisis of battle their response will be decisive. It is called Train Fire."

Train fire in Marshall's day was a new concept. Prior to that time, infantry gunnery limited live fire exercises to the realm of individual weapons qualification. The train fire exercise Marshall spoke of, however, was the first attempt at allowing squads to practice massing all of their organic weapons against targets.

Today, train fire involves platoon and company level gunnery exercises. These units train to combine the fires of their organic weapons as well as the non-organic weapons of sister services, and this may be the single biggest contributor to the Army's sustained combat readiness. It is unfortunate that any benefits that might be gained from these exercises quickly take a back seat to peacetime safety restrictions.

During a recent tour in Europe, I served as the assistant S-3 of a mechanized combat engineer battalion. The battalion was preparing to fire its first mechanized infantry gunnery on the fire and maneuver ranges at Grafenwoehr. I was in charge of preparing the range scenarios for the squad and platoon qualifications. But getting the proper balance between safety and realism eluded me, so I turned to my brothers in the infantry for the answer and visited the squad and platoon level ranges of a mechanized infantry battalion. The precautions that unit took during its training on the range both surprised and appalled me: In one case, the range



safety NCO did not allow the members of a squad who had just dismounted from their carrier to insert magazines in their weapons until he was sure everyone was on line. In another case, he inspected each weapon and put a cleaning rod down each barrel before permitting any soldier to move toward a carrier. During another engagement, the soldiers conducted a dismounted attack using individual movement techniques. Once again, the safety NCO inspected each soldier's weapon and used his cleaning rod on it before permitting any movement.

The range safety officer, who was also a company commander, had imposed these stringent safety measures on the advice of his brigade's safety officer. While the measures certainly enforced safety, they did not *train* safety. Instead, they stifled all combat realism and severely degraded the unit's training; they did not train the soldiers on the proper way of mounting or dismounting from a carrier with loaded weapons.

After I saw these safety procedures in action, I became even more puzzled by the dilemma of safety versus realism and discussed it at length with my senior of-

icers. They outlined certain principles in safety philosophy that I now coin as combat safety imperatives:

- Develop definitive levels of safety for the weapon system or the equipment.
- Weigh the possible levels of safety against the degradations they cause in performance or readiness.
- If various levels of safety are situation-dependent, define each situation.
- Incorporate the combat safety principles into battle drills for the critical tasks that must become second nature to the soldier in combat.
- Constantly train to the established safety standard. Do not accept less than an exacting performance regardless of the type of training being conducted—hip pocket, dry fire, or live fire.

These imperatives were the key to the development of a combat safety guide. Jointly with the battalion commander and the S-3, I developed a combat safety SOP for mounting and then dismounting from an M113. We first delineated what we felt were acceptable safety procedures in combat. Next, we applied these procedures specifically to the critical tasks

required of a squad during contact. Then we developed some general combat safety principles for the task as a whole. Finally, with the help of our noncommissioned officers, we developed a battle drill that supported the combat safety principles for dismounting from or mounting an M113. The battle drill was used to train and retrain the squad members until correct performance became second nature to them.

The combat safety principles we outlined were the framework upon which the battle drill was based, but they did not apply solely to developing mount and dismount drills. Rather, they were general rules for handling weapons and were observed whether a soldier was on guard, in an arms room, or on a zero range.

The basic principles were these:

- Only the squad leader issues the commands that bring his unit's weapons to various states of readiness or safety.
- During carrier movement, no magazines are inserted, all bolts are forward, and weapons are on SAFE.
- At all times when inside the carrier, weapons remain on SAFE and have no rounds in the chamber.

**BATTLE DRILL
MOUNTING OR DISMOUNTING FROM A SQUAD CARRIER**

PHASE I. Condition: Conducting tactical movement, but not in contact.

- Squad members stand in the cargo hatch for 360-degree observation and security.
- No magazines have been inserted in any of the squad weapons.
- All bolts are forward in the weapons.
- All weapons are on SAFE.

PHASE II. Condition: Contact or observed enemy requiring the squad to dismount.

- The squad leader issues the command "Prepare to dismount," and the squad members take the following actions:
 - Soldiers drop inside the carrier.
 - Each soldier inserts a magazine into his weapon and slaps the magazine bottom to insure proper seating.
 - Soldiers face the ramp door.
 - The ramp or troop door is opened. (Preferably the ramp is used.)
- The squad leader issues the command "Dismount left/right," and the squad members take the following actions:
 - Soldiers dismount in an orderly manner through the troop door or ramp in the direction designated by the squad leader.
 - The squad leader positions himself where he can best control the squad.
 - Soldiers seek covered and concealed positions where the terrain offers good fields of fire.

PHASE III. Condition: Enemy targets are within range, and contact is imminent.

- At the squad leader's command "Engage" or upon observation of enemy targets within range, the squad takes the following actions:
 - The soldier pulls the bolt to the rear, chambering a round.
 - The soldier places the selector lever on SEMI or AUTO as predesignated by the squad leader. He directs his fires under the control of the squad leader.
 - After the weapon has been charged, the soldier places it on SAFE before moving to another firing position (or any reason to conduct a breach, better acquire a target, disperse from the last muzzle flash, or pursue the enemy).

PHASE IV. Condition: Enemy has been destroyed, or the squad receives an order requiring them to remount.

- The squad leader issues the command "Prepare to remount," and the squad takes the following actions:
 - The soldier ejects the magazine from his weapon and stores it on his person.
 - The soldier THEN pulls the bolt to the rear. He simultaneously cocks the weapon and watches the round eject, thereby clearing the chamber. The bolt is NOT locked to the rear but is allowed to fly forward.
 - The soldier places the weapon on SAFE.
- The squad leader issues the command "Remount," and the squad takes the following actions:
 - The squad moves to the vehicle and remounts through the troop door or the ramp in an orderly manner with the squad leader in the best position to command and control the movement.
 - Once inside the carrier, the squad leader checks each weapon for a SAFE condition.
 - The squad members return to their positions in the cargo hatch of the carrier for the 360-degree observation.

• A round is never chambered in a weapon until contact is made with an enemy.

• When a dismounted soldier moves from his initial position after dismounting, he places his weapon on SAFE before moving. After initial contact with the

enemy, the soldier may move using individual movement techniques with a round in the chamber as long as the weapon is on SAFE.

• To put a weapon on SAFE for remounting, a soldier removes the magazine and THEN clears the weapon

by ejecting the chambered round. Whether the soldier has chambered a round or not, he goes through the motion of making his weapon safe, which includes clearing the chamber each time.

