

Infantry

A PROFESSIONAL JOURNAL FOR THE COMBINED ARMS TEAM



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Infantry

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A country and government such as ours are worth fighting for, and dying for, if need be. (*William T. Sherman: Memoirs, 1875*)

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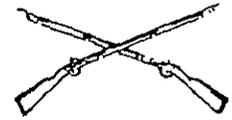
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Commandant's NOTE



Major General Edwin H. Burba, Jr.
Chief of Infantry

The Bradley Infantry Fighting Vehicle has been under attack by certain elements of the Congress and the media. I wrote this paper some time ago to clarify my own thoughts as I addressed these attacks in public and private forums. I've used it in testimony before Congress and in informing influential supporters and detractors alike. Parts of it were used in a much shorter article I prepared for the Armed Forces Journal several months ago.

I am reprinting it here in its entirety for several purposes: First,

I am hopeful that the field can use it as a simplified approach to tactically employing this marvelous fighting vehicle. Second, I am hopeful that it can be used to inform our soldiers that we have the finest fighting vehicle in the world today, and one that will survive on the high technology battlefield better than any other. Finally, I am hopeful that it will stimulate responses to the Infantry School from soldiers, NCOs and officers as we continue our dialogue in how to fight the Bradley force. We look forward to hearing from you.

Defeat of an enemy force, superior in numbers and equipped with weapons of equivalent technology, must be accomplished through maneuver warfare. The essence of such warfare embraces the avoidance of major frontal engagements where enemy combat power prevails and the initiation of friendly attacks along lines of least expectation and resistance where the enemy's combat power is emasculated and ours is substantially enhanced. At the lowest levels, these tactics are referred to as fire and movement, at higher levels as firepower and maneuver, and at the highest levels as maneuver warfare.

To accomplish these indirect tactics, infantry-heavy forces fix or at least control the movement of enemy first-echelon forces while artillery, air, and engineer units support them and freeze second-echelon forces through fire interdiction and barrier operations. While the enemy's attention is on these fixing, interdiction, and barrier actions, tank-heavy units, accompanied by protecting infantry, attack his vulnerable flanks and rear before he can react. Such operations unhinge enemy tactical integrity and provide opportunities for attack deep in the enemy's rear by division and corps constituted operational reserves.

A more precise snapshot of the maneuver aspects of these combined arms operations displays enemy target acquisition and weapons systems, offensive formations, and defensive entrenchments facing in one direction, and friendly attacks emanating from a different direction, normally the flank or rear. Such attacks avoid the enemy's superior strength while concentrating friendly strength against his weaknesses. Flank and rear attacks quickly lead to the destruction or

paralysis of the enemy's command posts and his artillery, aviation, engineer, and logistical support units. Without having taken on the enemy's superior combat force, friendly forces defeat him from within by desynchronizing his command and control and depriving his combat forces of critical firepower, maneuver and logistical support.

As indicated, there are two maneuver force underpinnings that allow these tactics to succeed. First, the enemy's first-echelon force movement must be fixed or at least controlled. Secondly, an agile maneuver force must be able to react more quickly than the enemy. The tank is clearly the preeminent weapons and mobility system for the maneuver force, and it has always performed its role well. The weapons of the infantry's M113 carrier and its organic troops have neither the range nor the lethality to perform the fixing function. Previously, tanks had to be used to execute this role and, thus, were deprived of the role that they do best — maneuver. When tanks were previously used to fix the enemy, our forces were deprived of adequate maneuver elements and were forced into attrition warfare. The enemy's superior numbers normally presented him victory. Tank-heavy forces are too precious to be used as the predominant fixing force.

With the Bradley Infantry Fighting Vehicle, the infantry now has the vehicle it needs to fix the enemy, freeing tank-heavy forces for maneuver and, thus, providing the Army with the opportunity to conduct maneuver warfare. Not only can the Bradley's TOW missiles destroy enemy tanks, its 25mm Bushmaster can destroy or

suppress its Soviet counterpart, the BMP, and its coaxial machinegun can destroy or suppress dismounted infantry. The range of these Bradley weapons systems also allows the infantry to occupy long range, dispersed, mutually supporting positions, arrayed in depth, on flanks along likely avenues of approach throughout the battle area. These positions deny the enemy complete use of his combat power by providing the directional orientation of his target acquisition equipment and weapons systems and brings the majority of our forces' combat power to bear on his weaknesses, the sides of his tanks and the flanks of his formations.

There are other premiums. The range of these weapons systems allows an extension of the umbilical cord between the infantry vehicles and the dismount elements. Previously, the location of both the vehicles and the dismount elements was a compromise between positions that would optimize each element. The positions completely favored neither the dismount elements nor the vehicles. Now, with the longer range weapons, vehicle dash speed, and improved armament and optics, both the vehicles and the dismounted elements can be placed in optimized positions. Furthermore, such positional flexibility allows dismounted infantry the opportunity for infiltration and ambush attacks and reverse slope and checkerboard defenses, "misdirection" operations implicit in maneuver defenses.

Once the enemy force's movement is either fixed or controlled, a tank-heavy force can quickly maneuver into its flanks and rear. The Bradley infantry also has important roles with the tanks during this maneuver. It performs reconnaissance and counterreconnaissance, clears restricted terrain, protects at night, and breaches obstacles. Further, it mops up bypassed enemy, seizes key terrain to maintain the momentum of the tank attack, and, importantly, destroys and suppresses enemy antitank weapons. Tanks alone are unable to perform these roles. The M113 armored personnel carrier's lack of cross-country speed and agility prevents it from accompanying the tanks, and its lack of mounted firepower to destroy enemy tanks and fighting vehicles compromises the maneuver force. Bradley infantry can effectively fight tanks, BMPs, and other armored vehicles, thus allowing brigade and battalion commanders to mass tanks for maneuver. As can be seen, Bradley infantry is as critical to the maneuver element as it is to the fixing force.

Concern has been expressed that Bradley dismounted strength has been reduced to unacceptable levels that prevent it from performing the roles just discussed. Even when the M113 personnel carrier was structured with an 11-man squad, there were only five maneuver soldiers. Five members of the squad were dismounted to perform fire support because the gunner with the .50 caliber machinegun could not perform that role without substantial reinforcement. The current Bradley squad with its six dismount soldiers dedicated to maneuver can perform infantry dismount roles as well as, if not better than, the five in the larger M113 infantry squad.

Other concerns have been expressed relative to the Bradley's capability to stay up with tanks during maneuver because of its light armor protection. The F15 aircraft is highly vulnerable to any ordnance that hits it; however, it derives its survivability from its speed, agility, and tactical employment. The same situation applies to the Bradley. Against light resistance by an enemy force such as a mechanized or tank platoon (3 or 4 vehicles) that is not dug in and does not possess combined arms support, the Bradley can fight in the same combat formation with the tank.

During a medium resistance situation, where the friendly force is faced with a company-sized element (10 to 15 vehicles) with combined arms elements supporting and dismounted elements in a hastily dug position, the Bradley is able to perform overwatch missions,

suppressing and destroying targets to allow the tanks to maneuver to break the integrity of the enemy's tactical dispositions. Once this is accomplished, the Bradleys can then join the tanks and continue the fight in the same combat formation. Against heavy resistance, where a battalion-sized enemy force (40 to 50 vehicles) is echeloned in depth, with security to the front, with combined arms support, and with all vehicles and infantry in dug-in positions, both the Bradley and the tanks will go into overwatch positions. From these positions, the tanks and Bradleys destroy and suppress the enemy to allow dismounted infantry from the Bradleys to move forward to conduct close overwatch and assault breaching missions. Once the assault breach is accomplished, tanks can move forward, exploit the breach, hold the shoulders, and allow follow-on tank and Bradley combat formations to continue the attack.

In a battalion task force area, many independent but related fire-fights occur. In some of these fights, Bradleys will be fighting within the same battle positions or formations as tanks. In other situations, they will be in long overwatch with or without the tanks. In each situation, conditions are dynamic and the Bradleys move forward or remain in defilade as the situation dictates. This is the nature of combined arms tactics that are subscribed to by infantry and tank forces throughout the world. Importantly, the Bradley can perform in all situations relatively impervious to artillery fire because its ammunition and POL are stored internally. Externally stored fuel and ammunition might increase survivability somewhat from direct fire interdictions but would degrade the vehicle's enormously important firepower and mobility functions considerably during enemy artillery engagements, which will be formidable and frequently experienced.

To capsulize, the defeat of an overwhelming echeloned force must be accomplished through maneuver warfare which, in conjunction with combined arms fire and barrier support, requires both a fixing force and a maneuvering force. Infantry-heavy forces must perform the fixing functions to free tanks for the maneuver elements. These fixing forces will also contain some tanks to perform reconnaissances in force, spoiling attacks, and local counterattacks. The maneuver element, consisting principally of tanks, will also contain some Bradleys to perform reconnaissance, security, clearing, breaching, and suppression missions. The M113 carrier force can neither fix the enemy nor perform the infantry functions required during maneuver because of its inferior firepower and mobility characteristics. The Bradley can perform both roles and perform them well.

The wisdom of the Bradley design has been validated in 19 high resolution wargames. Fighting as a member of a combined arms task force against overwhelming 3 to 1 odds (motorized regiment), in a full range of mission and terrain conditions, the Bradley has increased measures of total force effectiveness up to 100 percent over that of an M113-equipped force, the precise measure depending on the scenario. Importantly, the Bradley's contribution to the fight was over 200 percent that of the M113 in all cases. The Bradley force sustained up to 25 percent fewer casualties to indirect fire than the M113 force and reduced total task force personnel casualties by almost 20 percent in most cases. These increased capabilities allow Bradley forces to fix the enemy, freeing tanks and other Bradleys to seize the initiative through maneuver and shock action — roles that are the basic underpinnings of maneuver warfare doctrine.

In short, the Bradley, with its optimized firepower and mobility, working synergistically with the remainder of the combined arms force in the execution of a doctrine for which the force was designed, allows that force to win. Without the Bradley, the force frequently loses.

INFANTRY LETTERS



PLATOON TEAMS

In regard to Captain Joseph K. Miller's "The Platoon Team" (INFANTRY, January-February 1986, p. 14), I would like to make a couple of observations.

First, armored cavalry officers have long appreciated the merits of combined arms operations at platoon level. Until recently, all armored cavalry platoons contained a mix of scouts and tanks, which allowed for the combination of maneuver, firepower, and protection that Captain Miller cites in his article. Even under Division 86, regimental armored cavalry troops retain a mix of scouts and tanks to provide these same advantages. The main problem, that of leadership, is both the key to the successful operation of any platoon and a problem that will not be practical to overcome at platoon level. It is difficult enough to habitually attach companies and platoons to form task forces and company teams, let alone expand this to platoon teams.

Short of developing a "combined arms" branch composed of tankers and mechanized infantrymen, the creation of platoon teams will generally bring more problems than benefits.

If a commander is determined, however, to create platoon teams, it would be more effective to keep pairs of like vehicles together. If it is necessary to lead with tanks, lead with a pair of tanks, not just the platoon sergeant's former wingman, who is often the junior track commander in the tank platoon. What happens, for example, if the lead tank becomes mired, throws a track, or hits a mine and suffers loss of mobility? With unlike vehicles, the overwatching tank must expose itself to assist in recovery, weakening the available overwatching fires.

Finally, in the example Captain Miller cites, unless the overwatching tank platoon was asleep, the vehicles hit by main gun rounds less than seven seconds

into the engagement would have been enemy tanks and not Bradleys.

In spite of my objections to the creation of platoon teams as envisioned by Captain Miller, I am pleased to find articles on combined arms operations appearing as often as they do in your magazine.

EDWARD N. ROUSE, JR.
CPT, Armor
Watervliet, New York

MARKSMANSHIP

I agree with S.L. Walsh of the Marine Corps when he recommends that the Army return to a known-distance basic marksmanship program to train each soldier in fundamental marksmanship principles (INFANTRY, January-February 1986, p. 4). I have served in both the Marines and the Army, and my experience with the Marine marksmanship program was vastly superior to that with Army marksmanship training.

I recall that during Marine basic training, the recruits underwent a full two weeks of marksmanship training. One week consisted of classes and "snapping in"—the painful process of practicing stable firing positions in the kneeling, sitting, off-hand, and prone positions. The second week was live-fire practice on known-distance targets up to 500 yards away. The training culminated in a qualification day—shooting for score. No one can go through Marine Corps marksmanship training and not gain an appreciation of what a rifle can do at long range.

On the other hand, during my Army

ROTC advanced camp experience at Fort Bragg (supposedly a basic training equivalent for cadets), we trained and qualified with the rifle in a matter of *three days*. There was very little snapping-in, no dry-fire practice, and classes were rushed and unprofessional. Range coaches were silent spectators—not training aids to the soldier. The range consisted of silhouette targets from about 20 to 200 yards away, which were designed to "pop up" from dense foliage. This was intended to test the soldier's "target acquisition" ability. Unfortunately, many of these targets failed to pop up or were obstructed by the vegetation around them. Many cadets were given minimal qualifying scores by "nice guy" coaches just to get them off the range. In short, it was a disgrace.

In a way, I can understand the Army's concern for training soldiers under realistic conditions on the range. But such training is inappropriate for initial entry training. Skills such as target acquisition and engagement of targets during reduced visibility are important skills for the combat soldier. But for the basic trainee (or his ROTC counterpart) it is far more important to stick to the basics of marksmanship as the Marines do.

In my nine years of military service I have qualified four times as a rifle expert (three times in the Marines and once in the Army Reserve). Any proficiency that I have with an M16 I attribute to my Marine Corps training. The Army training has been, at best, a "going through the motions" proposition.

EDWARD PASCUCCI
Syracuse, New York

We welcome letters from our readers and print as many of them as we can. Sometimes it takes a while before we find room. But keep writing on topics of interest to our readers, and we'll do our best to publish your letters, sooner or later.

FROM THE OPPOSITION

Since Captain Wingo (INFANTRY, May-June 1985, p. 42, and March-April 1986, p. 7) and Captain Cormier and Ser-

geant Holmes (November-December 1985, p. 5) were allowed to suggest and support an extended FTX for Reserve Component (RC) units in your magazine, I believe your readers should also be allowed to digest the opinions of the opposition.

It is true, as Captain Wingo suggests, that some combat units will spend 10 days in the field, with some naturally spending more and some much less. But it is more a certainty that all combat units will experience, on a more frequent basis, the luxurious feeling of being pulled out of the field and then the apprehension of considering their repeated return to the field.

Two trips to the field create a far more realistic environment with far more training benefits. Realism means that the officers and NCOs are going to have to prepare for operations more than just once, and few would argue that a little more planning and work is involved when the troops are moved from the cantonment area than when they are moved from one spot in the field to another. And then there is the added leadership challenge of being able to pump the troops up for yet another go in the field after an enjoyable and much deserved R&R period.

Middle weekend breaks have really been bad-mouthed, particularly by Active Army officers who can't comprehend RC units' taking a break in the middle of their annual training period. (Active duty units and their commanders would be a trifle reluctant, I'm sure, to give up their 30-day leaves, free weekends, and training and athletic holidays for a 365-day stretch in the field.) The time spent away from training builds a sense of unity and morale in all armed forces personnel that is hardly equalled in the field, but it produces better field work.

These breaks are extremely beneficial to the leaders of RC units, who have time to pause and reflect upon the initial stint in the field and so to capitalize later on their earlier and good decisions, and to correct the errors that were recognized. And then, more important, the troops can greatly benefit and their morale can remain high, after their conscientious leaders have taken time to prepare themselves adequately for the second trip to the field with meticulous study and planning,

thorough reconnaissances and repetitious TEWTs.

Two report cards are better than one. Tactical and maintenance evaluations are more effective if the responsible soldiers and their leaders are able to correct any deficiencies in a matter of days instead of being forced to wait until another training period. While one trip to the field may give an operator, and possibly a neglectful first-line supervisor, a failing grade, a second trip provides them with an opportunity to achieve a passing score.

It's just too easy for leaders to inform their troops that when they're back in from the field, they're back for good. That's not realism. Annual training is, for RC units, the most important training period. Too many deficiencies, beyond on-the-spot corrections, will be noted at the end of an extended FTX to have to wait until another year to realize correct applications and impressions.

Middle weekends at annual training should be considered for their training value and not looked upon merely as an RC vacation. That weekend can divide two intense training opportunities, and the training can't help improving the second time around as a result of the middle weekend break. Realism means that units will go to the field to fight more than just once. Middle weekends allow us to train for that reality.

MARSHALL K. MADDUX
PSG
Nebraska Army National Guard
Falls City, Nebraska

NEED FOR SYMBOLS

The year of 1985 was one of incredible change for the 7th Infantry Division (Light) at Fort Ord. It was a year of conversion and of growth—growth not in numbers but in experience and potential.

This change was not limited to a new title and a new modified table of organization and equipment. These were simply the mechanics of conversion. The real change was in the attitude, the spirit, and the will to win of the Light Infantryman. The Light Fighter has become an elite warrior through a demanding developmental process in which equipment is

only a tool. It is the human element—the privates, NCOs, and officers—that has made the light infantry a success. And a success it indisputably is!

The light infantry fills a critical gap in our nation's defense network that must meet today's geopolitical situation. The 7th ID(L) can now deploy to a situation that is too large for a Ranger battalion to handle but that must be met with a faster response than a larger, heavier division such as the 82d Airborne or the 101st Air Assault Divisions can offer. The Light Fighters are prepared and ready to go, now.

The hard work and sacrifice of every soldier—from COHORT private to commanding general—who has brought the division to this state of readiness now deserves to be recognized and rewarded with some special symbols to show that they are of a special make—elite soldiers.

The first method of expression should be a unique beret—brown to symbolize the dusty hills of Hunter-Liggett, the sandy shores of North Africa, or perhaps the murky swamps of Central America.

Although a beret may not technically improve fighting ability, it does symbolize pride in a unit. (That can be confirmed by anyone foolhardy enough to try to remove one from the head of a soldier belonging to the Rangers, the paratroops, or the Special Forces.)

The second symbol should be a light infantry tab, to be incorporated into the division patch (see sketch). The 7th ID(L) bears little resemblance to the previous 7th Infantry Division, and this change



should be reflected in an updated divisional shoulder patch.

The Light Fighters of the division need some symbols. In spite of the active programs to encourage soldiers to attend Ranger, Air Assault, and other schools, a relatively small percentage of privates and junior enlisted men are actually given an opportunity to attend. And it is these very soldiers who project the image of the unit and these who want the symbols that can display their unit pride to the world. The 7th ID(L) is, after all, the prototype, original light infantry division of the Army!