• Weapons are declared safe by the squad leader after the dismounted operation is completed and the squad is safely inside the carrier.

The battle drill itself is shown in the accompanying box.

The combat safety training paid off for us on the ranges. Squad leaders performed the necessary safety checks. A safety NCO rode on each squad vehicle and monitored the squad's compliance with the combat safety principles. He interfered with the squad maneuver only at the sign of an unsafe act or when he questioned the safe condition of a weapon.

The squads executed the dismount and remount drills exactly and automatically. Soldiers moved in and out of the carrier as an experienced hunter gets in and out of his pickup truck. The loading and clearing of the weapons became an almost subconscious action. In the same way, a soldier moved from position to position as he would in combat with his weapon loaded and on SAFE. This enabled him to concentrate on moving tactically to a good firing position on his own initiative rather than with the permission of a safety NCO.

Target engagement scenarios and squad movement were fluid and uninterrupted by safety time-outs. Instead, the soldiers remained combat safe during the entire engagement. (The safety NCOs did rod and inspect all squad weapons at the end of a scenario before the squad was cleared of the range, because this was a training area requirement.)

As the scenarios became more difficult, I noticed a marked improvement in the soldiers' ability to control any situation on live fire ranges. The soldiers also became more aware of their weapons and controlled them better during movement. Lastly, I was confident that the soldiers were learning skills and safety procedures they would need in combat.

Captain Bryan G. Watson, a combat engineer, recently completed the Infantry Officer Advanced Course and is now assigned to the National Training Center at Fort Irwin. He is a 1982 graduate of the United States Military Academy

Thoughts on Recovery

CAPTAIN STEVEN D. CAGE

Recovering from a field exercise can be tough for any type of unit, but to different degrees. In a line company, for example, recovery generally continues to occupy the attention of the company commander until he feels the standard has been met. In a headquarters and headquarters company (HHC), however, planning for the next exercise or other training often begins as soon as the staff sections have returned from the field. In this case, therefore, a different approach is in order. What follows is a recovery plan that was developed for the HHC of a light infantry brigade.

The key people in the recovery operation are the section sergeants. They supervise their sections in recovery actions and also execute missions for their section leaders. While still in the field, they can prepare for recovery by doing the following:

- Ensuring that the section's vehicles, weapons, and equipment are maintained throughout the exercise.
- Continually accounting for all sections and individual equipment (and knowing from packing lists and inspections what is in the field).
- Documenting any known loss of or damage to equipment.

Although the section sergeants are the points of contact within their sections during recovery, the company executive officer (XO) is charged with managing recovery at the company level. He does this by collecting reports and, with the company first sergeant, conducting spot inspections to make sure the sections are on the right track.

PHASE I

SECTION EQUIPMENT

Off loaded and inventoried.

List of damaged or missing items submitted with statements (use reverse side).

Secured.

INDIVIDUAL EQUIPMENT

Off loaded and inventoried per packing list.

List of DX/missing items submitted (use reverse side). (Statements required only if extraordinarily damaged or a report of survey is requested.)

Secured.

VEHICLES

Off loaded and cleaned off/out.

After-operations PMCS completed.

DA 1970 turned in to dispatcher.

Weatherproofed (if required).

BII/OVM inventoried.

List of damaged/missing items submitted with statements.

Mileage driven by section drivers recorded.

WEAPONS AND SENSITIVE ITEMS

Ammunition/pyrotechnic shakedown and turn-in conducted.

Weapons cleaned, turned in, and accounted for.

CEOs accounted for and turned in.

VINSON equipment zeroed.

Section-drawn sensitive items accounted for and turned in.

List section personnel who deployed:

(Acting) Section Sergeant's Signature

PHASE II

SECTION EQUIPMENT

- _____ Cleaned.
- _____ Replaceable supplies replenished.
- _____ Turned in for servicing or DX as needed.
- _____ Borrowed equipment cleaned and returned.

INDIVIDUAL EQUIPMENT

- _____ Cleaned.
- _____ Items for DX consolidated by section sergeants and turned in to supply.

VEHICLES

- _____ Washed.
- _____ Topped off with fuel.
- _____ Weekly/monthly PMCS conducted as appropriate.
- _____ BII/OVM cleaned.
- _____ Turned in to DS maintenance, if necessary.

WEAPONS AND SENSITIVE ITEMS

- _____ Weapons drawn and cleaned for a second time (and a third time if firing was conducted).
- _____ Weapons needing maintenance identified to armorer with DA Form 2404.
- _____ DA Form 2404 on communications gear turned in to brigade communications officer.
- _____ PMCS conducted on VINSON equipment/vehicle radios.
- _____ Section-used sensitive items drawn and cleaned.
- _____ Award recommendations turned in to XO on company recommendations DF.

List section personnel who deployed:

(Acting) Section Sergeant's Signature

PHASE III

SECTION EQUIPMENT

- _____ Layout/100% inventory conducted.

INDIVIDUAL EQUIPMENT

- _____ DX/replacement of equipment completed.
- _____ Helmet/LBE put together per SOP.
- _____ Layout of TA-50 conducted.
- _____ Adjustment actions completed.
- _____ Rucksacks, duffel bags repacked per packing list.

VEHICLES

- _____ BII/OVM layout conducted and vehicles inspected.
- _____ Follow-up on vehicles turned in to maintenance.

WEAPONS AND SENSITIVE ITEMS

- _____ Follow-up on items turned in to maintenance.
- _____ Follow-up on NBC or communications items turned in to maintenance.
- _____ Recommended changes to recovery SOP submitted.

(Acting) Section Sergeant's Signature

Company recovery consists of three phases, and a checklist is provided for each phase. (Once these procedures become institutional knowledge in a unit, however, these lists probably will no longer be needed.)

Phase I is completed immediately upon redeployment and before the company is released. Of key importance in Phase I is accounting for all equipment or documenting any damages or losses. The section drivers' mileage is also recorded for use in ultimately awarding driving badges to those who qualify. (See Phase I checklist.)

Phase II is marked by cleaning equipment, turning it in for maintenance, if required, and turning damaged TA-50 items in to company supply for direct exchange (DX). Award recommendations are also turned in at this time. (See Phase II checklist.)

Phase III ensures that all individual and section gear is inspected for accountability, cleanliness, and serviceability. Finally, proposed changes to the unit's recovery SOP can be submitted at this time. (See Phase III checklist.) At the completion of Phase III, the company is again prepared to deploy the field.

Suspense dates for Phases II and III are normally determined by the company's leaders and the section sergeants before deployment. In most cases, the number of days allowed will vary with the length of the exercise and the season of the year.

Recovering from the field is a tough job that requires work, planning, and supervision. A failure in any of these areas could mean that a radio, a weapon, or a vehicle will let the unit down when the bullets fly during the next deployment.

While this recovery method may not work for others as well as it has for this unit, it should at least trigger thoughts on better ways of dealing with this sometimes-neglected aspect of field operations.

Captain Steven D. Cage commanded HHC, 2d Brigade, 10th Mountain Division at Fort Benning during the development of this recovery SOP. He is now an ROTC instructor at Western New England College. A 1978 graduate of the United States Military Academy, he also holds a master's degree from Central Michigan University.

PAST TIMES



INFANTRY OCS, 1941

EDITOR'S NOTE: Forty-six years ago, on 27 September 1941, the first class graduated from the Infantry Officer Candidate School (OCS). The Infantry OCS program had gone into effect a few weeks earlier, in July, along with OCS programs for the Field Artillery and the Coast Artillery, with other branch schools to follow later. The evolution of OCS up to that point had been a long process.

Before World War I the concept known as the "Plattsburg Idea" had been formulated to provide for the training of college students, at their own expense, at military summer camps. Although a relatively small number of officers entered the Army through this program, the effort provided the Army with a cadre of officers trained in the basic military skills.

Once the United States entered the war, in April 1917, 16 Officer Training Camps based on the old Plattsburg concept were established initially for civilians and reservists. The Army drew most of its officers from other sources, however, including the officer training camps in division cantonments and later from eight consolidated officers' training schools.

Although often referred to as "90-day wonders," the officers who came out of these schools successfully provided the leadership the Army needed and far surpassed the abilities of

the average new officer in any previous war.

The idea of an Officer Candidate School for Infantry was conceived in June 1938 when a plan for an officer training program was submitted to the Chief of Infantry by Brigadier General Asa L. Singleton, Commandant of the Infantry School at Fort Benning. No action was taken, however, until July 1940 when Brigadier General Courtney Hodges, Assistant Commandant of the Infantry School, submitted a revised plan.

The man given credit for the final plans for OCS, and for establishing the format, discipline, and honor code still used today, was Brigadier General Omar Bradley. As commandant of the Infantry School, General Bradley emphasized training and efficient organization.

On 27 September 1941, the first Infantry OCS class graduated 171 second lieutenants out of the 204 men who had begun the course in July.

The following is an address prepared for delivery to these graduates by General George C. Marshall, the Army's Chief of Staff and former Assistant Commandant of the Infantry School. When General Marshall was unable to attend as planned to deliver the address, it was read to the students, and each candidate was given a copy of it.

You are about to assume the most important duty that our officers are called upon to perform—the direct command of combat units of American soldiers. To succeed requires two fundamental qualifications—thorough professional knowledge and a capacity for leadership. The schools have done all that can be done in the limited time available to equip you professionally, and your technique of weapons and tactics should rapidly improve with further study and actual practice. However, they cannot provide you with qualities of leadership—that courage and evident high purpose which command the respect and loyalty of American soldiers.

You were selected as officer candidates because you give evidence of possessing these qualifications. Whether or not you develop into truly capable leaders depends almost entirely upon you personally.

Your school work has been under ideal conditions from an instructional standpoint; but when you join your organizations, you will find many difficulties and deficiencies complicating your task. There will be shortages in equipment, for example. These are being made good as rapidly as possible, but

so long as they exist they are a challenge to your ingenuity and not an invitation to fall back on an overdose of close order drill and the other necessary but stultifying minutia which so irked the Army of 1917 that we still suffer from the repercussions.

Warfare today is a thing of swift movement—of rapid concentrations. It requires the building up of enormous fire power against successive objective with breathtaking speed. It is not a game for the unimaginative plodder. Modern battles are fought by platoon leaders. The carefully prepared plans of higher commanders can do no more than project you to the line of departure at the proper time and place, in proper formation, and start you off in the right direction. Thereafter, the responsibility for results is almost entirely yours. If you know your business of weapons and tactics, if you have inspired the complete confidence and loyalty of your men, things will go well on that section of the front.

There is a gulf between the drill ground or cantonment type of leadership and that necessary for the successful command of men when it may involve the question of sacrificing one's

life. Our Army differs from all other armies. The very characteristics which make our men potentially the best soldiers in the world can be in some respects a possible source of weakness. Racially we are not a homogeneous people, like the British for example, who can glorify a defeat by their stubborn tenacity and dogged discipline. We have no common racial group, and we have deliberately cultivated individual initiative and independence of thought and action. Our men are intelligent and resourceful to an unusual degree. These characteristics, these qualities may be, in effect, explosive or positively destructive in a military organization, especially under adverse conditions, unless the leadership is wise and determined, and unless the leader commands the complete respect of his men.

Never for an instant can you divest yourselves of the fact that you are officers. On the athletic field, at the club, in civilian clothes, or even at home on leave, the fact that you are a commissioned officer in the Army imposes a constant obligation to higher standards than might ordinarily seem normal or necessary for your personal guidance. A small dereliction becomes conspicuous, at times notorious, purely by reason of the fact that the individual concerned is a commissioned officer.

But the evil result goes much further than a mere matter of unfortunate publicity. When you are commanding, leading men under conditions where physical exhaustion and privations must be ignored; where the lives of men may be sacrificed, then, the efficiency of your leadership will depend only to a minor degree on your tactical or technical ability. It will primarily be determined by your character, your reputation, not so much for courage—which will be accepted as a matter of course—but by the previous reputation you have established for fairness, for that high-minded patriotic purpose, that quality of unswerving determination to carry through any military task assigned you.

The feeling which the men must hold for you is not to be compared to the popularity of a football coach or a leader of civic activities. Professional competence is essential to leadership, and your knowledge of arms, equipment, and tactical operations must be clearly superior to that possessed by your subordinates; at the same time, you must command their respect above and beyond those qualities.