General John A. Wickham, the U.S. Army Chief of Staff, said in his White Paper on the light infantry division that "accoutrements to foster the elite image of the soldiers in the light infantry division also must be designed and provided."

By authorizing these symbols, the Army will be recognizing the Light Fighters of the division for the commitment, the desire, and the willingness to fight and win that they have shown in this year of conversion. The symbols would be a multiplier of soldier power!

The cost of these symbols would be minuscule, especially when compared to the millions of dollars spent on other equipment, but the return in unit pride, morale, and esprit de corps would be incalculable.

VAN R. DODD
1LT, Infantry
Fort Ord, California

WOMEN AND THE MILITARY

Minerva: Quarterly Report on Women and the Military, in its fourth year of publication, wishes to consider manuscripts bearing on women's military and paramilitary activities in any part of the world in any time period.

Also of interest are papers dealing with the activities of female civilian support personnel—such as Red Cross workers—and of military wives. *Minerva* also publishes analytic and opinion pieces concerning gender-related military issues.

Please address correspondence to me

at 1101 S. Arlington Ridge Road, #210, Arlington, VA 22202, or call (703) 892-4388.

DR. LINDA GRANT De PAUW
Editor and Publisher

NIGHT ATTACK DOCTRINE

Recently, I had an opportunity to conduct an extensive literature search and subsequently to review a number of technical reports and articles from military periodicals on the subject of night attacks. I carried out this task with considerable interest because a few years ago, as a light infantry company commander, I was always looking for a dismounted night attack procedure that I thought would work in combat. I wasn't convinced that the doctrinal limited visibility attack described in FM 7-10, The Infantry Company, had much chance of succeeding in combat.

The present doctrinal night attack requires that too many cold, wet, apprehensive soldiers, acting as guides, remain for a long period of time close to the objective. Additionally, it is unlikely that all of the lateral movement, as squads and then individuals move forward and fan out inside the enemy's wire to occupy the probable line of departure (PLD), will go undetected by even a half-alert defender. Finally, the security advantage gained by communicating with wire does not seem to come even close to outweighing the troubles in using it.

The latest infantry company level doctrine, FC 7-14, Light Infantry Company Operations and ARTEP Mission Training Plan, dated 19 February 1985, provides company commanders with fundamental concepts and principles of how to fight light infantry. The offense chapter addresses six types of attack. It does not, however, address limited visibility or night attack, and the PLD does not appear on its list of control measures.

During my research, I came across two articles in particular, both from INFANTRY's May-June 1977 issue, that should be extremely valuable to the light infantry leaders of today:

In "A Lesson from the Past" (page 31), Captain Robert R. Harper, Jr., iden-

tifies and discusses the unit level keys to the successful night attacks employed by units of the 104th Infantry Division during World War II. During the period October 1944 to May 1945, the 104th Division conducted more than 100 successful night attacks.

In "New/Old Solution" (page 33), Captain Michael T. Dawson identifies and discusses a number of shortcomings he saw in the then-existing dismounted doctrinal night attack. He then described how a dismounted night attack would be conducted today by a unit using the night attack concepts of the 104th Division.

I recommend that you reprint these two articles. You would be doing a great service to the light infantry soldiers of the U.S. Army.

ROBERT G. SIMMONS
CPT, Infantry
U.S. Army Training Board
Fort Monroe, Virginia

EDITOR'S NOTE: Although we cannot reprint the two articles, we are pleased to provide a reference to them here. (Copies are available in most libraries.) In addition, we have an article on an illuminated night attack coming up soon, which we hope will be helpful.

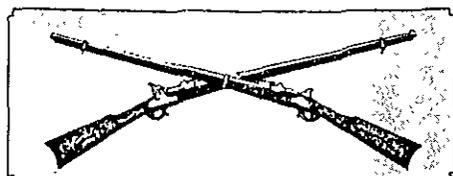
REUNION SHAEF

A year ago we began looking for veterans of Supreme Headquarters Allied Expeditionary Force (SHAEF) and, to date, have found 375 out of a possible 5,000 still living.

Our first reunion will be held 12-14 September 1986 in St. Louis.

Anyone who is interested in more information may write to me at the SHAEF Veterans Association, P.O. Box 42, Fair Haven, NJ 07701, or call me at (201) 842-4206.

CHARLES ALLEN PETERSEN



INFANTRY NEWS



THE DIRECTOR OF Combat Developments has furnished the following news items:

• **Battlefield Management System (BMS).** A Civil War quote, attributed by the historians to the Confederate General Nathan Bedford Forrest—"git thar fustest with the mostest"—still has relevance as we near the 21st century. A developing Army system called the Battlefield Management System, or BMS, will permit a commander to turn within an enemy's command and control cycle and to "git thar fustest with the mostest."

BMS will link the command elements of a maneuver force to each other and to their supporting elements—fire support, intelligence, logistics, administration, and the like—by an automated digital data network to improve the commander's ability to plan a battle, evaluate the available courses of action, and assure him that his orders are being implemented. (See INFANTRY, March-April 1986, pp. 9-10.)

The key to the development of the BMS is the automation of certain critical functions to save the commander time and help him make decisions. Accordingly, the Infantry School is now conducting an analysis to determine which tasks and functions have potential for automation. A field evaluation, done in conjunction with the Combined Arms Center, will be held to validate the requirement. The focus for the infantry will be on dismounted forces and target acquisition and on the hand-off requirements for Echo Company.

Automated battle management is possible because of the digital computer and its ability to send vast amounts of readily understood data in forms that apply to each level of command. BMS will use interactive hand-held displays, digitized maps and graphics, and touch-sensitive screens linked to target acquisition and navigation devices. It will be manportable so that a commander will not be tied to

a particular place or vehicle. In mounted operations, BMS will complement a vehicle's weapon systems.

To make the best possible use of BMS, significant changes may be required in doctrine, organization, training, and materiel developments.

• **Equipment Items.** The Infantry School is presently pursuing the development of high quality clothing and individual equipment items for the individual infantryman. This is a radical departure from the previous approach that looked at equipping all soldiers with identical items. Two examples of the new developments are a combat glove and an intermediate sleep system.

The proposed combat glove is intended for issue as a supplement to the present light duty glove for close combat forces. It must provide protection in either dry cold or wet cold battlefield environments and under conditions that require better durability and dexterity than the current light duty glove offers. The proposed glove must provide protection in a range of temperatures from plus 60 degrees Fahrenheit to zero degrees Fahrenheit.

The intermediate sleep system is proposed as a one-for-one replacement for the present intermediate cold sleeping bag. It will be constructed using state-of-the-art advanced designs that benefit from recent improvements in synthetic materials. A tentative basis of issue includes all close combat forces that operate in basic cold regions (Climatic Zones III-VI).

• **BOSS.** The Infantry School wants a battalion commander to be able to "see over the next hill" with real time imagery. In short, this means he needs an unmanned aerial vehicle (UAV) equipped with a television camera to operate over the enemy's lines and send back to him live television pictures, via a data link, of events in his area of influence.

This UAV, called the battalion operated surveillance system (BOSS), will be

a small, semi-recoverable, low cost device. Its electronics will consist mainly of off-the-shelf non-developmental items such as a video camera. Once the BOSS is fielded, it should prove of great assistance to a battalion commander on the modern battlefield.

• **CIBT.** The Infantry School is embarking on a series of force development tests and experimentations (FDTE) called the contributions of infantry to the battle test (CIBT) to investigate and document those contributions. The tests will be conducted by the Army's Combat Developments Experimentation Center at Fort Hunter Liggett, California.

The first phase of the CIBT is scheduled to take place this fall and will examine mechanized infantry contribution to the combined arms team. Multiple repetitions of movement to contact and attack scenarios will be conducted during the day and at night by tank company and company team forces against an appropriate threat motorized rifle unit. The battlefield environment will be as realistic as test methodology and troop safety will permit. During the exercises, the friendly force will meet obstacles that must be breached and wooded areas that must be traversed.

The exercises will focus on any advantages that accrue to a combined arms team as a result of the infantry performance in those situations as well as in close and long overwatch roles. In addition, the FDTE will investigate any differences in command and control between a pure tank force and a combined arms force, the relative abilities of each to generate combat information, and any differences in the way those forces employ, coordinate, and concentrate direct and indirect fires.

Phase I record trials will run from about 1 October through 14 November 1986, with a test report to be published early in February 1987.

• **XM4 Carbine.** The XM4 is a pro-

posed new weapon that will replace selected .45 caliber and 9mm pistols, all submachineguns, and selected 5.56mm rifles carried by unit leaders, crew-served weapon gunners, vehicle crewmen, and radio operators. (See *INFANTRY*, January-February 1986, page 9.)

The XM4 is a compact, lightweight weapon designed for personal protection against dismounted targets at ranges out to 300 meters. It will use the same ammunition as the M16A2 rifle, and some 75 percent of its parts will be common to that rifle. It will feature a three-round burst mechanism, a telescoping buttstock, and a shortened barrel that will have the same twist as the M16A2 rifle. It will be 30.2 inches in length and will weigh 5.9 pounds; its barrel will be 14.5 inches long.

• **SCORES.** This scenario oriented recurring evaluation system (SCORES) gives the combat development community an evaluation technique and a framework for identifying needed improvements and for addressing questions raised about organization, doctrine, training, and materiel.

A TRADOC standard scenario consists of general, operational, and dynamic scenarios. The general scenario depicts an area, threat and friendly forces, and the situation leading to the introduction of U.S. forces into that area. The operational scenario presents the initial position of the forces in the area and the operational plans of both friendly and threat forces. The dynamic scenario relates the day-by-day locations, task organizations, and battle descriptions; it also contains gains and losses of personnel and equipment and the subsequent analysis of that data.

All TRADOC combat development studies or analyses will use TRADOC standard scenarios. These scenarios are required for cost and operational effectiveness analyses (COEA), mission area analyses and other applicable combat development studies, development and review of TOE and related organizational documents, priority and trade-off analyses, system program reviews, and force modernization concepts and doctrine development.

THE WIDESPREAD USE OF lasers in training has increased the potential for injury to soldiers. Accordingly, all soldiers who handle laser devices must know how a laser operates and how laser energy can produce injuries.

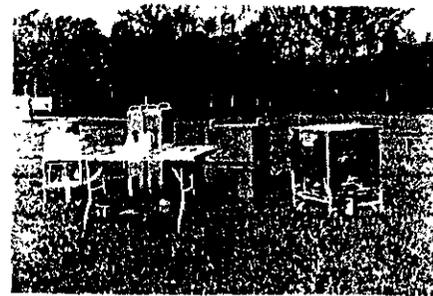
Field military lasers are used mainly as rangefinders, target designators, and target illuminators. Direct beam hazards exist when soldiers are within the laser beam, either at the target or between the target and the laser, or even well beyond the target if a backstop is not being used. Binoculars, a battery commander's scope, or a telescopic sight in an armored vehicle all increase the danger because, in effect, the magnifying power of the lenses in those devices bring the viewer closer to the laser.

Reflective beam hazards occur when a reflecting surface is flat enough to maintain the high parallelism of the primary beam. Thus, soldiers should use caution when they are around windows in built-up areas, glass surfaces on combat vehicles, or still ponds of water.

Most laser safety measures are common sense procedures:

- Personnel should keep out of the direct beam path and watch for any reflected beams from other areas.
- Lasers should be treated as direct fire, line-of-sight weapons, similar to rifles and machineguns.
- Lasers should always be pointed downrange, especially when batteries are installed.
- Batteries should be disconnected when a laser device is not being used and stored separately from the device itself.
- Safety switches and safeguard covers should be kept on the laser devices when they are not in use.
- The devices, when not being used, should be properly secured.
- Most important, soldiers should always consider laser devices dangerous, for invisible bullets can be as dangerous as the real thing.

A TEST TEAM FROM THE Army's Combat System Test Activity at Aberdeen Proving Ground recently completed first article/initial production testing (FA/IPT) of the company level field feeding kitchen (CLFFK).



The CLFFK and its components.

The system is designed to support company sized units when they operate either without field kitchens or from dispersed field locations where centralized field feeding support is not available. It provides sufficient water, beverages, equipment, and fuel for the preparation and serving of 200 complete hot T-ration meals within two-and-a-half hours. It can be operated by one cook.

The system also includes remote food carriers (RFCs), which can be used to transport enough T-rations to feed 24 soldiers at remote sites.

The testing program included fifteen 100-mile road marches, low temperature environmental conditioning of the RFC, and other factors. More than 400 military and civilian personnel assisted the test crew on two occasions by consuming T-ration meals.

The CLFFK can be transported on the HMMWV, the CUCV, or a five-ton M-series truck. It can be loaded and unloaded by two soldiers.

THE VIETNAM VETERANS National Medal is now available for purchase from the United States Mint.

The bronze medal, which is available in either a 1.5-inch or a 3-inch diameter size, honors the courage and dedication of the men and women of the United States armed forces who served in the Vietnam conflict.

The 1.5-inch bronze medal, listed as Number 685 on the Mint's medals list, sells for \$2.00 over the counter at the Mint's sales areas in Washington, D.C., Denver, Philadelphia, and San Francisco. It sells for \$2.25 if ordered by mail.

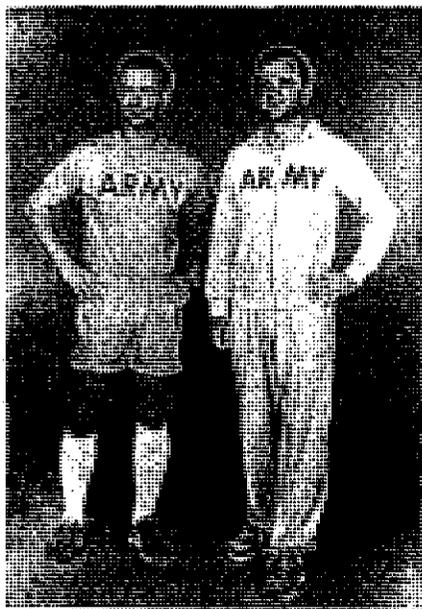
The 3-inch bronze high relief medal, Number 686, sells for \$15.00 over-the-counter, or \$16.00 by mail. A money

order or check made payable to the United States Mint should be directed to the United States Mint (Medals), P.O. Box 500, Philadelphia, PA 19105.

Individuals from another country ordering the medal should make their remittances payable to the United States Mint either by an international money order or a check drawn on a U.S. bank and payable in U.S. currency.

SOLDIERS IN BOTH THE Active Army and the Reserve Components can buy a commercial version of the newly designed physical fitness uniform from main post exchanges and clothing sales stores.

The new warm-up style, unisex uni-

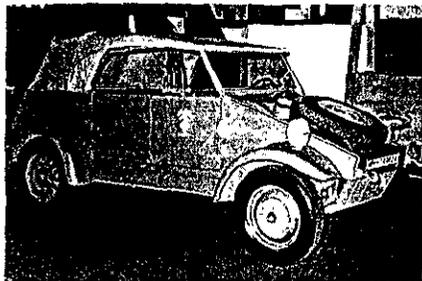


form, which recently received approval for distribution and sale, offers a longer wear life than the current gold-black version. The gray uniform consists of sweat pants (selling for \$12.95), a hooded sweat shirt with pockets and full-length zipper (\$19.95), nylon-lined shorts (\$7.95), and an athletic shirt (\$5.95).

THE DIRECTOR OF THE National Infantry Museum has given us the following news items:

A German *Kubelwagen* has been added to the Museum's World War II section (see accompanying photograph). It was used by the Afrika Corps and has

been restored to its original appearance. It is a Volkswagen Type 82, the original of which was designed at Adolf Hitler's request by the noted automobile engineer, Dr. Ferdinand Porsche. Weighing only half a ton, it was easy to handle and had an excellent cross-country capability, which made it particularly useful in the desert. Eventually, this type vehicle became the most widely used and best known German vehicle of the war period.



Kubelwagen

The artillery pieces that are on display outside the main Museum building have been repainted and rustproofed. A new addition to this group is a Russian 85mm antitank gun.

Another outside display, the "Chattahoochee Choo Choo"—the historic narrow gauge railway engine that was used to transport students and others around the post before its retirement in 1946—has had its roof replaced. The engine pulled eight coaches holding a total of 212 passengers and moved them to and from the outlying ranges and training areas. This particular engine is the only known remaining locomotive of the 305 that were produced for the American Expeditionary Force in France in World War I. The observation car that is displayed with the locomotive was built in 1935 to transport distinguished visitors.

The Museum has continued to acquire a number of significant items. For example, the colors of the 331st Infantry Regiment were presented by Lieutenant General (Retired) Robert H. York, a former Fort Benning commander. And a World War II DUKW ("duck," a two-and-a-half ton amphibious truck) was acquired with funds generously supplied by the Fort Benning Officers Wives Club.

Another highly prized addition is a large bronze bust of General Douglas MacArthur that was cast in 1951 by the artist Julius Hackworth. Among the other

items recently acquired are a folding Japanese paratrooper carbine that was used by a Japanese airborne soldier during a combat jump onto Leyte in December 1944, a Japanese flag, a Nambu pistol, a Chinese canteen taken in September 1952 at Baldy Knob in Korea, an M-13 light instrument with its protective cover, medals that belonged to the late General William Simpson, a World War II British paratrooper's smock, a U.S. paratrooper's rope, a Guatemalan paratrooper's qualification badge, books, insignia, photographs, and uniform pieces.

A special exhibit titled "Infantrymen Kill Tanks and Have for Seven Decades" was installed in Infantry Hall for the Infantry Conference that was held in April. The exhibit featured a number of U.S. and foreign antitank weapons.

The Museum's volunteer guides are assembling items for a "Haversack Show and Tell" program for presentation to school children.

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, Georgia 31905-5273, AUTOVON 835-2958, or commercial 404/545-2958.

THE TROOP SUPPORT COMMAND'S Belvoir Research, Development and Engineering Center has opened a new hotline — AUTOVON 354-5120 — to provide help for soldiers who have questions about supply distribution equipment, water and fuel supply systems, and heaters and air conditioners.

The Logistics Hotline is a 24-hour, seven-day-a-week service. A caller's question is forwarded to the Center's equipment experts for an answer. Follow-up calls and even on-site visits will be made until an acceptable solution is reached.

FORUM & FEATURES



Advice to Junior Officers

LIEUTENANT COLONEL PATRICK AUBERT, French Army

In a unit, the arrival of a young officer fresh from school is always a welcome event. It quite often results in various rites of passage and other forms of amusing harassment from the oldtimers.