It is difficult to make a clear picture of the obligations and requirements for an officer. Conditions of campaign and the demands of the battlefield are seldom appreciated except by

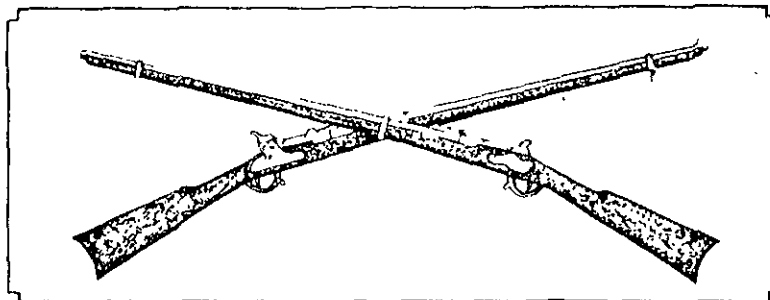
veterans of such experiences. The necessity for discipline is never fully comprehended by the soldier until he has undergone the ordeal of battle, and even then he lacks a basis of comparison—the contrast between the action of a disciplined regiment and the failure and probable disintegration of one which lacks that intangible quality. The quality of officers is tested to the limit during the long and trying periods of waiting or marching here and there without evident purpose, and during those weeks or months of service under conditions of extreme discomfort or of possible privations or isolations. The true leader surmounts all of those difficulties, maintaining the discipline of his unit and further developing its training. Where there is a deficiency of such leadership, serious results inevitably follow, and too often the criticism is directed to the conditions under which the unit labored rather than toward the individual who failed in his duty because he was found wanting in inherent ability to accept his responsibilities.

Remember that we are a people prone to be critical of everything except that for which we are personally responsible. Remember also that to a soldier a certain amount of grouching appears to be necessary. However, there is a vast difference between these usually amusing reactions and the destructive and disloyal criticism of the undisciplined soldier.

Mental alertness, initiative, vision are qualities which you must cultivate. Passive inactivity because you have not been given specific instructions to do this or to do that is a serious deficiency. Always encourage initiative on the part of your men, but initiative must, of course, be accompanied by intelligence.

Much of what I have said has been by way of repetition of one thought which I wish you gentlemen to carry with you to your new duties. You will be responsible for a unit in the Army of the United States in this great emergency. Its quality, its discipline, its training will depend upon your leadership. Whatever deficiencies there are must be charged to your failure or incapacity. Remember this: the truly great leader overcomes all difficulties, and campaigns and battles are nothing but a long series of difficulties to be overcome. The lack of equipment, the lack of food, the lack of this or that are only excuses; the real leader displays his quality in his triumphs over adversity, however great it may be.

Good luck to you. We expect great things of you. Your class is the first of which I believe will be the finest group of troop leaders in the world.



ENLISTED CAREER NOTES



PROMOTION CRITERIA

Many enlisted infantrymen, like other soldiers, wonder what criteria are used in promoting members of the enlisted force. Although Army regulations spell out the requirements in detail, the accompanying chart provides a handy guide.

CORRECTION ON DRILL SERGEANT TOURS

An item in the July-August 1987 issue of *INFANTRY* (page 46) was wrong in saying that drill sergeant duty is a four-year tour. The item should have read, "Drill sergeant duty is still a *two*-year tour with the option to request an extension or an additional 12 months."

ELECTRONIC WARFARE/CRYPTOLOGIC OPERATIONS

The Electronic Warfare/Cryptologic Operations enlisted career management field needs qualified soldiers to reclassify into CMF 98. MILPERCEN career managers are looking for soldiers in the rank of sergeant (not promotable status) and below in overstrength MOSs.

The MOSs in CMF 98 are 05D (Electronic Warfare/Signal Intelligence Emitter Identifier/Locator); 05H (Electronic Warfare/Signal Intelligence Morse Interceptor); 05K (Electronic Warfare/Signal Intelligence Non-Morse Interceptor); 98C (Electronic Warfare/Signal Intelligence Analyst); 98G (Electronic Warfare/Signal Intelligence Voice Intercept Operator); and 98J (Electronic Warfare/Signal Intelligence Noncommunications Interceptor).

To qualify for reclassification into one of these MOSs, a soldier must be a high school graduate, must have a standard test score of 100 or higher, and must

FOR PROMOTION TO	TIME IN SERVICE	TIME IN GRADE ³	SELECTION METHOD	SELECTION LEVEL	FREQUENCY OF SELECTION
PV2	6 mos. ¹	----	Commander	Unit	Daily
PFC	12 mos. ²	4 mos.	Commander	Unit	Daily
CPL/SP4	26 mos. ³	6 mos.	Commander	Unit	Daily
SGT	36 mos. ⁴	8 mos.	Local Selection Board	Semi-Centralized	Monthly
SSG	84 mos. ⁴	10 mos.	Local Selection Board	Semi-Centralized	Monthly
SFC/PSG	6 yrs. enlisted service	As announced in zone	DA Board	DA	Annually
MSG/1SG	8 yrs. enlisted service	As announced in zone	DA Board	DA	Annually
SGM/CSM	10 yrs. enlisted service	As announced in zone	DA Board	DA	Annually

¹Accelerated advancements permitted within percentage constraints for those with at least 4 but less than 6 months time in service.
²Field commanders may promote soldiers with less than 12 months but more than 6 months; limited to 20 percent of assigned and attached PFCs.
³Field commanders may waive to 12 months; limited to 20 percent of assigned CPLs/SP4s.
⁴Meet eligibility criteria and attain local list status based on 1,000-point standardized scoring system. DA announces monthly cut-off scores, and those with highest scores within each zone and MOS receive available promotions. SGTs waived have at least 18 months but less than 36 months time in service. SSGs waived have at least 60 months (or 48 months for those in the "super-accelerated" secondary zone) but less than 84 months time in service.
⁵May be waived by one-half.

qualify for a top secret special intelligence security clearance.

Interested soldiers who meet all the qualifications for CMF 98 should call the enlisted Military Intelligence Branch at MILPERCEN; AUTOVON 221-0076/0141 or commercial (202) 325-0076/0141. Each caller should ask to speak to the professional development NCO for the MOS that interests him.

TRANSITION MANAGEMENT

The Army's new transition management system, now being tested at Fort Bragg, North Carolina, is designed to retain quality soldiers by taking pieces of

separate systems and weaving those systems into a cohesive new approach.

The test blends Total Army career counseling, education, job assistance, and career planning into a single program, making transition much easier on the soldier.

The basic premise of transition management is that informed soldiers are more likely to stay on active duty or to enlist in the Reserve components. This, in turn, will help the Army's retention effort for both Active and Reserve Component units. More important, the new program provides vital services and information to a transitioning soldier.

OFFICERS CAREER NOTES



AUDIT OF ORBs

Although Army officers are required by regulation to audit their Officer Record Briefs (ORBs) once a year (in their birth months), they may need to do so more often than that. Since career managers constantly use ORBs to make decisions on assignments and schooling for officers, these records should always be complete and up to date.

If an officer puts off an ORB audit until just before his records go before a board, his ORB may not get updated in time, and board members may miss some important information about him.

While Department of the Army selection boards rely primarily on an officer's overall Official Military Personnel File, board members use the ORB as a summary document. The information on an officer's ORB comes from the Officer Master File, but each officer is responsible for ensuring the accuracy of his own ORB.

MILPERCEN sends officers copies of their ORBs during the month before their birth months, followed during the next year by two more copies at four-month intervals. The copy intended for audit during the birth month is marked "AUDIT" at the top, while the other two are marked "FEEDBACK."

Because of processing time, the first feedback ORB may not have all the changes an officer has requested. Unless his records are due to go before a board, he should wait to receive his second feedback ORB before submitting changes that were not accepted after his annual audit.

An officer who does not receive an audit ORB on schedule should ask his personnel service center to request one. He should also go through his PSC if he needs to check his ORB at any other time.

After an annual audit, an officer must date and sign his ORB in Section X (Remarks) to verify its completeness and accuracy.

Officers should use DA Pamphlet 640-1, Officers Guide to the Officer Record Brief, dated 1 April 1987, when reviewing their ORBs. This pamphlet explains each ORB data element.

Copies of the pamphlet have been distributed throughout the Army, but units can get more copies through normal distribution channels.

ADVANCED MANAGEMENT TRAINING

Advanced management training is available to Army colonels. During this training, through daily contact with experienced executives from private industry and government in management courses, these officers gain valuable experience in preparing for responsible management positions.

Civilian institutions design advanced management training courses to:

- Increase capabilities for executive-level management.
- Expand operational and planning techniques.
- Increase ability to appraise economic, social, political, and technological changes.

• Provide for the exchange of expertise between senior executives of national and international industry and senior Army officers.

Officers may be selected regardless of their present assignments. Colonels in command positions, however, must have completed the minimum command tenure before the course begins.

To qualify for this training, an officer must have:

- A minimum of 15 but not more than 26 years of active federal commissioned service before completing the course.
- At least one year of active service left after completing the course.

A candidate should also have:

- A baccalaureate degree or higher and

be a graduate of a senior service college. (The latter requirement can be waived if an officer meets the other criteria.)

- Demonstrated leadership and adaptability in executive positions.
- Knowledge of command problems such as organization and administration.
- Staff experience.
- Proven potential for career development and intellectual growth.

Colonels who want to compete may obtain additional information from Colonels' Division, MILPERCEN.

CAS³ FOR USAR AGR OFFICERS

All Army Reserve Active Guard Reserve (AGR) captains and majors with less than 13 years of commissioned service are now required to complete the Combined Arms and Services Staff School (CAS³). To attend, an officer must have credit for the completion of an officer advanced course (OAC) or equivalent.

CAS³ training can be waived for AGR officers who were enrolled in or had completed the command and general staff officer course (any version) or its equivalent as of 1 October 1986.

CAS³ is taught in two phases. Phase I is 144 hours of nonresident instruction to be completed within 18 months of enrollment. Phase II, the resident portion, is conducted at Fort Leavenworth, Kansas. Resident training can be taken in a temporary duty and return or a temporary duty enroute status.

Enrollment is managed by the School of Corresponding Studies and can be facilitated by the submission of CGSC Form 150 (Enrollment Card) through Commander, ARPERCEN, ATTN: DARP-AR, 9700 Page Blvd., St. Louis, MO 63132-5200.

BOOK REVIEWS



A number of most interesting books have reached us in recent months. Among them were the following, which we think you would enjoy reading:

• **MAURICE'S STRATEGIKON: HANDBOOK OF BYZANTINE MILITARY STRATEGY.** Translated by George T. Dennis (University of Pennsylvania Press, 1984. 180 Pages. \$26.25). This is the first complete English translation of the most original Byzantine military handbook. In his introduction, the translator, a Jesuit priest and a professor of history at the Catholic University of America, explains the book's background and the sources of his translation. The *Strategikon* was composed between 575 and 628, but the identity of the actual author has never been clearly determined. It does appear to Dennis, though, that the Emperor Maurice (582-602) had a hand in its composition. Maurice is remembered for his reform of the Roman Army and it is that army that is described in this work. Dennis believes the handbook was intended for the average commander and accordingly was written in a language he could understand. He also believes the author, whoever he was, was an experienced soldier who had commanded troops on at least two fronts. Today's infantryman would do well to read and study this handbook, much of which still applies to the practice of military leadership at all levels.

• **UNITED STATES ARMY UNILATERAL AND COALITION OPERATIONS IN THE 1965 DOMINICAN REPUBLIC INTERVENTION.** By Major Lawrence M. Greenberg, Analysis Branch, Center of Military History (CMH Publication 93-5, 1987. 115 Pages, Softbound). For 17 months beginning 30 April 1965, U.S. military forces (chiefly the 82d Airborne Division), at first alone and then as part of the Organization of American States' (OAS) Inter-American Peace Force, participated in a peace-keeping mission in

the Dominican Republic. The mission was aimed at protecting the lives of U.S. citizens living in the Republic, establishing stability, and preventing a communist takeover of the country. This is the story of that operation; it is complete with the historical background to set the scene, the call for help from Republic military leaders relayed through the U.S. Ambassador's office, the decision to intervene, and the results of the intervention. The author feels that although our military leaders on the spot and the men of the 82d Airborne Division did their jobs in an exemplary fashion, "the U.S. intervention damaged political relationships within the western hemisphere—causing wounds which remain unhealed." He also points out that the "intervention caused deep rifts within the United States, especially between the Congress and the chief executive."

• **DICTIONARY OF WARS.** By George C. Kohn (Facts on File, 1986. 586 Pages. \$29.95). It is hard to believe that even though there are more than 1,700 entries in this book, the author feels his work does not include every military conflict. Although he defines war in a fairly broad manner, his intention is to provide both the general reader and the student "a quick, convenient, authoritative, and comprehensive source of information on the major wars, revolutions, revolts, and rebellions which have for so long been a part of history." He does this quite well. The hundreds of cross-references in the main body of the work are particularly useful, as are the two indexes.

• **BATTLES HITLER LOST.** By Marshall Georgi Zhukov, *et. al.* (Richardson and Steirman, 1986. 240 Pages. \$27.50). After an introductory

section that gives an overview of the Soviet Union's participation in World War II, 15 Soviet general officers give their accounts of some of the great battles in which they played prominent parts. Numerous previously unreleased photographs and a set of 17 full-color maps (each repeated in black-and-white in the chapter headings) complement the narratives. Of course, every Soviet soldier and airman was a hero, and the operations were usually conducted perfectly. On occasion the Soviet Supreme Commander, Joseph Stalin, had to be comforted or placated. This is an interesting book in some ways, but it is also one that must be handled with care.