There is a more serious aspect to this event, however, concerning mainly the commander, and that is the integration of this young man into the "team."

If you are a young officer about to join a unit, there is some advice I would like to offer you.

First, you can be sure that your company commander is very happy to have you. But he is also aware that a certain number of problems, sometimes serious but always awkward, can occur during your integration into the unit, and he will do all he can to prevent them. His immediate interest is to have a unit that functions smoothly, and that means having people in it who work well together without conflicts among themselves. (This does not mean he will not exercise good discipline. After all, he has an image to maintain with his superiors.)

Thus, conscious of your potential as well as your inexperience, he must merge the long-term interest of the Army with the short-term interest of his unit. He must give you the best professional development so that you can work to your maximum potential in the future. It is one of his duties.

In addition to his personal action to guide you from above, he must rely on a

solid experienced NCO to guide you from below. It is exactly this NCO—together with the company first sergeant and other headquarters NCOs—with whom you may come in conflict. Thus, after reporting to your unit, you can expect a certain amount of advice from the commander on how to work with NCOs. In the same way, your company commander will have talked with the NCOs earlier about how to work with you. Don't forget this, because *they* will not, and they will do what he has said.

After this first introduction, you will be on your own as a platoon leader. You will have to navigate among the obstacles, and your attitude alone will determine whether you are accepted or rejected.

BACKBONE

First, you should understand that the backbone of any army is its corps of NCOs. The commander knows this better than you do and trains them accordingly. What you know in theory, and maybe do not always know very well, your NCOs may have been doing for a long time. As a result, they know how to put the theory into practice better than you do. In executing the commander's orders, and also in doing what is normal for them, the NCOs will offer you a discreet helping hand. Watch for it, and accept it graciously. Listen to them. Take their advice into

account, and don't hide behind your rank to dictate the way things are to be done. Seeking advice from subordinates is never a weakness. On the contrary! The NCOs will consider it a sign of your confidence in them. But never compromise yourself.

In brief, be yourself, sure of your abilities but also conscious of your weaknesses. Don't try to change the world right away; rather seek to understand why things are done in the platoon the way they are. If the answer does not satisfy you, then develop your own solution and be prepared to accept any criticism it may bring. If it is sound, it will be well accepted. In this manner, you will gradually earn the confidence of your NCOs. And it is exactly this confidence that, with time, will permit you to assert yourself and then to prevail.

This is your goal. You will know you have achieved it when you feel you are accepted for yourself and not for your rank. Achieving that goal, which takes longer in peacetime than in wartime, is a cumulative process, the duration of which depends on the circumstances, your personality, and your competence.

As a matter of fact, this period corresponds with your search for your personal style of command in order to establish your authority. This is normal. All of your senior officers had to go through the same process.

This, then, is the way to succeed. But what if you take a contrary attitude: What

if you fail to consider the NCOs' advice? You must then be prepared to navigate in rough seas.

If you stubbornly reject the NCOs' efforts to help, you will reach the point of a total breakdown in communications. In such a circumstance, the NCOs will fall back on the old soldier's philosophy of doing only what is called for in the regulations, but without taking any initiative or questioning any unwise decision you may make.

They will wait. In summary, you will fight alone. They will anxiously watch your first challenging situation to see what will happen. In most cases, the company commander will know the situation in your platoon. This makes it a negative point for you, even if your youth and inexperience are taken into consideration.

You must therefore change your attitude as soon as possible. If you don't you will find yourself working in an increasingly hostile environment, one that is not openly visible. This makes your simple day-to-day mission much more difficult. You cannot do everything by yourself, and you can no longer afford even the slightest error. Unless you are a magician,

your failures will occur more and more frequently. Pretty soon, whatever happens, only you will be held responsible. Don't turn to your platoon sergeant now, because he is likely to reply coldly, "Sir, you did not tell me."

It is not too late, however. In spite of a rough start, you can still change your attitude and overcome the barrier without major damage. But if you continue, be careful, for you will find yourself labeled by your superiors as well as your peers. Your rating will be low because you are a thorn in the side of the unit. Furthermore, because of the abnormal conditions under which you have been working, you will not receive the on-the-job development you must have as a junior leader. And this deficiency will follow you throughout your career.

You must keep in mind that I have described the process up to the ultimate stage—just before the battalion commander steps in. Such a situation benefits no one, and it must be avoided at any price. Who is responsible for avoiding it? Everybody.

The company commander's actions are of prime importance, of course, because

he has to establish the best conditions for your development. This is one of his main responsibilities. The senior NCOs also have their part to play in that process. But you have to do your part, too—not only as an object but as a subject. That means your integration into the company is also your responsibility.

Let's say you do succeed and go on to become a good officer. In that case, my final piece of advice to you is to remember all of this when you, in your turn, become a company commander responsible for developing junior officers and integrating them into your company.



Lieutenant Colonel Patrick Aubert is the French Liaison Officer to the U.S. Army Infantry School and Center. He has served in various positions in his army and commanded the Infantry Wing at the Canadian Combat Arms School Detachment in Québec for three years. He is a graduate of the French Staff College and the U.S. Infantry Officer Advanced Course and Airborne Course.

Army National Guard OCS

LIEUTENANT COLONEL DUNCAN M. THOMPSON

State officer candidate schools are the primary sources of junior officers to fill vacancies in the Army National Guard. Yet few people know about these schools and how they operate.

Between World Wars I and II, securing officers for the Army National Guard was relatively simple. The requirements for a commission in those days were not as stringent as they are today, and the standards were not established at such a high level of command.

After World War II, during a period of

reorganization for the Army National Guard, officer vacancies were filled mostly by experienced combat veterans and by directly commissioned veteran enlisted men. With the passing years, however, the source of qualified veterans became generally exhausted, and most new officers were commissioned through the 10-Series extension course of the United States Army. Although this was an excellent course of instruction, it did not provide any way of determining the leadership abilities of the individuals enrolled.

And other sources of officers—ROTC, U.S. Army Reserve, officers separated from active duty—contributed an insufficient number of officers to meet the needs of the Army National Guard. (Only the Commonwealth of Massachusetts had a program—the School of the Infantry—designed to produce junior officers for its Army National Guard.)

Efforts began in 1949 to establish state officer candidate schools to teach the military subjects, including the 10-Series course, while at the same time providing



Members of the Ohio Army National Guard in OCS training at Fort Benning.

a resident-type program designed to evaluate the leadership traits of potential officers for the Army National Guard. Although the initial proposal to establish such schools was approved in 1950, only four states (New York, Massachusetts, California, and South Carolina) responded favorably. Their plans were approved and their schools established in 1951. Later on, when Federal funds were secured for the support of schools, the other states eventually agreed to join the program. By 1963, a state OCS had been established in all states except Alaska. That state's OCS began operating in 1976.

These schools are conducted under Section 504, Title 32, United States Code, as amended by Public Law 88-662, dated 3 October 1964. The state officer candidate schools have evolved into state military academies, of which they are now a part. The academies also offer commissioned officer courses and noncommissioned officer courses of the NCO Education System (NCOES).

Presently, Federal funds are provided for two full-time technicians for each academy, some equipment and training aids, and the instructional material prepared at the United States Army Infantry School. Field manuals and subsistence for weekend assemblies and annual training periods are also provided, along with a limited amount of money for facilities.

All other funds come from the individual states.

The programs of instruction for the courses taught at the academies are prepared and published by two Active Army service schools: The U.S. Army Infantry School for OCS and the Sergeants Major Academy for the NCOES courses. All of the programs of instruction are approved by the Commander, U.S. Army Training and Doctrine Command, and the Chief of the National Guard Bureau. The Infantry School oversees the general conduct of the OCSs and grades the student examinations. Active Army major commands conduct annual accreditation inspections of the academies.

VARIED

State military academies accept students for the officer candidate school program from the Army National Guard, the Army Reserve, and the Active Army. (The students from the Active Army are not commissioned upon graduation; they receive certificates of completion.)

Candidates enter the state OCS program from varied backgrounds. Men and women who hold doctorates in their particular civilian fields and soldiers whose formal education meets only the minimum college education requirements have all

received their gold bars through this program. Candidates with the minimum one year of National Guard military experience have been enrolled alongside students who hold the Combat Infantryman Badge. Attributes common to all successful state OCS candidates, however, are leadership ability and motivation.

The year-long program of the state OCS is operated in three phases.

Phase I consists of a two-week annual training period. (Some state military academies conduct "orientation" OCS training during weekend assemblies immediately before Phase I.) This phase of intensified training is conducted at an Active Army post or at a state Army National Guard training site. A great deal of pressure and stress is created during this initial phase. (If a candidate cannot, or will not, function under the types of pressure and stress to which he is subjected during the initial phase, it is a fair assumption that he will not react calmly to the pressure of a combat situation.)

The basic subjects focus on military leadership, drill and command, and weapons training. Each candidate is rated, graded, prodded, examined, and given every opportunity to prove himself in positions of leadership within the squads, platoons, and companies. The candidate is lectured, counseled, and physically tested. Most of the candidates who drop

out of the state OCS program do so during this first phase.

Phase II of the program, which follows this annual training period, consists of 11 separate weekend training assemblies, one per month for the rest of the year. To continue training the candidate to function *under pressure*, this phase is also made stressful.

The academic subjects taught are map reading and land navigation, additional weapons of the infantry, combined arms, personnel and logistics, maintenance, and the Battalion Training Management System (BTMS). Also, in this phase, training is conducted in basic operations and tactics, communications and electronics, and military support to civil authorities. The program of instruction meets all of the requirements of the Military Qualification Standards (MQS I) program.

Military leadership training is intensified during this phase, and candidates are constantly rotated within the command positions of the class. Candidates are given tasks and missions to accomplish within certain time constraints, so that they can be constantly evaluated and counseled on their abilities, traits, and accomplishments, as well as on their failures. And through the use of an honor code and a candidate honor council, they are instructed in ethics, discipline, and the

Uniform Code of Military Justice (UCMJ).

Physical training is also a constant factor during the program. All candidates, men and women, *must achieve and maintain* the same standards—those that are expected of an infantry second lieutenant. Their physical training program includes exercises, terrain marches, rappelling, swimming, and combat oriented field training exercises.

Phase III is conducted during a second two-week annual training period, also at an Active Army or state National Guard facility. In this phase, all of a candidate's training comes together. Everything he has learned and been exposed to in the previous year is put to the test. The training consists of operations and tactics, combined arms operations, and patrolling, and includes two tactics examinations and a lengthy field training exercise. The candidates are expected to demonstrate not only their tactical abilities but also their keen understanding of OPFOR tactics, equipment, weapons, and abilities. In brief, candidates must show that they can perform in a combat environment as infantry second lieutenants, or they do not graduate.

Throughout the state OCS program, candidates are constantly reminded that theirs is a *team effort*. "Cooperate and Graduate" is their guide. Making the best

use of limited assets is constantly stressed. Also, throughout the training year, oral and written communication is taught, performed, and practiced.

The standards of the state military academies are high. The state OCS program is long and difficult, and deviations from the standards are not condoned. Without dedication and persistence, a candidate will not make it to graduation and commissioning.

The sole function of the Army National Guard State OCS program is to qualify soldiers, through an intensive course of leadership evaluation, academic study, and physical training to accept appointments as second lieutenants in the Army National Guard and the United States Army Reserve. State military academies are the most cost effective means of producing second lieutenants for the Reserve Components of the United States Army.



Lieutenant Colonel Duncan M. Thompson is commandant of the Hawaii Military Academy, Hawaii Army National Guard. He received his commission from the Infantry OCS at Fort Benning in 1969 and served two tours in Vietnam. He has also taught tactics to OCS classes at the Alabama Military Academy.

Preparing for Airborne Training

CAPTAIN DANNY L. GREENE

Confidence and toughness are two traits that leaders must possess if they are to succeed. One of the finest schools available in which to build these fundamental leadership characteristics is the U.S. Army Airborne School at Fort Benning. The

three-week Basic Airborne Course stresses mental and physical toughness and confidence in oneself and one's equipment.

Although a wide variety of officers, enlisted personnel, and cadets attend the course, many of those who volunteer ei-

ther do not complete the course or are turned back as soon as they arrive, for various reasons. As a result, the spaces reserved for them are wasted, and they do not get the training for which they volunteered.

This waste is usually caused by the applicants' failure to prepare themselves physically and mentally for the challenges of the course or by their failure to take care of the necessary administrative matters.

Physical conditioning is vitally important. The course is rigorous, and the students are on their feet almost continually throughout each training day. The first thing an applicant must do, therefore, is to honestly assess his own physical stamina and take any remedial action that may be needed. The Army Physical Readiness Test (APRT) is the yardstick used to determine that fitness, and anyone who wants to attend the course must take the APRT not more than 30 days before the date on which they apply for training. The minimum standards that must be met on the test are those for the 17-25 age group, regardless of the volunteer's actual age. Those standards are:

- Pushups—40 in two minutes for men; 27 in two minutes for women.
- Situps—40 in two minutes for men; 27 in two minutes for women.
- Two-mile run—17 minutes, 55 seconds for men to complete the run; 22 minutes, 14 seconds for women.

In addition, although this is not now mandatory, a volunteer should also be able to execute six good chinups (eight modified chinups for women) by the time the class starts. This exercise is considered important because it is similar to the motions a parachutist must use in controlling a parachute.

Since a volunteer's physical condition can change between the date of this test and his actual reporting date, each volunteer must pass a verification APRT within the 15-day period before that reporting date.

Volunteers who must leave their units for other duty or for leaves before airborne training and cannot take the verification APRT within the 15-day period must pass it immediately before leaving their units. And they must maintain that level of fitness up to their reporting date. No volunteer will be allowed to begin airborne training without proof of this verification test (DA Form 705, APRT score card).

Just meeting the physical fitness entry requirements will not guarantee that a volunteer will have no problems in the

course's PT sessions. But a properly administered APRT (with the emphasis on *properly*) is an excellent indicator of a person's fitness for airborne training. Regardless of their APRT performance, students who exhibit poor physical conditioning during the training will be dropped from the course.

Physical training is conducted daily during the first two weeks of the course, and students must "qualify" by being able to complete the exercises and the distance run each training day.

TYPICAL

A typical physical training session during the first week looks something like this:

- Six chinups (eight modified for women).
- Five assorted stretching exercises.
- Ten repetitions of the side-straddle hop.
- Ten repetitions of the four-count pushup.
- Ten repetitions of the four-count situp.
- Ten repetitions of the knee bender.
- Ten repetitions of the body twist.
- A run of 2.5 to 3 miles in platoon-sized formations at a pace of 8.5 to 9 minutes per mile for men and 10 minutes for women.

During the second week, the number of chinups is increased to seven for men, ten modified for women. Exercise repetitions are increased to 12, and run distances to 3 or 4 miles, with the pace unchanged.

It is important to understand that these standards represent the minimum physical demands placed on the students. All training conducted during the course is strenuous and physically demanding.

In addition to physical conditioning, a good mental attitude and a sincere desire to complete the training are two of the most important attributes an airborne volunteer should have if he is to succeed. Students who lose their motivation and determination to "make it" invariably drop out for one reason or another.

There is no numerical way, of course, to measure a soldier's level of mental preparedness. An airborne volunteer must judge this by evaluating himself. But a

proper mind-set throughout the course is absolutely essential. After all, jumping out of a high-performance aircraft at 125 knots, 1,250 feet up is not something people normally do.

When prospective students report to Fort Benning, they must be wearing seasonal Class A or B uniforms, with proper shaves and with haircuts within U.S. Army standards. And they must make sure they have with them everything that is required, including records, clothing, and equipment. (They must report not later than 1200 on the reporting date for their class to the S-1, 1st Battalion, 507th Parachute Infantry, The School Brigade, Building 2748, Fort Benning).

First on the list of things each must have is a current medical examination that shows he is qualified medically for training under the provisions of AR 40-501. Although the current regulation states that a volunteer's medical examination must have been given no more than 12 months before the reporting date, this requirement has been superseded. The validity period for airborne medical examinations is now 18 months.

For an airborne medical examination to be valid, Block 5 of Standard Form 88 must indicate that the purpose of the exam is for airborne training, and Block 77 must specifically state that the volunteer is "qualified for airborne training."

Volunteers over 35 years of age must secure an electrocardiogram (EKG) and a medical age waiver and produce these along with their medical examinations when they report.

All airborne students, with the exception of medical and dental corps officers, must have at least 12 months of active duty remaining after completing the course. Officers who do not meet this requirement must request extension of active duty under the provisions of AR 135-215. Enlisted volunteers must extend or reenlist under the provisions of AR 601-280.

Volunteers who report without the proper documents cannot be accepted for training. The following is a checklist that can be used as a guide:

- At least 15 copies of orders and/or DA Form 1610 with fund cite.
- Valid physical examination, with EKG and medical age waiver for volunteers over 35.

- Valid APRT score card (DA Form 705).

- Valid verification APRT (also on DA Form 705).

- Finance records for those reporting to Fort Benning in a PCS status or attending airborne training TDY enroute to another duty station. Others need not bring finance records.

Although DA Pamphlet 351-4 (changes to which are pending) lists the clothing, equipment, and uniform requirements for the course, students should report with the following items as well:

- Five pairs underwear.

- One sweat band for helmet liner.

- Three towels.

- Two wash cloths.

- Two pairs eyeglasses, if required. (Military issue glasses are recommended because of their durability. Non-issue glasses must be made of shatterproof material.)

- Boot-shining gear.

- Toilet articles.

- Appropriate civilian attire for off-duty hours.

- About \$100 for incidental or personal expenses.

Volunteers who truly want to earn those

silver wings will prepare themselves in these areas and will overcome the mental and physical obstacles of the course. Like countless thousands before them, they will find that they have an inner strength that they have never tapped before. The end result will be a prouder, more confident soldier and a stronger, better prepared Army.

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Heavy Battalion Trains

CAPTAIN STEVE BRASIER

The Army's AirLand Battle doctrine has brought about many changes in its combat service support (CSS) concepts. These changes are designed to allow better support of the forces while it is conducting tactical operations. The most fundamental CSS organizations — those found within maneuver battalions — have also undergone some changes to allow for the best use of the available CSS assets.

Students at the U.S. Army Infantry School ask many questions about the CSS assets of a heavy battalion and about the best way to organize and employ them. By posing and attempting to answer some of these questions here, perhaps I can clarify some of the fundamental considerations in designing and employing a battalion's combat service support.

What are "trains"?