• **GREAT BATTLES OF WORLD WAR II.** By John Macdonald (Macmillan, 1986. 192 Pages. \$35.00). The publisher claims too much for the computer graphics but the rest of the book is attractive and informative. Seventeen "battles" are covered, including the 1940 Battle of Britain and the sinking of the *Bismarck* the following year. A bibliography and an index are included.

• **G.I.: THE AMERICAN SOLDIER IN WORLD WAR II.** By Lee Kennett (Scribner's, 1987. 265 Pages. \$20.95). This is an excellent word-picture of the U.S. soldier of World War II days—his background, his reaction to the Army and to training and combat, his good and bad qualities, and his return to civilian life. Few who served wanted to be in the Army, but while they inwardly rebelled against the "Army system," they generally did their jobs "with a grim competence perhaps lightly tinged with cynicism," as the author puts it. Despite many opinions to the contrary, the American soldier in World War II made a fine combat soldier. The war he fought in the Pacific was different from the war his fellow soldiers fought in Europe, and the soldiers in each area reacted differently to their environments and enemies. They did not endear themselves to their allies;

NOTE TO READERS: All of the books mentioned in this review section may be purchased directly from the publisher or from your nearest book dealer. We do not sell books. We will furnish a publisher's address on request.

they probably drank too much and acted accordingly; they refused to understand foreign lands and peoples, although they tended to get along better after the war with their former enemies. The author is a professor of history at the University of Georgia. He exhibits a good feel for the G.I. of World War II, but he should remember that the OD uniform was wool (shade 32, in fact) and not the cotton twill fatigue uniform.

• **THE OTHER PRICE OF HITLER'S WAR: GERMAN MILITARY AND CIVILIAN LOSSES RESULTING FROM WORLD WAR II.** By Martin K. Sorge (Greenwood, 1986. 175 Pages. \$32.95). One of the major enemy powers the U.S. soldier faced during World War II—Germany—paid a high price for beginning the war in 1939. In this book, the author, a retired U.S. Air Force officer, not only details the overall German war losses from all causes, he also discusses atrocities committed by all parties to the struggle; the barbaric treatment of German prisoners-of-war by the Soviets; the destruction of German cities; and the post-war refugee problem resulting from Germany's dismemberment. From the numerous sets of figures in the book, it appears German losses (military and civilian) totaled nearly nine million, about 12 percent of the country's pre-war population. The author feels deeply for the German people and concludes his book by writing that Germany's "catastrophic suffering in defeat might be considered as at least a partial atonement for the losses Germany inflicted upon others" and "should permit a greater degree of objectivity in the popular and historic treatment of the German nation during and subsequent to the war years."

• **UNDER THE BOMBS: THE GERMAN HOME FRONT, 1942-1945.** By Earl R. Beck (University Press of Kentucky, 1986. 252 Pages. \$21.00). The author, a professor of history at Florida State University, does not concentrate on detailing the number of casualties Germany suffered during World War II, as does the previous author. Rather, he traces the travails the German people suffered as they endured the last three years of the war, from the hell of Stalingrad to the greater hell of Berlin. Along the way he tells of the sufferings caused the

civilian population by the Allied day and night bombing campaign, the continual movement of huge numbers of people from area to area, the fear of the Soviets as the war went on, the rise of youth groups, the problems with foreign workers, the shortages of food and clothing, the lack of almost any sort of entertainment as the war wound down, and the problems of reconstruction. He, too, feels a great sympathy for the German people and believes that "World War II left us all with a residue of suffering that we have not yet fully comprehended."

• **JANE'S MILITARY REVIEW.** Sixth Year of Issue. Edited by Ian V. Hogg (Jane's, 1987. 167 Pages. \$16.95). This latest edition of what has become a most popular publication has several articles that should appeal to all infantrymen—the growing importance of the helicopter on the modern battlefield; British Army training for fighting in built-up areas (FIBUA) and the need for FIBUA-oriented weapon systems; the new Spanish Army; mortars in the 1980s; a renewal of the gun-versus-missile argument; and the increasing use of simulation for training purposes. There is also an interesting photographic section titled "Not So Secret Weapons" that depicts World War II equipment developments that were never adopted and have since been forgotten. The book concludes with the usual "100 Years Ago" essay; in this one, the editor recalls weapon developments in 1886 and 1887.

• **STEINDLER'S NEW FIREARMS DICTIONARY.** By R.A. Steindler (Stackpole, 1985. 319 Pages. \$24.95). This new edition of an old stand-by is an excellent reference work, with its hundreds of entries arranged in dictionary format supplemented by specially developed photographs, drawings, and charts. The entries, where necessary, include cross-references, and commonly used alternative designations are given for certain of the items mentioned. A detailed, eight-page bibliography completes the book.

INFANTRY HOTLINE
To get answers to Infantry-related questions or to pass on information of an immediate nature, call AUTOVON 835-7693, commercial 404/545-7693.
For lengthy questions or comments, send in writing to Commandant, U.S. Army Infantry School, ATTN: ATSH-ES, Fort Benning, GA 31905.

• **WORLD WEAPON DATABASE: VOLUME I, SOVIET MISSILES.** By Barton Wright (D.C. Heath, 1986. 701 Pages. \$65.00). This book contains a voluminous amount of data on Soviet missiles of all kinds. The source data for each missile is presented in a standard format under 60 data categories such as performance, warhead, and dimensions. The missiles are listed by the designations used by the United States; there is also a list of the NATO codenames for the same missiles. This database covers all Soviet guided missiles ever produced, as well as Soviet unguided FROGS (free rockets over ground), and is based on information that has been published in various open sources.

• **AMERICAN DEFENSE ANNUAL, 1986-1987.** Edited by Joseph Kruzal (D.C. Heath, 1986. 293 Pages. \$32.00). This second volume in a relatively new series contains 11 individual essays that cover such subjects as defense doctrine and strategy, the defense budget, manpower and personnel issues, and weapon procurement. There are also two special supplements plus a 1985 defense chronology and a bibliography of defense books published in that same year.

• **ARMIES OF NATO'S CENTRAL FRONT.** By David C. Isby and Charles Kamps, Jr. (Jane's, 1985. 479 Pages. \$50.00). The authors use their first four chapters to give a general overview of the military situation on NATO's central front and to offer a possible scenario for a Soviet invasion. They then devote separate chapters to those NATO countries that have forces on the ground in Central Europe, and give an order of battle for each force. For each, the authors cover such subject areas as manpower and training, command and organization, weapons, reserve system, and tactics. The book also contains numerous photographs, maps, charts, and line drawings.

• **JANE'S SPACEFLIGHT DIRECTORY, 1987.** Third Year of Issue. Edited by Reginald Turnill (Jane's 1987. 551 Pages. \$130.00). Gradually, U.S. Infantrymen are becoming more and more concerned with space and their possible future role in our country's space efforts. This publication is the kind of reference book they need to update

themselves, for it includes discussions of national and international space programs, the solar system, military space policies, world space centers, and unmanned launchers. The editor believes that in the United States "NASA has lost the will to fly men in space" and that the U.S. itself is now in "a sordid period of nationalism." The Soviets, meanwhile, are pushing ahead and planning seriously for a manned expedition to Mars. An addenda, 1986 satellite launch tables, and an index complete the book.

Here are a number of our longer reviews:

THE DOGMA OF THE BATTLE OF ANNIHILATION: THE THEORIES OF CLAUSEWITZ AND SCHLIEFFEN AND THEIR IMPACT ON THE GERMAN CONDUCT OF TWO WORLD WARS. By Jehuda L. Wallach (Greenwood Press, 1986. 334 Pages. \$45.00). Reviewed by Doctor William J. Fanning, Jr.

"Nothing is more destructive in the field of military art than the establishment of dogma." This is the underlying theme of the author's refreshing and intellectually stimulating analysis of German military thought and conduct of operations from the late 19th century through 1945. The author, a reserve officer in the Israeli Defense Force and a professor of military history at Tel Aviv University, focuses primarily on the influence exerted by one man, Count Alfred von Schlieffen. He asserts that the rigid doctrine laid down by Schlieffen when he was Chief of the General Staff permeated the German Army during this period and contributed not only to its defeat in World War I but to its debacle in the 1939-1945 sequel as well.

Wallach's book encompasses two levels of thought. On the first, he discusses Schlieffen's strategical and tactical principles, how they were adopted and put into practice by the Germans during two world wars, and their fatal consequences. On another level, Wallach presents a concise and lucid comparison of Schlieffen's ideas with those of an earlier Prussian soldier and thinker, Count Carl von Clausewitz. Indeed, it is an integral part of the author's thesis that the Germans adhered to Schlieffen's dogmatic precepts instead of to the more flexible teachings

of Clausewitz. Throughout his book, Wallach contrasts Clausewitz's astute observations with the mistakes the German Army committed as it followed Schlieffen's methods.

Ironically, generations of German soldiers, including Schlieffen himself, rejected and misunderstood many of Clausewitz's teachings, all the while believing they were his devoted disciples.

This book is highly recommended for both the general reader and the professional soldier seeking to gain a sharper perspective on the fallacy of imposing fixed systems of command on the conduct of war.

FUNDAMENTALS OF TACTICAL COMMAND AND CONTROL (A SOVIET VIEW). By D.A. Ivanov. (Moscow, 1977, 333 Pages. Translated and republished by the USAF Directorate of Soviet Affairs, 1984.) Reviewed by Major Don Rightmyer, United States Air Force.

Planning and training for combat can seldom go wrong when "know thy enemy" is one of the guiding principles. A military professional certainly cannot hope to succeed in battle without having as much information about his opponent as possible.

Among the many areas of vital intelligence about an enemy force, command and control is essential to understanding and evaluating the opposing force's actions during troop marshaling, maneuvering, and combat. This book is an important contribution to our application of the Soviet Army's system of tactical command and control.

It is Volume 18 in the Soviet Military Thought Series that has been translated and edited by the Air Force's Directorate of Soviet Affairs. Published in 1977, the book was written principally for "officers . . . of the Ground Forces (and) those studying at military education institutions of various levels." U.S. military personnel will also find it useful.

The authors first lay a theoretical foundation for understanding their command and control system. While they generously mix in the typical Marxist-Leninist phrases that one expects, there is some worthwhile information to be found here.

From the abstract, the authors move to a more specific coverage of Soviet equipment, command posts, and command networks. While the Soviets continually seek more sophisticated technology and computer equipment from the West, the illustrations depict equipment of the 1950s. It is no wonder that the Soviets covet Western micro- and mini-computers to upgrade their data handling capabilities.

The remaining chapters of interest deal with how the Soviets gather the necessary information for making decisions, how they make decisions, and how they maintain troop morale during combat. The written description is improved by some interesting diagrams that clarify the operations being discussed. The final chapter explains how Soviet leaders relate the lessons of combat experience to their own troops, something the Soviets frequently try to do.

Unlike many Soviet books on military topics, this one is quite readable and contains a great deal of specific information. It gives the reader a good understanding of what the Red Army thinks and does in the command and control of its ground forces.

JULIUS CAESAR: THE PURSUIT OF POWER. By Ernle Bradford (William Morrow and Company, 1984. 312 Pages. \$17.95). Reviewed by Leroy Thompson, Mapaville, Missouri.

Ernle Bradford has the rare knack of being able to write well-researched and informative biographies in a highly readable manner. This is another Bradford book in that tradition.

From a soldier's point of view, Bradford makes some points that are as true today as they ever were. For example, Caesar always kept his attention focused on the power politics of Rome no matter where he was campaigning, for he realized that politics and military command are closely related. Bradford's book title is especially appropriate because it traces the machinations and the lucky breaks that combined to allow Caesar to rise to a position no other Roman had attained.

Bradford covers Caesar's campaigns and battles in reasonable detail but he does not lose track of the fact that his

main interest is their relationship to Caesar's rise to power. Some of Caesar's victories, in fact, were orchestrated against foes who did not really want to fight.

Although he avoids sensationalism, Bradford does offer the pros and cons of the theory advanced by some historians that Caesar was homosexual. Too, the section dealing with Caesar's kidnapping by pirates and his subsequent campaign against them is interesting because this is an incident that has been mentioned often but never analyzed this thoroughly.

This book is highly recommended not only for its ease of reading but also for the insights it offers into the relationship between military success and political power in the contemporary world.

AGAINST ALL ENEMIES: INTERPRETATIONS OF AMERICAN MILITARY HISTORY FROM COLONIAL TIMES TO THE PRESENT. Edited by Kenneth J. Hagan and William R. Roberts (Greenwood Press, 1986. 393 Pages. \$18.50). Reviewed by Doctor Charles E. White, USAIS Historian.