Any grouping of personnel, vehicles, and equipment for the purpose of providing combat service support to a unit is called "trains." The design of trains is intended to make them most readily

available to a unit but with the least possible exposure to damage from enemy action. They are normally employed in combat organizations from company through brigade and usually operate from support areas. Maneuver battalions always organize trains.

How should a battalion's trains be organized?

The AirLand Battle concept of non-linear maneuver dictates that battalion trains be echeloned. Echelonment not only provides immediate support and more flexible usage but also increases the survivability of a unit's logistical assets.

A battalion's CSS assets are divided into four echelons — company trains, combat trains, a unit maintenance collection point (UMCP), and field trains.

The composition and operational control of the battalion's echeloned trains are determined by the commander on the basis of an analysis made by his staff during the planning phase of an operation. A battalion should prescribe a base line for each CSS echelon in its standing

operating procedures (SOPs).

Where should a battalion's trains be located?

There are several criteria to consider. The trains should be:

- As close to the FEBA (forward edge of battle area) as is tactically sound.

- Convenient to the units served. (There should be both a main supply route and alternate supply routes so that the forward units can reach the trains rapidly. The routes to and from and within the field trains should be planned to avoid congestion.)

- Away from the enemy's main avenue of approach.

- Far enough away from the combat elements so that they do not impede a tactical unit's freedom of movement.

- Beyond the range of cannon artillery. (This is not applicable to battalion combat trains, UMCPs, and company trains.)

- Where there is enough space for dispersion of vehicles and activities; cover and concealment from hostile

ground and aerial observation; and firm ground for the vehicles.

- On terrain that favors defense against air or ground attacks; that makes local security easier; that does not contain a barrier to supply and recovery operations; and that will not present major obstacles to the unit or canalize it.

Company Trains

How are the company trains configured?

The company trains are best described as "austere." Typically, they consist of a recovery vehicle, a maintenance track with mechanics and tools, and one or two M113A1 medical evacuation vehicles. In addition to these armored vehicles, thin-skinned vehicles also operate in the company trains but only during resupply operations. Under decentralized feeding operations, company trains sometimes have a mess team attached, most likely when the unit is not engaged in tactical operations.

The company trains serve as the focal point for company logistical operations — a distribution point for supplies, a maintenance center, a location for medical evacuation operations, and a point where requests from company elements are received. The activities in the company trains are planned by the company XO on the basis of his commander's instructions but are supervised by the company First Sergeant.

Where are the company trains located?

In offensive operations, the personnel and vehicles that make up the company trains move with the company and receive rear protection from a squad or platoon from the company. If an operation has a shallow objective, or if the company is part of a deliberate attack, the trains move behind the company, taking maximum advantage of the terrain for cover and concealment.

In the defense, the company trains support the company from a position 500 to 1,000 meters behind the company's forward positions. The company trains should be in a position that makes the most of the available cover and con-

cealment and of the support provided to the company.

Combat Trains

How are the combat trains organized, and what support do they provide?

The combat trains are organized to provide immediate, critical support to the tactical operations. These trains serve as the first source above company level for medical and personnel service support and a limited source of supplies for the forward elements of the battalions — Class III, Class V, and medical support.

The exact organization of the combat trains depends on the mission and the situation. These trains should contain the fewest people possible and the smallest amount of equipment necessary for the mission.

Who is in charge of the combat trains?

The battalion S-4 is responsible for their operation and security; in his absence, the battalion S-1 assumes this responsibility. The S-4 operates from the administrative/logistical operations center (ALOC), an M577A2 command post vehicle.

How should the combat trains move, and where should they be located?

The movement of the combat trains depends on the kind of operation a battalion is conducting.

In slow-moving offensive operations with limited objectives, the combat trains normally provide support from their initial location during the attack. Then, once the battalion's objective has been secured, the trains can displace to a forward location when directed, or as planned. The considerations for using this technique are based upon the terrain and the situation.

The terrain should be such that the combat trains are not exposed to enemy observation or direct fire, and the S-4 must take care to select locations that offer the best concealment and cover.

The present and anticipated tactical situations affect the movement of the combat trains. Before tactical opera-

tions start, the S-4 must make sure the combat trains will not be located in a position on the battlefield that will interfere with the maneuver of the force and that their selected locations do not serve as obstacles or limitations to the logistical support provided to the battalion.

In the fast-moving offensive operations prevalent in the AirLand Battle, where a battalion is moving over long distances, the combat trains move with the battalion. If the battalion is forced to deploy, the combat trains disperse to seek cover and concealment.

During defensive operations, battalion combat trains are located in the battalion sector, four to ten kilometers behind the FLOT (forward line of own troops). The exact location depends on many factors such as terrain and road networks. A key consideration is the ability of the combat trains to maintain radio contact with both the forward units and the battalion field trains.

Sometimes, a deeper combat trains location may be necessary because of the mobility and flexibility of the tactical situation. (In more static defensive situations, the combat trains may be employed farther forward.) Deeper positioning allows for better survivability of the combat trains and for the placement of larger amounts of supplies, particularly fuel and ammunition. To ensure effective support, certain supplies and supply elements may have to be attached to those teams that cannot otherwise be reached. Supplies may also be cached in the positions that are most likely to be occupied. The *mobile pre-position technique* — the positioning of trucks forward of the battalion combat trains when likely rearm locations cannot be determined — may be considered.

UMCP

What is the UMCP?

The UMCP is a forward maintenance area established and operated by the battalion. It is the point to which the forward units take damaged equipment that they cannot repair. It consists of the equipment and personnel from the battalion maintenance platoon. The UMCP is controlled by the battalion mainte-

nance officer (BMO), who is responsible for its composition and security.

What is the composition of the UMCP?

Its composition is not fixed, but depends on the BMO's analysis of both the tactical and the maintenance situations. The maintenance resources in each of the company trains (recovery vehicles, tools, test equipment, and personnel) and the maintenance resources required in the field trains must be taken into consideration. Because of the limited maintenance resources available to the battalion, there can be no waste. The BMO must see that the right resources are at the right place on the battlefield at the right time. If the need develops for more maintenance resources in an echelon, the BMO must shift the maintenance platoon's resources to meet that need.

In addition to the resources of the maintenance platoon, damaged vehicles and their crews are also present in the UMCP, and the BMO must take action to ensure that these vehicles and crews do not accumulate. The UMCP should never become so large that it cannot displace rapidly to new locations.

What can be done to control the size of the UMCP?

Its size can be controlled through the following actions:

- Having only essential maintenance resources present.
- Evacuating to the field trains maintenance site any damaged equipment that cannot be repaired within six hours of its arrival.

- Performing only mission essential maintenance.

- Having effective maintenance resources in the company trains.

Where should the UMCP be located?

It should be somewhere along the battalion's main supply route and close to the combat trains. The guidelines for locating and moving the combat trains in the offense and defense also apply to the UMCP. In fact, the combat trains and the UMCP may be located together.

Field Trains

What is the organization of the field trains?

The field trains contain the headquarters company (HHC) command post, the battalion supply section, the mess sections (centralized), the support platoon headquarters, and all of the remaining vehicles and supplies of the support platoon not found in the combat trains. Also found here are the remaining elements of the maintenance platoon and all the company supply sections.

Support platoon supply vehicles in the field trains should always be loaded. Loaded ammunition vehicles should be positioned away from the maintenance area and the Class III point to prevent traffic congestion and improve safety. The Class III point should be near the maintenance area.

When the mess section is centralized, the mess teams should be located together, because more meals can be prepared with less effort and resources.

When the mess section is decentralized, a Class I distribution point is needed to break down rations into company lots.

The maintenance platoon assets that are not needed in the company trains or the UMCP operate from one location in the field trains. Ideally, this site should be on the edge of the field trains to reduce traffic congestion and in fixed facilities to reduce the trains' noise and light signature.

Where are the battalion field trains located?

The battalion field trains operate from a location in the brigade support area (BSA) that is designated by the brigade S-4. The maneuver battalion's headquarters company commander is in charge of the field trains, and he designates the exact location of each element in the trains. He is responsible for ensuring that the internal defense plan of the field trains is developed and tied into the BSA defensive plan. He also controls vehicle movement into and out of the field trains, and should establish a road network that allows one-way traffic into and out of the area.

These questions and answers provide an overview of the subject of battalion trains as they are generally organized and employed in the AirLand Battle doctrine. The application of these guidelines depends, of course, on many variable aspects of the battlefield.

Captain Steve Brasler teaches logistics to Infantry Officer Advanced Course students at the Infantry School.

Rail Movement Spreadsheet

CAPTAIN CHARLES B. PELTO

An Army logistician—an infantry battalion or brigade S-4, for example—often has to do things he has never done before, especially when logistics is not his pri-

mary specialty. And sometimes he wishes he had never been given a particular "opportunity to excel"—such as planning to ship all his unit's equipment by train to

the National Training Center (NTC) in California for its training cycle there. (Once he does it, he probably hopes he never has to do it again. But he knows

he will—it is just a matter of time.) For many logisticians who have never even ridden on a train, this task can be a real nightmare.

This operation may not be too difficult for those battalion S-4s in Germany who do this sort of thing all of the time. Their battalions usually take everything they have with them when they go to Grafenwoehr, for instance, so they know exactly how much train space they will need for that equipment. In fact, their load plans have been worked out in considerable detail over the years and are practiced constantly.

But things are different in the States. Whatever training is conducted takes place on an installation, and trains are considered to be in the realm of the installation transportation officer (ITO). Before NTC, an S-4 didn't have to know much about trains to make a shipment. All he had to do was fill in the blanks on some forms, turn the forms over to the ITO several months before the planned shipping date, and then count on the proper number of rail cars to be spotted at the proper time. There was some manual labor, of course, and some loading had to be done. But the ITO usually took care of the major problems, like ordering the cars.

BROADENED

Now, though, in the days of NTC, an S-4's job has been broadened considerably and having to plan train loads has become a mandatory, recurring activity for every infantry and armor combat unit. For everyone except the S-4, getting to the NTC can be a pleasant, if different, experience. For the S-4, getting to the NTC is not nearly as pleasant and requires him to make an agonizing analysis of the material his unit can expect to draw at the NTC and then to identify those things his unit must take to fill out, let's say, a brigade task force. Here's how the process usually works:

At about D minus 100, the brigade determines the minimum amount of equipment it must have at the NTC if its exercise is to succeed. (This list is developed by the S-4 from information provided by the task force's subordinate units.) About

10 days later, the NTC sends the brigade logistician the latest operational readiness (OR) information, from which he can get an initial estimate of the amount of equipment that will be available to the brigade once it arrives.

The problem is that at least three other units will be using that equipment in the meantime, and he does not know exactly what will be available 90 days later. This forces him to do some second guessing, especially on low density items such as combat engineer vehicles and armored vehicle launched bridges.

By comparing the brigade's list of minimum requirements with the OR list provided by the NTC staff, he can decide on the types and quantities of equipment he has to ship. With this filler list in hand, he then goes to his installation transportation officer (ITO) and gets a picture of what the train will be like. This must occur at about D minus 67.

The final OR list from the NTC comes at D minus 30. This will be the last official report and the most important to the submission of equipment lists to the ITO.

A week or two later, after many man-hours of work compiling data, the ITO will be able to tell the logistics officer how many rail cars, by type, will be in the train. (He may also tell the logistics officer that he would rather not see him again on this subject, but that is just wishful thinking.)

The ITO knows all about the changes that are bound to come, both from the NTC and from the task force itself. In the course of this preparation, most of the unit commanders in the task force will review their equipment lists and probably ask for "minor" changes that cumulatively will equal *major* changes. As a result, the logistics officer will be in constant touch with the ITO asking questions and asking that modifications to the equipment list be processed to determine their effect on the makeup of the train.

To say at a certain point that there will be no more changes ignores the fact that commanders tell their staffs what to do, not the other way around. Although commanders can help keep changes to a minimum if they take certain steps, nothing can be done to prevent changes in the status of the equipment at the NTC.

Clearly, then, these changes must be

managed at brigade level, and someone has to do it. It is difficult or impossible for the ITO to give the brigade a dedicated train planning expert. The brigade S-4 shop has a number of people, but they will have enough to do just staying on top of routine operations and usually do not have the training for the job in any case. Although the brigade may be able to pull a bright officer in to do this job, spare officers are usually rare in a combat brigade.

SADDLED

It is more likely, therefore, that the brigade logistics officer will find himself saddled with the mission without any additional resources and will have to learn as he goes along. If he does not get some support, though, he can expect to spend many nights at headquarters trying to redesign his train on the basis of the changes requested that day. (In fact, he may as well ask the supply sergeant for a cot and kiss his family good-bye for the duration.)

Much of this can be prevented, fortunately, with the application of certain decision making tools such as a micro-computer and an electronic spreadsheet program.

With these two items the logistician can prepare an electronic spreadsheet that will perform all the necessary arithmetic calculations to determine if a proposed change will go beyond the limits of both the train size and the budget.

The brigade logistics officer, after studying the computer and the program, can take an already prepared template for planning the train configuration, load in key information involving the equipment required and the equipment available, identify the units that are to take their own equipment and the equipment itself, and let the program determine the size of the train. The program can then calculate, in just minutes, the effect of any proposed changes and alert the S-4 if they will violate his constraints.

Rail cars for major movements usually are leased to the Government by commercial railroads at a set price. Each car costs the same, whether it is a commercial gondola or an official Department of

Defense oversized flatcar (called a DODX). Using the rate for the train that went from his installation to the NTC most recently, the logistics officer can estimate, with reasonable accuracy, the cost of the movement. (This information is most readily available from the installation Comptroller's office.) The ITO may get a slightly different price when the Military Traffic Management Command (MTMC) comes back with the contract, but that is not of critical importance. The budget people at installation level understand that such differences exist between estimated and actual costs.

The real benefit of this system is that the logistics officer can now answer a call from one of the unit commanders or executive officers and tell him within minutes if a proposed change will cause an unacceptable increase in the size of the train. He can do this without having to go to the ITO and without having to spend extra hours in the office at night.

The logistics officer can also carry on with his routine operations, keep the subordinate units of the brigade task force happy, keep the budget officers at divi-

sion and installation levels informed of cost estimates, and also keep the brigade commander abreast of everything.

With a good printer, a hard copy of the spreadsheet can be generated, duplicated, and distributed to help keep the subordinate units fully informed about their portion of the train. They will be able to spot any discrepancies immediately and call in their corrections.

SPREADSHEET

The spreadsheet (see example) is divided into two distinct portions. Each portion deals with a specific aspect of the activity and is further divided into groups of columns, each of which addresses a specific function.

The upper portion of the entire spreadsheet deals with the equipment that the brigade task force must use while on the ground in the exercise. It is divided into three groups of columns arranged from left to right.

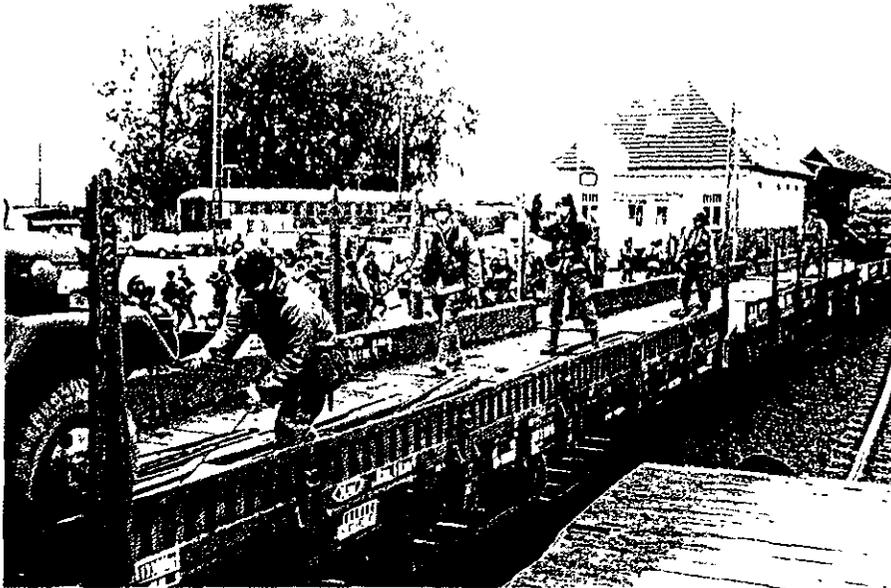
The first group of seven columns identifies the types of equipment by nomen-

clature, model number, line item number (LIN), length, width, height, and weight. This information, organized according to LIN, is useful in preparing the load lists that the ITO will want later. So when a unit calls and asks for a change, if they refer to the item by number, it will be easy to find. The operator does not need to make any entries in these columns.

The second group of five columns shows the quantities of equipment that must be considered for transportation. Here the operator enters the information about the equipment the brigade task force will need in the "Quantity Required" column and what is available at the NTC in the "Quantity Available" column. The program will tell the operator how many items he has to add to or subtract from the planned amounts in the "Adjustments" column. The "Quantity Planned" column is a tabulation of the data from the third group of columns.

This third and final group in the top portion specifically identifies the units that will be participating in the exercise. In the example provided, generic units have been used. The operator, with a lit-

RAIL CAR REQUIREMENTS PLANNING (EXAMPLE)		LENGTH	WIDTH	HEIGHT	WEIGHT	QUANTITY	QUANTITY	QUANTITY	QUANTITY	HIC	TH	AR	FA	ENG	ADA	FWD SPT	CAV	RI	SIG	MP				
NOHEN	MODEL #	LIN	(INCHES)	(INCHES)	(INCHES)	(POUNDS)	REQUIRED	AVAILABLE	TO BRING	PLANNED	ADJUSTMENTS	BDE	TH	AR	FA	ENG	ADA	FWD SPT	CAV	RI	SIG	MP		
CONEX	LARGE	C13311	102.0	75.0	82.3	10000	90	0	90	90	0	4	18	19	14	6	8	16		1	1	3		
AVLB	M-40	C20414	402.5	158.0	70.0	29300	2	0	2	2	0				2									
CARR MORT	M-125	D10274	191.5	100.0	84.8	20419	0	0	0	0	0													
CARR MORT	M-106	D10741	191.5	99.6	85.0	20131	12	8	4	3	1		1	2										
CARR CSO	M-348	D11049	232.0	100.0	76.8	16774	22	10	12	7	5				4			1						
CARR CP	M-577	D11538	191.5	100.0	104.0	22548	32	15	17	16	1	3	5	5	3									
CARR PERG	M-113	D12087	191.5	99.6	84.0	18940	108	94	14	10	4	1	3	1	1				4					
CEV	M-728	E36578	289.0	143.5	127.8	110560	2	1	1	2	-1					2								
CTV	M-901	E36896	190.5	100.0	103.0	23500	26	26	0	0	0													
ENCL ELEC	M-147	M01912	148.0	86.8	83.0	3010	0	0	0	0	4					4			10			3		
GEN SET	ANY TYPE	J49089	EXACT DATA VARIES WITH MODEL #						14	14	0	1	1	1	1				10					
GEN ARTY	M-163A1	J96694	190.0			25239	21	18	3	2	1			1	1									
HOMITZER	M-108A1			97.8	88.8	22244	7	3	4	5	-1					3								
TRK FB	M-49C	I48914	268.0	103.0	126.0	25875	9	3	6	7	-1								7					
TRK FB	M-559	I58078	263.3	95.9	91.9	14135	0	0	0	0	0													
TRK FB	M-559	I58078	391.8	108.3	100.3	27345	10	5	5	5	0		1	3	1									
TRK TRCTR	M-52A2	I59326	258.3	98.3	85.9	17960	32	15	17	17	0			4					13					
TRK TRCTR	M-123A1C	I59874	289.4	114.8	93.0	30882	0	0	0	0	0													
TRK UFFL	M-151A2	I60833	131.5	64.0	52.5	2450	91	50	41	24	17		4	2	1	2	2			2	1	10		
TRK ETP	M-820A2	I62371	368.8	98.5	137.1	29495	7	1	6	6	0								6					
TRK SHOP	M-109A1	I62540	264.8	99.5	130.0	15760	16	4	12	12	0								12					
TRK WRKR	M-543A2	I63299	349.0	98.0	104.9	33998	8	6	2	2	0								2					
TRK WRKR	M-553	I63436	400.8	108.3	117.3	39789	4	1	3	3	0		1		1				1					
							1219	619	600	530	70	20	73	82	78	28	18	185	0	9	13	24		
RAIL CAR	CAPACITY	TYPE EQUIPMENT					EQUIP QTY'S	UNUSED SPACE			ADDITIONAL ITEMS			TOTAL CARS			PER CAR COST	TRAIN COST (\$000)						
DODX	1	OVERSIZE					5	0.00			0			5										
DODX	2	OVERSIZE					14	0.00			0			7										
FLATBED	2	LRG TRCK					16	0.00			0			8										
FLATBED	2	LRG MHL					31	-0.50			1			16										
FLATBED	3	MHL/TRCK					48	0.00			0			16										
FLATBED	3	MHL/TRCK					233	0.00			0			85										
PIEGYBACK	2	SEMI-TRLR					25	-0.50			1			13										
TRI-LEVEL	21	SML MHL					44	-0.90			19			3										
CONDOLA	8	CONEX'S					90	-0.75			6			12										
CONDOLA	1	AVLB'S					2	0.00			0			2										
TOTALS							530				27	167			2900			484.3						



Members of the 1st Battalion, 24th Infantry, in Germany for REFORGER exercises, secure their vehicles on flat cars.

effort, can apply actual unit designations and additional units through procedures described in the program manual that comes with the spreadsheet's software.

The operator, based on his knowledge of unit TOEs and reference materials, will designate the number of items to be brought by rail to the exercise site. This is done by cross-referencing the unit column with the row for a specific item of equipment and entering the desired number. The program will automatically adjust all the figures in the upper portion of the spreadsheet accordingly.

When the "Adjustments" column reads "0" from top to bottom, the operator has identified all the equipment that has to be taken along to supplement the equipment identified as available at the NTC.

The lower portion of the spreadsheet provides the critical output information about the nature of the train. Here the area is divided into four groups:

From left to right, the first group of three columns gives basic information about the various rail cars for rapid reference. No entries are made here by the operator.

The second group consists of one column. Most of the critical calculations on rail car requirements are shown here as totals of the different types of equipment that can go on a corresponding type of rail car.

Thus the computer looks at the items of equipment and, based on various formulas, determines what type of rail car they will be loaded on. For example, M1 and M60 tanks, M88 tracked recovery vehicles, and other oversized loads are placed on DODX flat cars. Quarter-ton trucks and their trailers are usually placed on tri-level cars that will accommodate 21 items, while semi-trailers are loaded onto commercial piggy-back cars, each of which will carry two trailers. Eight CONEX containers will fit in a standard gondola car, while one bridge structure from the AVLB will fit on a gondola.

Most of the rest of the equipment will fit three items to a standard flat car. Although the ITO may state that such cars come in different lengths and that they can conceivably take more equipment, even he uses three items per car as a rule of thumb and accommodates the different types of equipment by requesting different-sized flat cars. (As with all rules, there are exceptions. The five-ton cargo trucks, for example, will usually wind up being placed two per flat car.)

All of this is based upon information derived from assorted Army publications involving lengths of vehicles and other equipment and also from information gathered from ITO load-planning techniques. For additional information on equipment not listed in manuals in the office, the logistics officer should consult with the ITO.

The third block of data in this portion has two columns. They show calculations on the unused space on each type of car and how many additional items can be accommodated. The operator does not make any entries here.

The fourth group tells the operator how many rail cars, by type, will be needed to carry the planned equipment to the exercise site and carries the information out to the estimated cost for the train. The operator enters the information on the cost of a rail car for the last similar exercise by a unit from that installation below the dashed line under "Per Car Cost." This entry allows the program to inform the operator of the estimated total cost. The figure is given below the dashed line under "Train Cost" in thousands of dollars (484.3 represents \$484,300).

The spreadsheet depicted in the example was based on equipment available at Fort Carson, Colorado. Units that have different equipment may enter new rows of equipment and modify the calculations after studying the operator's manual for their specific program. They must be sure to insert new rows between the top and lowest rows in the top portion and copy formulas down into the blank cells of the spreadsheet where appropriate; this will be mostly in the second group of columns. Then, based on the length and weight of an item, the proper row is adjusted in the "Qty's" column of the lower portion to include the new row in its calculations.

(The computer I used consisted of an Apple II+ with a Smith-Corona TP-I, letter-quality printer. The software was MULTIPLAN by Microsoft. The entire assembly would cost about \$1,600 today. I highly recommend, however, that a simple dot-matrix printer be selected instead of the slower letter-quality ones. The information and the template necessary to support this type of data processing has been turned over to the Command and Control Micro-computer Users Group (C²MUG) at Fort Leavenworth, Kansas. In this manner the information has been made available to any logistics officer who has a critical need to know how to plan to load a train without making it his life's work.)

The advantage of this system is primarily the time it saves. With it, a bri-

gade logistics office can plan the train for an NTC rotation without the need for additional personnel. Another benefit of this system includes the rapid flow of vital information between units and the identification of necessary corrections. In addition, because the computer does all the mathematics, this eliminates most of the potential for mistakes. The "Adjustments" column will even provide a check of the data the operator listed under the units and will help identify where an erroneous entry may have been made.

The principal disadvantage of this system is that it requires a good computer, a good electronic spreadsheet program, and a good operator. But with the effort to modernize our troop units by allowing the procurement of computers, this may not be too difficult. If such a computer is not available at the brigade level, the unit's division headquarters will probably have one and probably a copy of a good electronic spreadsheet as well.

The implementation of this technique should let future logisticians save a great

deal of time and reduce the burden on local installation transportation offices throughout the Army.



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SWAP SHOP



Here's how to fold a map to one-ninth its original size and use it without ever having to open it out to a larger size. Get a map, or preferably some practice paper, some glue or transparent tape, and a razor blade, and try it:

1. Lay the map face up on the table with north at the top.
2. Fold it in half (turn the bottom edge up to meet the top).
3. Crease the folded map into three equal parts with the creases parallel to the center fold.
4. Open the map completely and lay it face up in the normal position. Turn it so that east is at the top, and fold it in half as in Step 2 (fold the bottom to the top). Again, crease the folded map into three equal parts with the creases parallel to the center fold.
5. Open the map completely and lay it face up (with north in the normal position at the top). It is now creased into 36 equal parts (Figure 1). Using the razor blade, cut as indicated by the heavy north-south lines.
6. Next, position both hands in such a way that the fingers and thumb of each hand straddle the second crease from the top (Figure 2). Draw the paper up so it will fold at this crease and then fold over toward the top edge. Draw the paper up at the second crease from the bottom to meet the top edge, and fold bottom edge up to meet top. An "edge view" of the map should now look like three "V"s joined together (Figure 3).
7. Open the map to the center section (without unfolding the re-

mainder, and turn it so that east is at the top. Straddle the second crease from the top as in Step 6. Draw the paper up and fold toward the top as before. Repeat the procedure with the second crease from the bottom, and fold the bottom edge up to meet the top, all as in the previous step. An "edge view" will again look like three "V"s together.

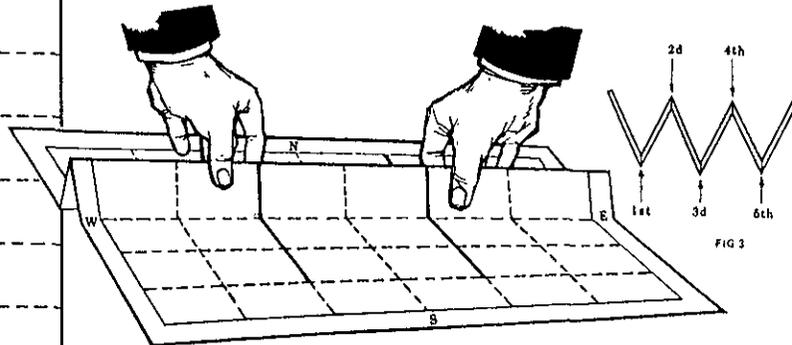
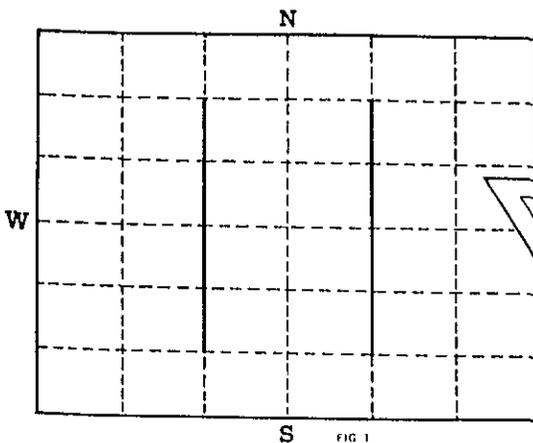
8. Allow the map to open at the middle V and lie flat on the table, exposing the center section without unfolding any other parts. Apply glue to the adjacent backs of the map where the cuts have been made, or bind the cut edges together with transparent tape. The sectors, so joined, can now be turned as one page.

You can now find any point by turning the flaps up and down, left and right. You can index the map for quicker reference by labeling the three sections of each lateral strip: A1, A2, and A3 (top); B1, B2, and B3 (center); and C1, C2, and C3 (bottom).

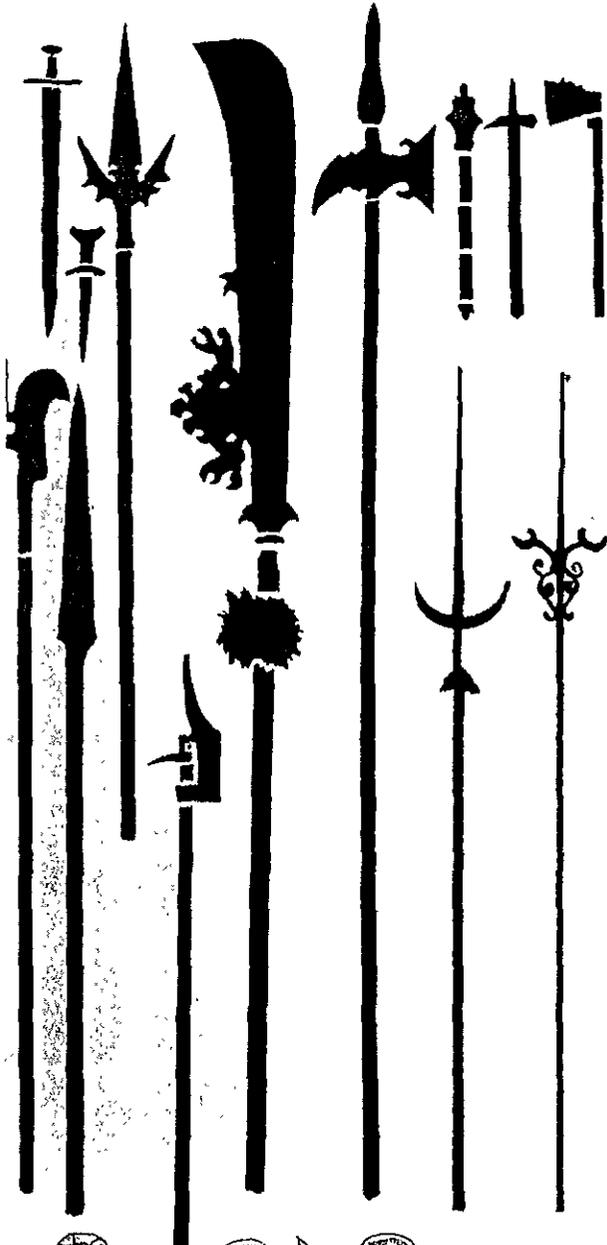
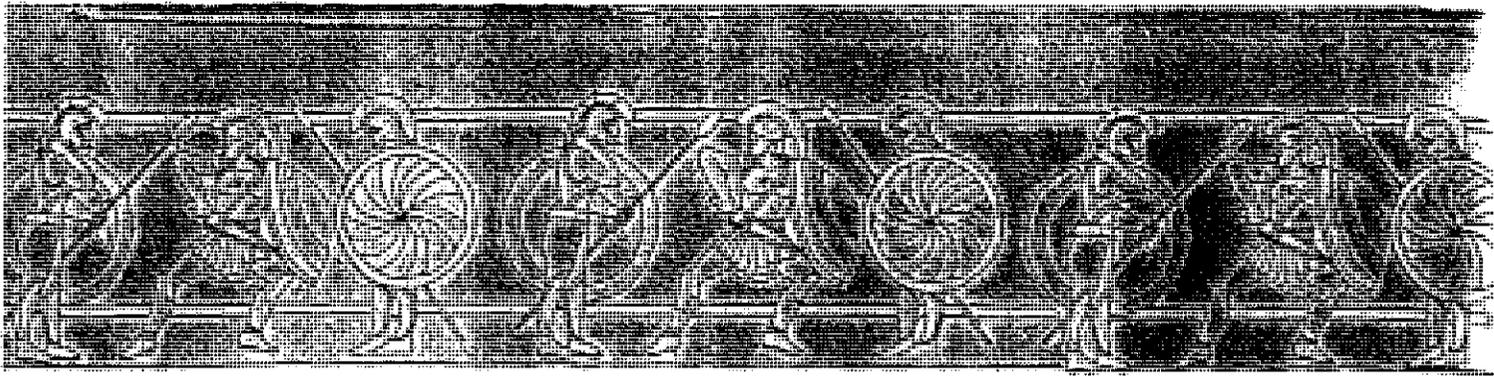
The map may be glued into a manila folder for protection and easier use, but it will have to be opened to two-ninths size to find all features and sections. Simply apply glue to the four bottom back corners and align the center crease of the map with that of the folder.

If you want to carry the map in a pocket-size notebook, fold it to one-thirty-sixth size and glue it to the notebook on one of the back corners. The map may be opened to one-ninth size for reading.

This method works with all maps, including those composed of sector sheets that have been glued together.



(Reprinted from the Infantry School Quarterly, January 1956, pp. 29-31; prepared by Major James R. Darden, then an instructor in the Infantry School, who had learned the technique from a friend.)



Light Infantry

The advent of the Army's new light infantry divisions has brought about much discussion on how to use these new units—and the discussion continues.

The formation of this light infantry force was based upon a stated need: to "improve the Army's capability to meet security demands within the dynamic and volatile international environment . . . a strategically responsive and flexible infantry division." To do that, the light infantry has been correctly defined as a force "composed primarily of footmobile fighters . . . organized, equipped, and trained to conduct effective combat operations against light enemy forces."

The problems squarely facing that light infantry, however, are firepower, the weight of the equipment, and the mobility of the force. There are solutions to these problems, but each must be examined carefully so that the shock value of firepower and rapid mobility is not forgotten or discarded.

The current doctrine on using a light infantry force really boils down to this: Can we get a U.S. presence into a hot spot with enough capability and "bravura" to forestall a much more dangerous situation? To examine what our forces must do, it may be instructive, in the words of J.F.C. Fuller, to "look back as the surest way of looking forward."



MAJOR DAVID G. BRADFORD
UNITED STATES AIR FORCE

First, let's go back to 4 B.C. and the generalship of the Athenian Iphicrates, because he created, trained, and commanded a new type of infantry force that wore lighter armor and carried more "firepower." Then, because the force was lighter, he brought about a change in tactics—tactics that won the day against a more heavily armed opponent—and kicked off a series of changes that led up to what we have today.

Peltasts vs. Hoplites (Equipment Drives Tactics)

Iphicrates should be considered the father of innovation in regard to light infantry forces. He saw the potential of light infantry units (*peltasts*) and used them with considerable success against the Spartans' heavy foot infantry (*hoplites*). Not only did Iphicrates learn from this some lessons about shock power and equipment weight, he also applied those lessons to his own heavy infantry force. He introduced modifications to his *hoplites'* traditional equipment, making it lighter and more deadly. And in doing so he increased his infantrymen's chances of succeeding against a more heavily armed opponent.

Before these reforms, infantry had tended to acquire heavier and less maneuverable armaments and equipment. Consider the Greek *hoplite*, for example, as he advanced against an enemy in battle: He wore body armor with metal scales on it and armbands and lower leg protectors made of bronze. He carried a shield that was built on a wooden core and faced with bronze and backed with leather; a long spear (6½-10 feet long) with a head of iron and a butt spike of bronze; and a short sword (with two-foot blade) with bronze fittings.

A heavy infantry force moving like an armored vehicle in the famous phalanx formation was probably an impressive sight. A *hoplite*, heavily armored, carried his shield on his left arm and, when in a combat formation, stood shoulder to

shoulder with his comrades. This solid wall of bronze shields, with ten-foot spears bristling out of it, was indeed formidable. But because of each man's tendency to edge behind his neighbor's shield, the phalanx had a habit of drifting to the right, which affected the outcome of many battles.