In this bicentennial year of our Constitution, this book offers "eighteen historical stepping stones across the history of the United States Army and, indeed, the nation." Each essay examines a particular period of our past; each is well documented; and each contains a bibliographical section for further reading.

During the past 200 years, the Army as an institution has remained basically unchanged. The concept of the citizen-soldier, the civilian control of the military, the complexities of national priorities and capabilities, the development of doctrine, and the continual search for a proper role and mission for the Army within the larger fabric of a dynamic society have all been part of our country's heritage, and all are discussed in this valuable book.

This book should be part of every professional development program. Far too many soldiers are captivated by the eloquent rhetoric of the so-called "military reform movement," which claims that it alone has the necessary objectivity to reform the military services. But as the

essayists clearly demonstrate, there has always been within the military services an intellectual legacy that far surpasses the naive and wishful thinking of academia.

In fact, this book shows that "reform" groups pose the greatest threat to our country's security, because their agendas generally impede progress and modernization. For this reason, if for no other, soldiers and civilians should read it.

MILITARY STRATEGY AND THE ORIGINS OF THE FIRST WORLD WAR. An International Security Reader. Edited by Steven E. Miller (Princeton University Press, 1985. 186 Pages. \$6.95, Softbound). Reviewed by Lieutenant Colonel David A. Rolston, United States Army.

This stimulating collection of essays analyzes the origins of World War I and draws interesting parallels between that war and the current East-West conflict. As the editor points out in his introduction, in today's environment it is time to study anew the events of 1914—the escalation from an isolated incident in a far corner of Europe to global war, the apparent loss of control of the situation by key decision-makers, and the crowding out of diplomacy by military exigencies.

The various essayists examine a number of miscalculations that led inevitably not only to war but to an unexpectedly long one of an unforeseen nature. The two key areas that are addressed are the industrial base and the "Cult of the Offensive."

This book covers many more causal factors in fascinating detail, each important and germane to today's world problems. It is good reading and it is important for those who want a better understanding not only of World War I but of the national strategy implications of today's foreign policy.

GUIDE TO UNITED STATES ARMY SPECIAL FORCES INSIGNIA, 1952-1987. By Leonard Martin, H.W. Snyder, and H.J. Saunders (Military/Naval Books (P.O. Box 162, Larchmont, NY 10538), 1987. 44 Pages. \$12.95, Softbound).

The authors trace the various types of insignia worn by U.S. Army Special Forces units from their birth on 20 June 1952 to the present. Of course, the most distinctive of those insignia has been the green beret, which was not officially authorized for wear until 10 December 1961.

Included in this book are shoulder-sleeve insignia, beret flashes, recognition bars, distinctive unit insignia, parachute ovals, and coins. Color is used throughout where it is appropriate, and the dates shown represent the period of time the individual insignia was worn; unit adoption dates may precede these dates.

More than 150 insignia are shown, all in reduced sizes because of space limitations. One page is devoted to illustrations that show how the insignia should be worn. As the first in a planned series that will be dedicated to the insignia of U.S. elite forces, this book gets the whole business off to a fine start.

RECENT AND RECOMMENDED

FORECASTING IN MILITARY AFFAIRS: A SOVIET VIEW. By Yu. V. Chuyev and Yu. B. Mikhaylov. Moscow, 1975. Translated and published under the auspices of the U.S. Air Force. 230 Pages. S/N 008-070-00456-9, Superintendent of Documents, \$6.50, Softbound.

VIETNAM: THE HEARTLAND REMEMBERS. By Stanley W. Beesley. University of Oklahoma Press, 1987. 194 Pages.

REACHING FOR THE STARS: THE STORY OF ASTRONAUT TRAINING AND THE LUNAR LANDING. By Stanley H. Goldstein. Praeger, 1987. 193 Pages. \$35.95.

THE OFFERING. By Tom Carhart. William Morrow, 1987. 305 Pages. \$17.95.

AN ANNOTATED BIBLIOGRAPHY OF THE NAPOLEONIC ERA: RECENT PUBLICATIONS, 1945-1985. Compiled by Jack Allen Meyer. Greenwood, 1987. 288 Pages. \$39.95.

IMPERIAL WAR MUSEUM REVIEW NUMBER 1. Published by the Trustees of the Imperial War Museum. Jane's, 1986. 112 Pages, Softbound.

THE ARAB-ISRAELI WARS, THE CHINESE CIVIL WAR, AND THE KOREAN WAR. By Roy K. Flint, Peter W. Kozumplik, and Thomas J. Waraksa. The West Point Military History Series. Avery, 1987. 130 Pages. \$18.00, Softbound.

THE GERMAN ASSAULT RIFLE, 1935-1945. By Peter R. Senich. Paladin Press, 1987. 313 Pages. \$39.95.

WORTH DYING FOR: THE PHILIPPINE REVOLUTION. By Lewis M. Simons. Morrow, 1987. 320 Pages. \$18.95.

From The Editor

SUBSCRIPTION RATES

Regretfully we must announce that our subscription rates will be increased effective 1 November 1987. We have managed to hold rates at their present levels since May 1980 by absorbing continually rising labor, printing, and postal charges, but we can no longer do so.

The new rates for all subscribers will be \$12.00 for a one-year subscription and \$23.00 for a two-year subscription. Foreign (non-APO) subscribers must add \$4.00 per year for each subscription to cover postal and handling charges. We use surface mail to get copies to foreign subscribers. We can send copies by air mail to foreign addresses, but at a much higher rate, which we will be glad to furnish to any interested foreign subscriber.

Single copies of the bulletin will continue to sell for \$2.50, plus \$1.00 per copy for foreign addresses to cover postal and handling charges.

To those of you who have active subscriptions, we offer an opportunity to extend or renew them at our present rates of \$10.00 for one year and \$19.00 for two years, plus \$3.00 per year per subscription for foreign subscribers. If you will let us know your desires before 1 November 1987, we will be pleased to accommodate you.

All of us here at INFANTRY thank you for your past support and look forward to serving the Infantry community in the years to come.

BACK ISSUES

We have a number of 1985 and 1986 issues on hand and offer them to you at \$1.50 per copy mailed to a U.S. or APO address. (Foreign addressees must add \$1.00 per copy for surface mail charges.)

If you will let us know the particular issues you want, we will do our best to get them to you. A few of the back issues are in short supply, so please get your requests to us as soon as possible.

COMING IN INFANTRY

"Countering Terrorism in the Trenches," by Lieutenant Forrest L. Davis.

"Auftragstaktik," by Captain Frank E. Kerkemeyer.

"Land Navigation: A Critical Skill," by Captain H. Stogner, Jr.



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