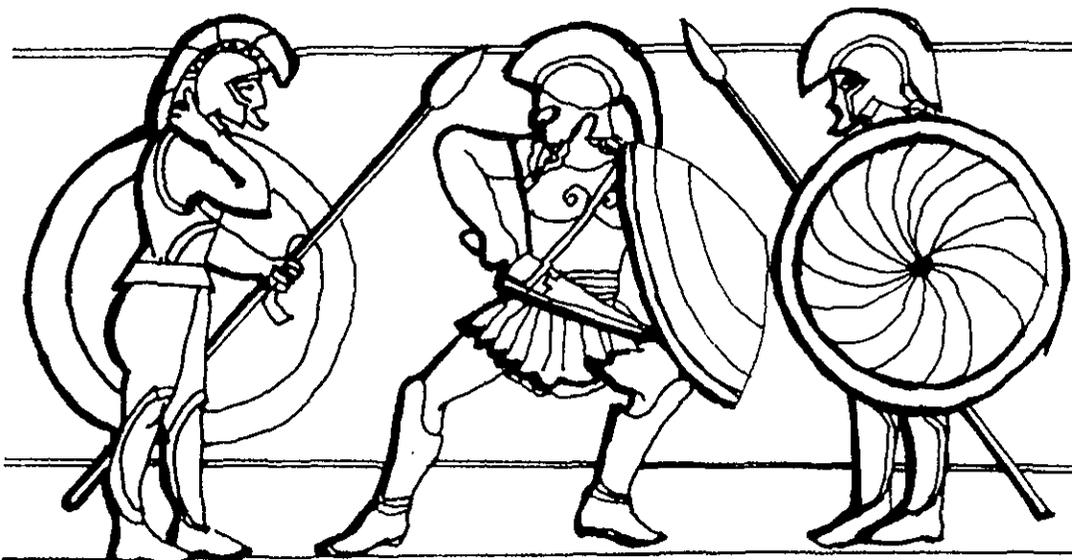
Iphicrates must have seen that this maneuver was dangerous and at times unwieldy. In light of his battle experience at Lechaeum, he introduced modifications to the traditional *hoplite* equipment, thus giving us the earliest beginnings of the light infantry force.

He replaced the heavy metal-faced shield with a smaller leather-faced one, the metal leg protectors with boots, and the metal body armor with quilted linen and leather helmet. (He lengthened the spear to 12 feet to compensate for the lighter armor.)

The Athenian general did not have too long to wait for an opportunity to demonstrate the capabilities of his new force of light infantry. During the Corinthian War, a Spartan *mora* (battalion) of 600 men was escorting a contingent of allied troops back to the Peloponnesus, when Iphicrates' new force intercepted it in the Isthmus, routed it, and inflicted crippling losses.

It can be argued that Spartan lack of foresight, combined with some bad luck, had produced this fatal battle situation. But Iphicrates had planned his own victory, a victory that vindicated his new tactical concept as borne out by his light infantry.

The efficient organizing, equipping, and arming of some Athenian heavy infantry units into a light infantry force, the *peltast*, is a historical lesson that bears careful consideration. Training and discipline are also key parts of efficiency and must never be overlooked, no matter how well equipped or armed a force may be. "Firepower" discipline is especially valuable, no matter what army or what century one discusses.



Hoplite

When real firepower came into being, the lessons of weight (armor), mobility, and tactics would become even more important.

Ashigaru vs. Samurai (Firepower Over Heavy Equipment)

The *ashigaru* versus the *samurai* is a historical example that takes place in an almost closed society consisting of warriors and warlords, merchants and farmers, all part of feudal Japan in the 16th century.

Late in that century, the Portuguese, one of the few outside traders allowed in, introduced firearms to the Japanese, an import that was destined to change the entire fabric of Japanese society by the late 19th century.

During this time, there was a situation in which political and economic gains were dependent upon military force, and it was essential that a *daimyo* (warlord) try to be a military innovator. Equipping, establishing, and training the *samurai*,

the military forces of the period, was expensive and time-consuming.

A *samurai* wore heavy, specialized armor and was armed with the *katana* (standard fighting sword), *yabusame* (mounted archery equipment), and possibly the *naginata* (a heavy sword with a long curved blade). And since the *samurai* had become a distinctive class, not everyone could even become a warrior.

In the middle of the 16th century, however, a *daimyo* named Takeda Shingen began to discipline a group of farm workers into a fighting force. These peasant troops were called *ashigaru* or, literally, "light feet."

An *ashigaru* wore no armor but was clothed in a quilted uniform. He was armed with a long lance with a grappling hook arrangement on the end. This allowed him to move quickly on the battlefield, hook an armored, horse-mounted *samurai*, bring him to the ground, and dispatch him with a sword or spear. But most important, the *ashigaru* became the first type of soldier to use a firearm, a *harquebus*, which was fired by dropping a lighted match onto a touchhole. Because it was not very accurate, several were usually fired in volleys, but it was comparatively easy to learn how to use one. It gradually replaced the bow, which took more strength to use and more training to learn, as the *ashigaru's* main missile weapon.

As the *ashigaru* became better armed and trained with their *harquebuses*, the mounted *samurai*, for protection, became heavier and less mobile.

The most difficult task for the armor maker of this period was to build armor that could protect the *samurai* against both *harquebus* shot and arrows. Bullet- and arrow-proof armor did not come soon enough or cheap enough, though, so *samurai* warriors just compensated by adding another layer to their existing lamellar armor.

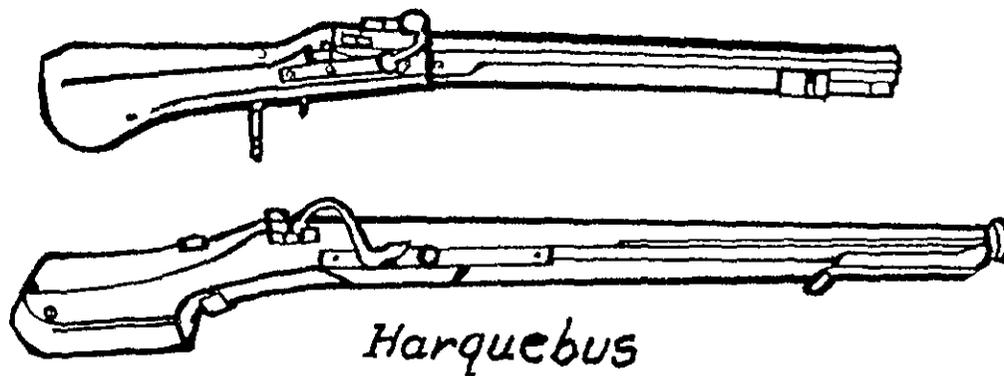
But there was another powerful warlord at the time who began to realize the benefits of integrating *ashigaru* soldiers and *samurai* into one army. He was the *daimyo* Nobunaga, a man noted for his fortress building ability. By 1575 he had organized a 30,000-man army of *samurai* and *ashigaru*. In his war for territory against the Takeda clan, he used his "light feet" infantry successfully against heavy mounted cavalry.

Nobunaga's defeat of the Takeda cavalry and the manner in which he directed it became a turning point in Japanese military history. Nobunaga caught up with the Takeda clan's army at the city of Nagashino. That battle is described by Stephen P. Turnbull in *The Book of the Samurai* as follows:

[Nobunaga] chose a strong position from which he could receive the charge and instead of advancing toward the castle to meet the Takeda, he constructed a palisade across the broken ground to the foot of Mount Gambo, leaving a narrow stream between him and the enemy. Gaps were left in the palisade every 50 yards or so for counterattack. From his 10,000 ashigaru harquebusiers, he detached the 3,000 best shots, and lined them up behind the palisade in three ranks. This was probably the first time that ashigaru had been given such a prominent place in any battle, demonstrating very clearly the discipline [of the ashigaru]. . . As the Takeda charged in, the ashigaru brought the cavalry crashing down with volleys of harquebus fire.

Turnbull says that most accounts of the battle credit Nobunaga with "ordered firing according to rank, one group fir-





ing while the other reloaded." Such an arrangement would put Nobunaga's army a good "hundred years ahead of any other army in the world."

The battlefield of Nagashino demonstrates how a technological innovation (the harquebus), coupled with changes in fighting organizations (the *ashigaru*) and tactics, can be a decisive factor in victory.

Light Infantry vs. Infantry (Equipment and Tactics Drive Maneuver)

If light infantry is a concept driven by technology, it is also a concept driven by the need for rapid troop movement and the ability to sustain a force on the move or engaged in battle. This is true not only for today's U.S. Army but also for the Army of the American Revolutionary War period of 1775-1783.

From 1750 to 1800, armies were subjected to the trends brought about by technology (the flintlock musket), by rapid troop movement in battle (Frederick the Great's rigid troop drill techniques), and by logistics (Frederick again, breaking dependence on depots). These three areas began to receive so much careful study and refinement that they eventually became doctrinal.

During the 50-year period too, doctrinally, maneuver—the tactical manipulation of fire and movement on the battlefield—became the predominant military characteristic. But the use of the flintlock musket and its increased rate of fire created a radical new problem. The rigid discipline of the early 18th century in Europe became even more stringent under Frederick. He turned the individual Prussian soldier into a robot. His units could rapidly change directions or shift into battle formation from marching column or vice versa, and fire by platoon replaced volley fire by larger formations. This led to a mobile infantry that could be shifted and massed at will on the battlefield to produce fire and shock action at a chosen spot.

Then, as armies were beginning to grasp the firepower lessons of the disciplined platoon firing repeated, lethal volleys from their smoothbore muskets, the rifle came into being.

Originally a sporting weapon, the grooved-barrel rifle achieved far better accuracy and range than the smoothbore musket. It took a long time for infantrymen to adopt the rifle into the arsenal, but it should not have. In Germany, the huntsman—the *jaeger*—had used it for nearly 200 years.

In our own country, German craftsmen in Pennsylvania had been turning out a lighter and longer-barreled version of the countrymen's weapon for the American woodsmen. This rifle had a slower rate of fire than the musket, because each bullet (wrapped in a greased patch) had to be hammered down into the grooved barrel with a mallet. It was an individual arm, carrying no bayonet, but as a result of its use in the American Revolution, the rifle and the rifleman became an element in warfare.

Furthermore, out of the French and Indian War also came the use of the *jaeger* force, for *jaegers* had mobility, or maneuver by another concept. Skirmishers, light infantry troops covering the front of the field of battle, had always been present in one way or another but, because of their slow rate of fire, were not part of the regular army force. (For a more complete discussion of *jaeger* infantry, see "Light Infantry in Perspective," by Steven L. Canby, *INFANTRY*, July-August 1984, pp. 28-31.)

Before 1756, European armies had considered the light infantry "expendable" irregular troops, but as a result of the defeat of British General Edward Braddock on 9 July 1755 in the battle of the Monongahela by 900 French and "irregular" troops, changes were made in the British Army. These changes led to the establishment in each foot regiment of a light infantry company. This light company was usually detached from its battalion for covering the advance of heavy infantry or for some other special mission.

The historical significance of examining how light infantry found its way out of heavy infantry is the discovery that light infantry could defeat a European trained and superbly drilled maneuver infantry force. The light infantry, given enough disciplined and accurate firepower from rifles, and protected by woods or hilly terrain, could defeat a numerically superior, formation maneuvering troop force. The U.S. Army proved

it on many occasions during the Revolutionary War.

One final refinement that gave light infantry a further break from the rigid school of maneuver was Frederick's logistical systems. Breaking away from the slavish dependence on depots, Frederick devised the system of having the individual soldier carry three days' rations in his knapsack, with eight days' bread supply carried by the regimental trains and a month's supply by the army's trains.

Frederick also had a fairly well organized transport system linking his armies to such depots as he did organize. Furthermore, his troops were trained and prepared to live off the land. Most important, his light infantry forces could move quickly, carry provisions organically, and hold their positions until the supply trains and heavy equipment and troops could be moved up.

These innovative ideas, though created piecemeal, would be demonstrated vividly as a whole by a German general in World War I who was innovative enough to drive the Allied Army almost back to Paris.

Sturmabteilungen vs. Static Infantry **(Maneuver Drives Equipment and Tactics)**

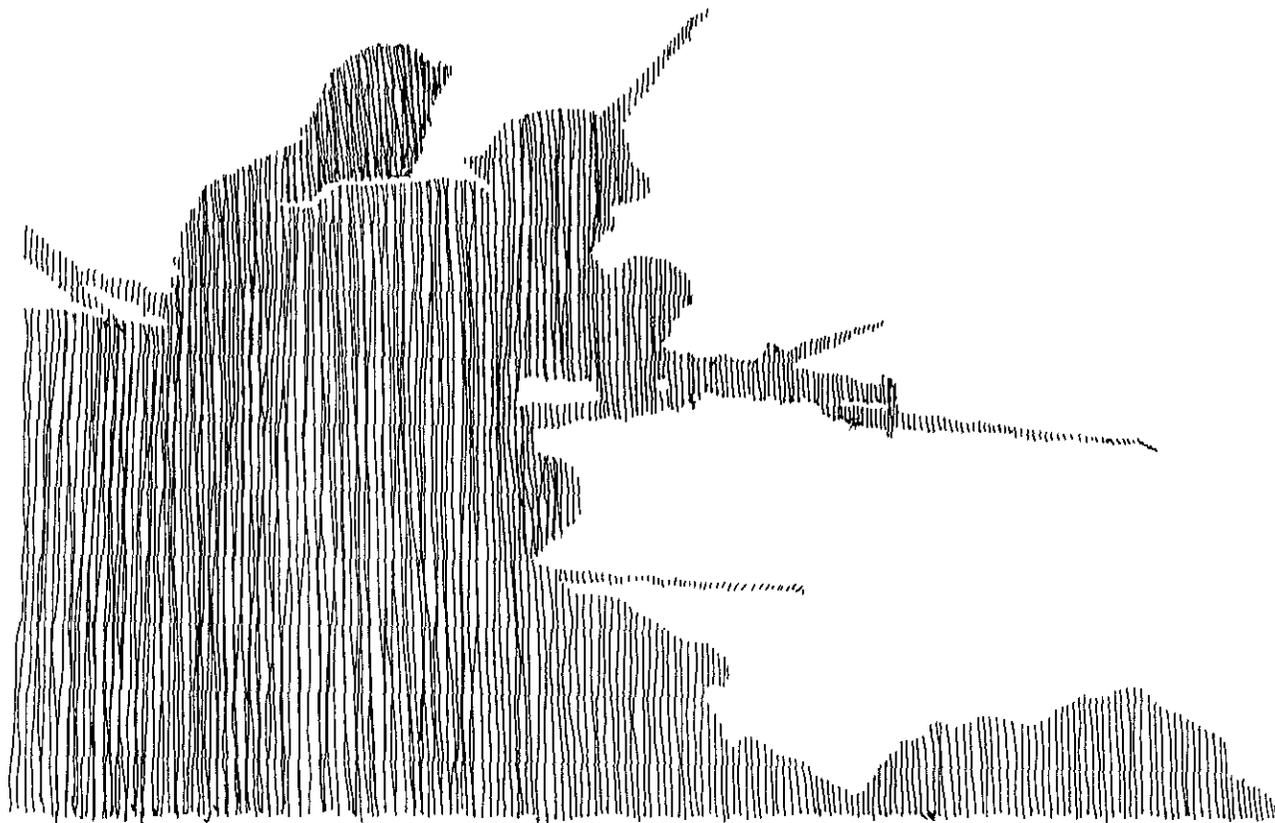
On 1 September 1917 German Lieutenant General Oscar von Hutier's specially trained *sturmabteilungen* (storm troops) attacked the northern anchor of the Russian Front in a new way. This was the first application of what would later become known as "Hutier tactics." The Russian Twelfth Army streamed eastward in panic, taken completely off guard by the sharp assault of Hutier's trained light infantry battalions.

Maneuver, or more correctly the Great War's distinct lack of maneuver, called for innovations in offensive tactics. General Erich von Ludendorff, commanding the German armies, depended on highly specialized shock formations trained in a wave method of assault—the same method General Hutier had experimented with during the Riga campaign in 1917. So before the start of his March 1918 Channel Port offensives, Ludendorff, knowing that his scarce manpower resources could not be wasted, decreed that, instead of sheer weight, Hutier's newly developed (and proven) tactical skills would be used to defeat the entrenched enemy forces.

Units in the line, as well as those moving from the Eastern to the Western Front, were combed of their youngest, fittest, and most experienced soldiers, and these were formed into storm trooper units. Armed with light machineguns, light trench mortars, and flamethrowers, they were to cross the trench lines, bypass centers of hard resistance and machine-gun posts, and, if possible, break through to attack the enemy artillery positions.

For these fast-moving tactics to be successful, Hutier's storm troopers were made physically light and given more firepower. They carried Bergmann 9mm submachineguns with snail-type magazines and stick bombs in large canvas grenade bags.

Every German army in the field soon had a main body of storm troopers officially designated a battalion. There were 18 battalions of storm troopers by the start of the Ludendorff offensive campaigns of 1918. When the offensive was launched on 21 March 1918, the German Army achieved surprising success using the Hutier tactics employed by these fast-moving troops.



These new tactics differed in two ways from the infantry tactics previously used by armies on the offensive. First, the attacking storm troopers bypassed strongholds and enemy units at the flanks, leaving the destruction of these elements to the second wave, and advanced boldly by infiltrating small groups until they reached the enemy artillery. (To increase their firepower, the storm battalions were equipped with specially designed light artillery batteries and mortars.)

The second change in tactics was that the storm troopers were followed by battle units consisting of infantry, machine-guns, trench-mortar teams, engineers, sections of field artillery, and ammunition carriers. The primary job of these units was to attack defended positions, repulse any counterattack, and generally overwhelm the already dazed enemy.

Spectacular results were achieved during the opening days of the March offensives. General von Hutier's Eighteenth Army gained 38 kilometers in four days, crushing General Sir Hubert Gough's Fifth British Army, taking 50,000 prisoners, and coming close to driving a wedge between the British and French fronts. The second part of the offensive, launched on 9 April, was just as successful. German storm troopers, backed by battle units, advanced some 20 kilometers in one day, the longest surge made on the Western Front since the beginning of trench warfare.

Although the tactic was successful, it did not have what it needed to sustain the German offensive. (Other offensives were tried unsuccessfully by an army exhausted by four long years of trench warfare.) The lessons are still valid, however, on how a light infantry force whose men were footmobile and individually armed with significant firepower could carry out an offensive. The Hutier experiments are still worth examining.

U.S. vs. Them

(Tactics, Equipment, and Firepower)

Whenever a discussion gets around to the structure of the combat division, the words "experience" and "experiments" probably best sum up all the changes the U.S. Army has been subjected to over the years. The period between 1918 and 1973 found the U.S. Army, and practically all other modern armies, debating furiously the status of infantry.

In the Great War, the introduction of gas warfare, barbed wire entrenchments, mines, machineguns, tanks, artillery barges, and airplanes all seemed to conspire to either dilute, change, or eliminate the infantry. In 1934 a decade of debate began, taking on a life of its own as the Army began to design "light infantry divisions." The main purpose was to increase mobility and maneuverability, an idea pushed hard in 1939 by then-Brigadier General Lesley J. McNair, commander of the 2d Division Artillery. He became the chief proponent of the reorganization and restructuring of the Army's infantry divisions.

The division experiments carried out by McNair dealt with fundamental, back-to-basics questions regarding, among other things, frontages, firepower, integration of crew-served weapons by echelon, proportion of artillery and other branches to infantry, and transportation requirements.

His chief aim during this decade of experimentation was to get the most combat power and tactical mobility at the least cost in manpower, weapons, and shipping space. How he intended to do that—and the lesson that must strike home now—is well documented by a series of hard organizational studies.

Summarized, McNair wanted light infantry forces that could concentrate combat power into offensive units that could defeat the enemy, giving each unit what it needed to conduct operations on open, maneuver-oriented battlefields. He also wanted to restrict the amount of transportation needed for strategic deployment. He was more interested, for example, in trucks that could shuttle necessary supplies and ammunition to the division during a 24-hour period than in trucks that could carry everything in one lift. Although the rifle units would not be motorized, they could become so by the attachment of six truck companies to the division.

The primary lesson learned, however, was not organizational but doctrinal: This "light infantry force" could not be effective in defending against massed armor and airpower, nor could it attack prepared defenses without a significant amount of augmentation from non-divisional assets. In the long run, the division could not conduct operations that involved high casualties—the austerity of manning in the proposed McNair division gave it practically no absorbing capability. General McNair's untimely death left the problem of a light infantry force unresolved until recently.

Summation

(Where is the Light Infantry Going?)

Where, then, does this leave the light infantry force today? What is its purpose? Against whom is it to be deployed? How do we sustain, rearm, and refuel this force? Do we have to back it up with a larger or heavier force?

The answers are hard to come by. John English's *A Perspective on Infantry* gives us some answers, but they may not be the answers we want to hear. Our own government's quest for "national security" also provides answers, because it promises us that light infantry forces will play a meaningful role in preventing low intensity conflicts and keep some "controllable crises" from escalating into "superior confrontations." But what do those words mean?

From a doctrinal viewpoint, this means that light infantry is being "organized and equipped to conduct combat operations against light enemy forces for periods of short duration" and that light infantry can be "rapidly deployed to conduct contingency operations ranging from show-of-force to full combat operations against a hostile force."

More meanings and answers are to be found in some well-thought-out articles in journals and magazines, others in books or lectures. But we will really learn more only after we have headed off the first crisis using a light infantry force. For now, the U.S. Army must take the concept of building a force that can reasonably respond anywhere in the world within a few days as a most innovative idea for using infantry. And to make the most of that force, we must look penetratingly at what history lessons tell us.

If we take the historical lessons presented here and couple them with the innovative thinking currently being done con-

cerning the light infantry, then we can have a viable force capable of performing its mission. What are those lessons?

Iphicrates teaches us to protect the soldier but to keep him as light in weight as possible. Technology can help us do that. Tomorrow the light infantry soldier's battle fatigues will become more protective, more bullet-resistant but still lightweight. The kevlar helmet is already here and has been battle tested in Grenada, and even more improvements are forthcoming.

Nobunaga teaches us to train light infantry so they can overcome a heavy, mobile force. His lesson is one punctuated with tactics, terrain, and disciplined firepower. Technology can give us some of those same advantages. Lightweight but devastatingly accurate antitank guided weapons are available for arming our infantrymen. Belgian arms manufacturers have developed a family of rifle grenades with armor-piercing, antipersonnel, smoke, and illuminating capabilities. These rounds are available for firing from a variety of infantry rifles, and they eliminate the need for separate grenade launchers, light mortars, and the personnel to use these weapons.

Frederick the Great instructs us to sustain the soldier but also to ensure that he can sustain himself. Technology can do that, too. The space program has given us compressed, dehydrated or paste concentrate meals, high in nutrition and the calories an infantryman must have. Frederick's regimental and army supply trains (and ours) can come to a halt, but the light infantryman can still sustain himself, supplementing his needs from the land if necessary and, most important, carrying in a pocket enough meals for many days. To protect and shelter him, the modern infantryman's bivouac outfit would be similar to that of backpackers and other outdoorsmen.

General Braddock teaches us that light infantry can cover an advance, protect the front, and find the enemy. Technology can make that lesson apply to the light infantry force. Today's night vision goggles and tomorrow's improved versions of them will allow the light infantry to be an all-weather, day-and-night, combat capable fighting force. And if protected by the terrain and the weather, that force can be even more effective.

General Hutier's tactics teach us that firepower, if correctly applied by a fast-moving infantry force, can be a key to overcoming complex enemy entrenchments. More significantly, the historical effect of the German successes reminds us

that during battle, events have a way of developing in an unexpected way. Fast-moving infantry could get into a situation in which ammunition resupply, or any resupply effort, could be delayed or never come at all.

Technology to the rescue again? Yes, with the introduction of the German G11 assault rifle (or some similar weapon), the problems of ammunition resupply, marksmanship, firepower, and sheer weight might be solved.

The G11 is a small, light, gas-operated assault rifle with three firing modes: single shot, controlled burst (three rounds), and fully automatic fire. The weapon is chambered for the innovative 4.7mm caseless ammunition and has a magazine capacity of 50 rounds. Equip this rifle with the futuristic "razerscope" (a combination radar-laser-infrared sight with a micro-processor that provides accurate aiming and rangefinding even in bad conditions) and the light infantryman has the firepower and accuracy that the German *jaegers* and storm troopers tried to achieve. And the G11 rifle's caseless ammunition allows a soldier to carry three times the basic load he now carries. Going into battle with a modernized combat load has an important bearing on the energy tomorrow's infantryman may be called upon to expend.

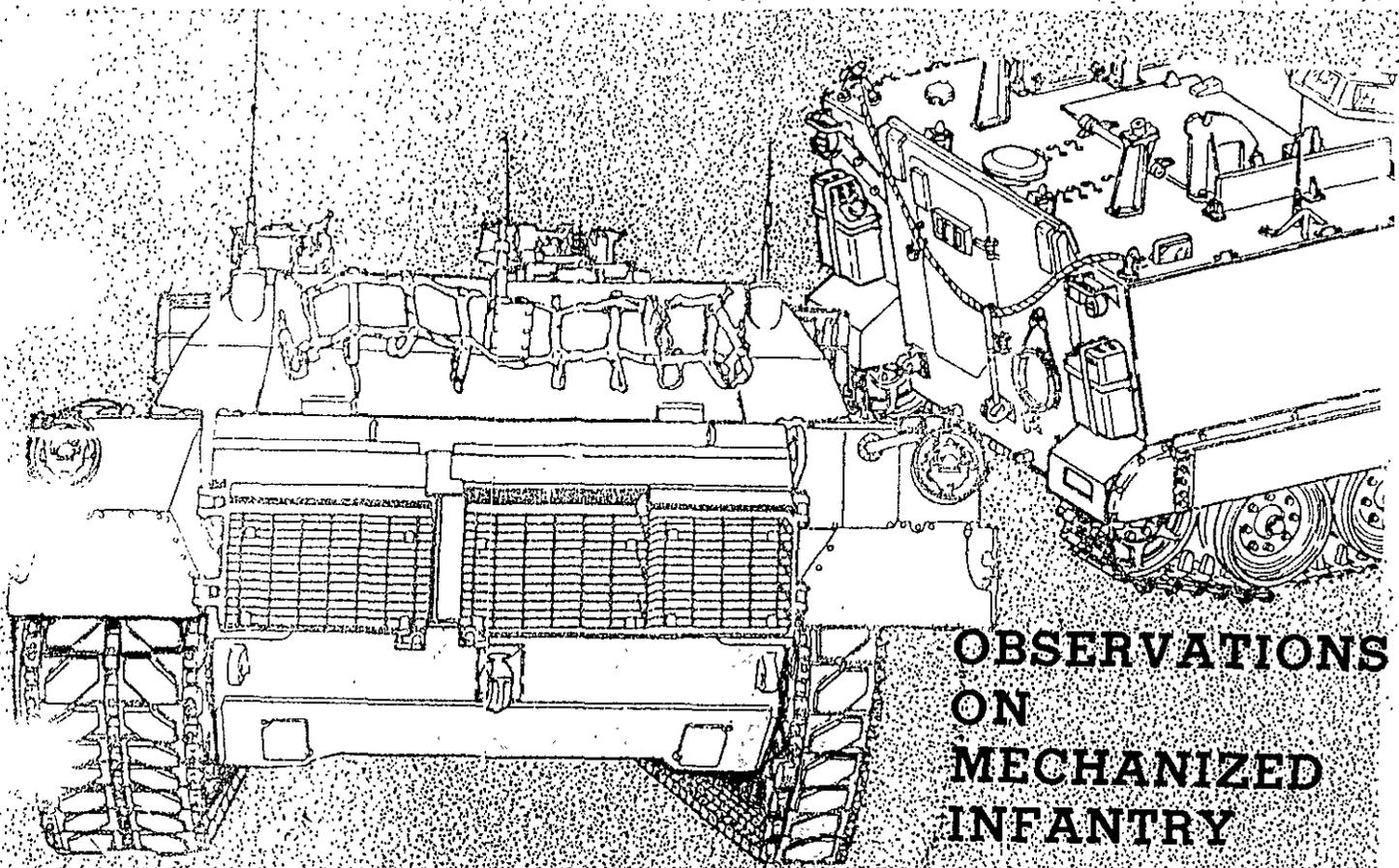
Finally, General McNair gives us a hard look at tactics, equipment, research, and doctrine for advancing the concept of the light infantry force. The discussion of whether light infantry, as a viable force, is right or wrong is moot. History is on its side.

We must glean from history the lessons that can give energy and direction to the light infantry force, because both energy and direction will be needed to carry out the dictates of our national policies. We must all see to the nurture of this force, because the time for deploying it could come sooner than we expect.



Major David G. Bradford, U.S. Air Force, is assigned to the Plans and Policy Directorate, USCINCPAC, in Hawaii. He completed all the requirements as a joint planner while attending the U.S. Army Command and General Staff College. His interest in light infantry stems from his involvement with the 25th Infantry Division, which is assigned to the Western Command, a component of the Pacific Command.





OBSERVATIONS ON MECHANIZED INFANTRY

SERGEANT FIRST CLASS JOHN E. FOLEY

There's a big difference between light infantry units and mechanized units. I knew that. But after 10 years of experience in light units—light, conventional, airborne, and Ranger—my first assignment to a mechanized unit (equipped with the M113A1) was a challenge. I had a lot to learn. The only thing to do was to grab the field manuals and technical manuals, get into the motor pool and out in the field, and learn mechanized infantry from the ground up. (I also picked the brains of my First Sergeant, who helped me write this article.)

During this learning process, being a senior NCO, I was able to compare mechanized infantry to the light units I had served in and to look at it perhaps with a fresh view. Nothing is ever perfect, and seeing what I have seen, and thinking about how it might be made better, I want to share some of my observations and to challenge my fellow infantrymen to think about ways to improve our profession—tactically and technically.

The single most impressive aspect of mechanized infantry, compared to all the other types, is the firepower available to a platoon and the amount of ammunition it can carry. Having hoarded ammunition for years, since what I carried was all I would have, the idea of having plenty now is exciting. But how do we use it to our advantage without wasting it?

Machineguns provide the bulk of a mechanized platoon's firepower. With the 900 to 1,200 rounds per gun that can be carried easily, the platoon has staying power in a firefight. The main problem I have seen with firing the machineguns while mounted has been their lack of accuracy. The .50 cali-

ber M2, for example, is our main weapon, but it is either locked into position or is a free gun, held and controlled only by the gunner. At certain angles its barrel comes perilously close to the head of the driver, and its accuracy is poor.

The M60 machinegun is either held loose over the side or, better, is mounted on its tripod and the tripod then lashed to the side of the vehicle. It is more accurate when it is tied down, but it can then fire only to one side of the track, and dismounting it from the track takes longer.

Tactically, it is dangerous for the gunners of both the machineguns to expose themselves, because they are then subject to enemy counterfire. (I have always been taught to take out machineguns first, and the enemy probably also considers it sensible to take out machineguns that are firing at him.)

Another problem associated with enemy fire is how helpless mechanized infantrymen are when they come under enemy artillery fire or chemical attack. They can button up, of course, but when they do they are blind, and they cannot fire their machineguns from under cover. (This is a great weakness of the M113.)

Considering all this, are the machineguns we are equipped with now what we really need? The Bradley will solve most of these problems, but we will not see the Bradley totally fielded for a few years yet. We therefore need to improve our capabilities now with what we have.

The .50 caliber machinegun is notorious for its inaccuracy when fired on the move. This was demonstrated during my unit's mechanized gunnery training and at the NTC, when

only one or two men could effectively handle the gun while firing on the move, and both of those men were unusually big and strong. Then again, "effective" is a relative term. But they kept their bullets in the general direction of the targets, which was better than the other men could do.

We need a much better mount that will let the average soldier control his weapon effectively, keep accurate fire on the target while moving or at a halt, and fire from under cover.

Many attempts have been made to solve this problem. The M59 series of APCs had a turret for its .50 caliber machinegun. Various turrets have been mounted on M113s with guns ranging from 7.62mm machineguns to 76mm cannons. To keep things simple, it should be possible to incorporate the .50 caliber mount from an M1 Abrams tank into an M113. This would give a gunner better control over and accuracy with his weapon, and still enable the gun to be fired (but not cleared) from under cover. With the .50 caliber SLAP (sabot light armor-piercing) ammunition (which gives the .50 caliber a more effective round to use against Soviet HIND gunships and BMPs), we may have an answer that will be cheap and effective, at least until we can get something better.

Should we stop here, though? The .50 caliber is an excellent weapon; it gives good firepower for its weight, and we can carry a lot of ammunition for it. But is it enough?

A mixture of weapons is normally better than just one type, and it may be possible to incorporate another type of weapon into the platoon. What I am referring to is the 40mm Mark 19 grenade launcher. During the Vietnam war, a similar weapon was found to be superior to the .50 caliber, particularly in ambush-busting.

Think of it—two .50 calibers in the platoon to pin the enemy down with tracers and high velocity rounds, and two 40mm grenade launchers! The two weapons could complement each other, and while resupply headaches might increase, the results would be worthwhile.

OTHER SOLUTIONS

There are other possible solutions: A soft-recoil 30mm cannon that combines the best of both the .50 and the 40mm is one. Less ammunition could be carried, but it should be more effective against the threat we face today. There have also been tests on a new turret for the Bradley that would house a 35mm gun, and one has been tested on an M113 hull as well. This could solve a lot of firepower problems, giving us an effective 35mm gun for AP or HE roles, and a coaxial 7.62mm machinegun to use against troops.

Our current 7.62mm M60 is a pretty fine piece; I have used it for years and it does a good job. It could be lighter, and there is a new lightweight version out that weighs little more than an old *Browning automatic rifle*. What we need, though, is a way to make our M60s more effective. The Israelis use pintles on the sides of their APCs which provide stable and accurate mounts for their 7.62mm machineguns firing off the sides of the tracks. We used a similar system on the armored cavalry fighting vehicles in Vietnam, and it was effective. Instead of lashing the tripods down on one side or

the other of the M113 to get a stable firing mount with good traverse from the sides of the tracks, I would rather see two M60s carried with each squad and have pintles for mounting them on both sides of the M113, so as to cover both flanks. I would use the M60s for mounted work and leave them with the track most of the time, using our SAWs when we dismount (whenever we get them). I want to keep the M60s since they can fire good armor-piercing rounds for use against light vehicles, as well as incendiary and tracer rounds.

By having two SAWs and two M60s as standard equipment with every track, plus a .50 caliber or larger weapon, we would also have enough firepower in the defense for a squad to hold off a platoon or better by itself, assuming we could man them.

Currently, we also have the M901 ITV for our heavy long-range fire support, and it is a good system. At the company and platoon levels we have the Dragon missile system and the M72A2 LAW. (Nobody is really happy with the Dragon.) These are also the weapons we have for bunkers and other hard targets. The LAW is due to be replaced by the 84mm AT4, which from my readings should be a fine weapon for us to have, with excellent effect against any bunkers we may encounter.

Although HEAT rounds do a pretty fair job of putting holes in things, they are not the best thing to use on a bunker. We need something that will put a satchel charge right into the bunker, and there are things on the market that will do it.

Speaking of the Dragon, I would rather have something along the lines of a true fire-and-forget system. Give us an unguided round or recoilless rocket, accurate enough to kill at 1,500 meters, and then train the gunners to shoot it. Technology cannot make up for skill. We need something simple, powerful, accurate, and cheap. Another weapon that could be fired from a cupola mount or adapted to a tripod for accuracy would be a great boon. In short, we want something to kill tanks and other armored vehicles with, and if it is also effective against helicopters and bunkers or buildings, so much the better.

Incidentally, we do have the M202A2 four-barreled 66mm launcher, for firing incendiary rounds. It's an interesting weapon, like four LAW tubes glued together. We have not used it much in my unit and have conducted no training with it, aside from what I give my platoon with no ammunition. This is a pity. It's another good weapon we should train our troops on so that they can take advantage of its characteristics.

To do that, we need to get beyond the "TASK, CONDITION, and STANDARD" in the Soldier's Manuals. The Soldier's Manuals are excellent for teaching the basics, but they give little thought to the advanced techniques. For example, the M202A2 is good for bunker-busting, burning wood bridges or buildings, and forcing tanks to button up, or their occupants to panic and dismount.

Flame is one of the oldest weapons in the inventory, and in mechanized infantry we can carry the materials needed to make improvised flame weapons — soap powder, containers, and the like. By using the lessons from past wars, we can train our troops to make the most of flame weapons, both issued and improvised.



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As for indirect fire, at the NTC this year I really missed the company level mortars my light units had. Even a couple of 60mm mortars would have been a great help, especially with illumination at night.

There is a basic flaw in reducing the number of mortars in an infantry battalion from 13 to 6. Six mortars can cover a maximum of six targets at a time. I know about target lists and priority targets, but what happens if a squad on outpost gets hit and no fire support assets are available? With company mortars always at company level, we never lost the support. Give every platoon a 60mm mortar, train the men to use it, and let us go at it. Add two men to the platoon headquarters as mortarmen, and so much the better. The platoon leader or platoon sergeant could control them. The benefit in firepower would be worth the investment.

At battalion level I would rather see a mortar company composed of 12 guns, or four three-gun platoons. The new 120mm mortar the Army is getting is a fine weapon, but my reasoning is this: Each line company needs fire support. A mortar platoon per company for fire support, particularly with the new GAMP round, would give us the firepower edge over any enemy we might come up against.

If 12 guns is considered excessive, why not increase the present number to eight mortars? That would give us four

two-gun sections, which would give every company some measure of fire support but still allow for the massing of fires when necessary.

This brings me to individual weapons. I have carried quite a few rifles in my time—M14s, FN FALs, G3s, AKMs, and even M16s. I was originally trained in high school with the M14, and I appreciate its fine accuracy. No matter what my own preference is, though, the M16 is what we have, and it is about as good as the other weapons that are touted as being better. But a soldier needs to believe in his weapon, and the M16 does not give him a lot of faith. It jams on him too often no matter what he does, and most M16A1s are pretty worn out. (The jamming is often blamed on bad magazines, and although research is going on with plastic magazines to correct this problem, the doubts are still there.)

The M16A2s I saw the Marines carrying at the NTC impressed me. The M16A2, particularly with the optical sight that is being tested, should cure most of the ills of the M16A1, but it will take a battle to prove to our soldiers that their weapons are the best. (Also, we would be better off if we issued only semi-automatic rifles, with good triggers, and got rid of the gimmicky three-shot burst on the M16A2. For firing at aircraft, a three-round burst is not enough; for ground targets it is a waste of ammunition.)

This gets to my final point about rifles. It does not really matter what the rifle is as long as soldiers get good, continuous training with it. But firing 40 rounds a year does not make a man a good shooter.

Using MILES is not good enough. A soldier needs to fire

live ammunition to get a feel for his weapon, know its zero, and be confident that he can hit his target! Nothing can replace rifle practice with live ammunition on ranges where the firer has to maneuver and shoot, and shoot to hit from every position imaginable. Target shooting is fine and an excellent start, but then we need to progress and teach our men to kill other men, quickly and efficiently, with a rifle.

Submachineguns and carbines are usually very popular weapons when they are available. They look sexy and mark the soldiers who carry them as somebody different. But I believe they should be left to the special operations types who are trained to use them.

There are exceptions, of course. I believe drivers and track commanders should carry rifles in their tracks; then, if a track is disabled and the two have to dismount, they will be armed like everybody else. But they need something more, something they can carry in chest holsters, independent of their LCE so that they will be armed all of the time. A good candidate for this is Beretta's 93R, which is a compact, controllable, submachinegun that would be little burden to the supply system, because it is almost identical to the model 92 pistol recently adopted by the Department of Defense. It is also accurate and effective out to 100 meters, which means we would have another weapon to train with, but it beats having men killed because their weapons are out of reach.

The grenade launcher is another important weapon in a mechanized infantry unit. The M203 has its faults — one shot, not as accurate as the M79, and the grenadier has a tendency to forget his grenade launcher and fire only his rifle. The M203 is a rather fragile weapon, too, judging by the amount of time mine spends in repair.

We still have to contend with the "loss" of a rifle from the squad. I think the firepower of two grenade launchers would make up for it. The grenadiers would stick to their primary job of grenading things. They, too, could carry Beretta M93Rs, which would give them effective short-range firepower without overburdening them.

Every man in the squad should carry extra grenades for the grenadiers — if you have to break contact, it is easier to do with a barrage of high explosive rounds that make the enemy think he is getting hit by artillery.

PROTECTION

Aside from all this firepower we have, we also need to be aware of the fire coming at us. While we need all the firepower we can get, we need additional protection, too. What I am referring to is the flak vests issued to ground troops together with the Kevlar helmet. The helmet will stop bullets, but the vest itself is good only against fragments. Surely we can give our soldiers better protection and less weight than we are giving them now.

On the M113 itself, the latest version, the M113A3 (as described in the September-October 1985 issue of *INFANTRY*, page 8), has the fuel tanks on the outside, a more powerful engine, and fixtures for mounting Kevlar blankets to increase the survivability of the troops inside. We still



We still have the problem of trying to fight from the carrier.

have the problem of trying to fight from the carrier, however, and since we will have the M113 series well into the year 2000, this is something we should consider.

Now, with the cargo hatch open, the troops in an M113 are vulnerable to air-burst artillery fire, and when they button up for NBC attacks, they are blind and helpless. It also takes precious seconds to close the cargo hatch.

A possible solution would be to install light tubular framing around the cargo hatch and cover it with a ballistic blanket of Kevlar. This would keep the weight down, offer better overhead cover than we have now, and, if large firing ports were left in the sides of the blanket, would enable us to continue to observe and fight even in MOPP-4.

Another modification that could be made is to put an observation port in the troop door of the M113A3—the same kind used on the ITV (improved TOW vehicle).

In my unit, NBC training is tough and realistic. We spend a lot of time in MOPP-4 and practice buttoning up and masking every time we get hit by air or artillery. In addition to being blind when buttoned up, when we mask we cannot aim and fire our rifles accurately. With the M17 or M25 series masks, we either point and hope or pull our heads back to the heel of the butt in a vain attempt to get a good sight picture, but then our zeros are off since we are seeing the sights from a distance. We also have problems with masks fogging up and with making ourselves understood over a radio, or understood at all.

There are new masks coming out, and I can only hope they will solve these problems.

Warfare is now a 24-hour proposition, and we need all the night vision we can get to enable us to fight as effectively at night as during the day. We still need more practice in night operations, and we should have a more liberal allowance of night vision devices.

The AN/TVS-5, our main crew-served night vision sight, is a wonderful device — when it works, but it seems to blink out fast. A tracer will still burn it out, or the reticle will not light, or the picture will just go blank. I had the same problems with TVS-5s in light infantry units, so obviously it is a problem that needs correcting.

Individual sights for grenadiers and riflemen are also needed. In fact, I would like to see something small and light

enough to issue to every man in the squad. But if we can't do that, then we should spend more time shooting at night so the men will be more confident in their ability to react to and suppress enemy fire at night.

LOGISTICS

Logistics is definitely a problem in mechanized units. All we have in the company for transportation is a two-and-a-half ton truck and a quarter-ton jeep with a trailer. Jeeps and trucks, no matter how good the intentions, cannot keep up with a tracked vehicle or cross the same terrain. Besides, jeeps are going out of the inventory, and my First Sergeant's jeep was transferred to somebody else whose jeep had been coded out, leaving the First Sergeant with only a truck for company logistical support.

The support platoon? It is too overworked now. With the distance between companies and the amount of material required, we end up attaching men to the company headquarters from the line platoons just so we can accomplish our missions. The supply sergeant needs at least three men to make a four-man company logistical unit, which would give him the manpower he needs to load and unload supplies and move them from the combat trains to the line platoons. The First Sergeant needs a driver and a radio-telephone operator assigned to him as part of the headquarters. He also needs a vehicle that can keep up with the tracks — either a stripped-down M113 or an M548, something that can carry a great deal of ammunition and food and keep up with the company. HMMWVs (high mobility, multipurpose wheeled vehicles) will not be able to do this — a tracked cargo vehicle is needed. If we give the company headquarters section the men and vehicles to accomplish its mission, we will not have to take riflemen from the line platoons to keep the supplies flowing.

A final item for discussion is communications. Our mounted radios are pretty good. Sometimes a radio will blink out after a hard jolt, and the new disposable mikes do not last long, but, overall, we get the job done.

We tend to be overly dependent on our radios anyway. We need to use them in a more disciplined, frugal manner. Repetitious orders only relay fear and uncertainty, and too many "radio checks" by people who are nervous and just want to be reassured someone is there can easily pinpoint for the enemy a unit's location within ten meters.

We have found that flag signals, hand and arm signals, and SOPs are better for controlling our tactical movement. These signals can be seen by everyone as long as there is visibility, and they should be used as much as possible.

Dismounted communications are not as good. Mechanized

infantry units are issued only obsolete squad radios, two-piece AN/PRC-88s, which have not worked well in any unit I have ever been in. This radio has a short battery life, is fragile, goes out at the worst times, is not compatible with the AN/PRC-77s, and generally is not worth the trouble it causes. Besides, it is unbalanced and awkward.

Some units have the AN/PRC-68, which is slightly better but it does not do a good enough job either. Fortunately, better radios that will solve these problems are in the works.

We have taken steps to make the most of what we do have in my platoon by drilling with hand and arm signals, by using mirror or flashlight/pyrotechnic signals, and by converting one of our AN/GRC-160s into an AN/PRC-77 mode for dismounted operations. Thus, we have been able to control the dismounted squads and the carriers at the same time. Of course, all of this requires practice, but it enables everybody to know what to do in advance; then there is less need for verbal communication.

Mechanized infantry held a lot of surprises for me. Its tactical mobility is something that amazes me. The ground it can cover in minutes takes light infantry on foot hours to cross (without opposition). This tactical mobility, the ability to bypass impassable terrain (of which there is actually very little), enables us to move faster and arrive fresher than any light infantry in the world.

We can carry more ammunition, enabling us to fight longer; more food and water, enabling us to stay longer; and barrier material, making us harder to dig out.

There are some disadvantages to the mechanized infantry, of course. It makes a lot of noise. It needs a heavy logistical tail, because it has to be kept supplied with oil, water, ammunition, and parts. As reliable as the M113s are, they do break down, and after a few weeks in the field we start having serious maintenance problems from the strain on the equipment.

One of the biggest lessons I have learned is that mechanized infantry is not roadbound — where there are no roads, tracks, tanks, and engineers can make them.

With our equipment, our firepower, our speed, we can accomplish any mission given to us, but these things are not substitutes for leadership and training. We need to challenge ourselves to make the most of what we have now. Above all else, we need to train our men to fight, mounted and dismounted, with everything they have.



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TRAINING NOTES



Dragon Maintenance Management

CAPTAIN G.A. SILVERMAN

The Dragon missile system is the primary antiarmor weapon in all infantry rifle companies, yet it and its related training equipment are among the most neglected items when it comes to organizational maintenance. All too often, services are behind schedule, maintenance records are nonexistent, and Dragon training equipment sits untouched in a corner of the arms room.

There is a significant lack of understanding of how to maintain missile equipment at company level. This is compounded by the fact that none of the schools that company-grade infantry officers attend — IOBC, IOAC, and the Maintenance Officer Course — teach anything about managing missile maintenance.

Dragon organizational maintenance includes many component tasks, and there is a great deal for a company commander to check to see that all the necessary tasks are accomplished.

First, commanders must be aware that the Dragon missile system is a "pacing item," which is defined by AR 220-1 (Unit Status Reporting) as "a major weapon system that is central to an organization's capability to perform its designed TOE/MTOE mission," an item that is "subject to continuous monitoring and management at all levels of

command." A pacing item is a limiting factor in determining a battalion's equipment status rating on the Unit Status Report. Thus, that rating cannot be higher than a unit's lowest rating on a pacing item. This makes a pacing item one of the most critical in a rifle compa-



ny, but it is surprising how many captains and lieutenants have never heard the term.

The reportable components of the Dragon system are the tracker (GM Infrared SU-36/P); the night vision sight (AN/TAS-5); the guided missile and launcher (M222/223); and, for mechanized infantry units, the night sight vehicle power conditioner and the mount (M175).

These components are reported to Department of the Army through the Missile Materiel Readiness Report (DA Form 3266-1). If any of them become inoperative, the entire system must be reported as "not mission capable" for that period.

Dragon training equipment—the monitoring set (AN/TSQ-T1); the launch effects trainer (GM M54); the infrared transmitting set (M89E1); and the field handling trainer (M57) — is not reportable to DA. Nevertheless, managing training equipment is as important as managing the weapon itself because effective training cannot take place without it.

One of the biggest misunderstandings regarding missile systems involves organizational maintenance, which for the Dragon is performed at company level and consists of the following activities:

- Keeping historical records (TAMMS).
- Performing preventive maintenance checks and services (PMCS).
- Scheduling required direct support (DS) maintenance services.
- Making repairs within the scope of the owning unit.
- Evacuating inoperative equipment to direct support maintenance units.

To manage his Dragon maintenance program efficiently, a company com-

Dragon Maintenance Management Tasks

Dragon Organizational Maintenance Activities	Company Commander Checks	Reference
Maintain historical records.	Inspect records.	DA Pam 738-750.
PMCS.	Check equipment returned to arms room after training.	Operator's Manual.
Schedule semiannual/annual services to be performed by DS maintenance unit.	Ensure that services are scheduled and completed services are recorded.	DS External SOP.
Evacuation of equipment to DS maintenance.	Ensure that items are evacuated in a timely manner.	DS External SOP.
Stock parts and supplies authorized for organizational maintenance.	Check parts/supplies on hand. Verify document numbers for items on order.	Expendable Supplies Appendix of Operator's TM, Repair Parts Manual.
Readiness reporting.	Ensure that not-mission-capable systems are promptly reported by component to battalion.	AR 750-40.

mander must check several things to make sure the critical organizational maintenance activities are being performed (see checklist). And before any maintenance can be performed on the Dragon or its equipment, the unit must have the following publications:

- TM 9-1425-484-10 (operator's manual for the Dragon weapon system)
- TM 9-6920-484-12 (operator/organizational maintenance manual for Dragon training equipment).
- TM 9-6920-480-24P-1 (repair parts manual for Dragon training equipment).
- TM 11-5585-254-14&P (operator's manual for battery charger (PP-7382/TAS)).
- DA Pamphlet 738-750 (The Army Maintenance Management System).
- AR 750-40 (Missile Materiel Readiness Report).
- External SOP of the company's direct support maintenance battalion.

Certain records also must be maintained for each component of the Dragon system, and the unit armorer is the man who should maintain them. He must read and understand DA Pamphlet 738-750. (The records required are listed in Appendix E of that pamphlet.) The company executive officer should supervise the entire company maintenance program and make sure all records are accurate and up to date.

DS MAINTENANCE

Periodic services on the Dragon must be performed by the DS missile maintenance unit. Again, the unit armorer is the key man in making sure these services are not overdue, and the company XO should closely monitor the scheduling of services for all weapons.

Operational tests must be performed quarterly on the tracker, the night tracker, the monitoring set, and the launch effects trainer (LET). In addition, the LET must be disassembled and cleaned semi-annually.

If the DS contact team performs these services at the unit, the armorer must make sure the team notes the services on the appropriate TAMMS form. Although no DS services are required for the transmitting set, it should also be

checked by DS at least semiannually or before training. It should also be noted that the transmitting set and its power supply modulator are a matched pair; their power output must be adjusted and matched to each other by the DS unit at least semiannually or before training. Once they have been matched, both components should be labeled so that they remain matched. If one of the pair is turned in for repair or exchange, the other must accompany it for readjustment.

Organizational maintenance, by definition, is done at company or battalion level. The DS unit cannot be expected to perform repairs that are authorized at organizational level or to order parts. Certain expendable supplies (desiccant to absorb moisture in the monitoring set, air filters for the IR transmitter) can be ordered and stocked at company level. These items are listed in an appendix in every operator's manual and must be on hand or on order at all times. PMCS cannot be performed properly without them.

As for the Dragon training equipment, it is among the most expensive, yet neglected items in any infantry unit.

Typically, this is what happens: The equipment sits in the arms room, sometimes in the HHC, until a company must run a Dragon training range. (The armorer does not maintain it, because he has no publications or no training in how to maintain it — or he does not even know what the equipment is.) The equipment goes to the range where it is found to be inoperative, and the cry goes out for the DS missile maintenance contact team. The team rushes out to the range only to find that the monitoring set's batteries have not been charged, it is full of moisture because the desiccant has not been changed, the LET has not been cleaned since the last firing, and the IR transmitter is not putting out signals because its air filters are clogged.

The way to correct this situation is simple. The commander must see that the manuals are read and followed, designating personnel to maintain the equipment and holding them responsible by checking periodically.

Before he can hold them responsible, however, he must see that everyone involved has been properly trained, especially the pivotal man, the armorer. (The average armorer, MOS 76Y, has

received no training in maintaining missile system equipment.) Obviously, operators and supervisors also must be trained before they can do any PMCS, and the company executive officer must be trained in missile equipment maintenance if he is to supervise the unit's program.

Maintaining missile system equipment is not essentially different from maintaining vehicles, small arms, or radios in regard to publications, records, repair parts, personnel, training, and time. The most important factor, however, is command emphasis, which brings all the other factors together to produce an

effective maintenance program and a combat-ready unit.

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Light Infantry Weapons Squads

CAPTAIN WILLIAM E. HARNER

Over the past two or three years, various agencies and subject matter experts have been developing organizations and doctrine for the Army's new light infantry divisions.

The 7th Infantry Division (Light), which converted to the new configuration toward the end of 1985, has become a member of the Rapid Deployment Force and has been involved in an extensive one-year certification process to validate light division concepts.

For light infantry units, one of the most important certification issues is to determine the most effective organization for employing M60 machineguns and medium antiarmor weapons (Dragons) in the rifle companies.

Eight of the nine infantry battalions of the 7th Division are formally organized under the current table of organization and equipment (TOE), with the Dragons consolidated in an antiarmor section under the company headquarters and with two machineguns assigned to each platoon headquarters. During its train-up period before receiving 333 graduates from One Station Unit Training (OSUT), the other battalion—the 4th Battalion, 17th Infantry—was chosen to implement the weapons squad concept instead.

A weapons squad consists of nine men

with two Dragon teams and two machinegun teams under the control of a staff sergeant squad leader. Each of a company's three rifle platoons has one weapons squad.

The personnel and equipment to form the weapons squad came from the current antiarmor section and the rifle platoon machinegun crews. The weapons squad does require two additional staff sergeant squad leaders per company over the existing personnel authorizations.

SQUAD LEADERS

In organizing their weapons squads, the company commanders chose their weapons squad leaders carefully, looking for maturity, experience, initiative, and technical proficiency in both the M60 machinegun and the Dragon. The NCOs selected for these positions included former antitank platoon and section sergeants, a two-time captain of the winning team in an M60 machinegun competition, and several Vietnam veterans.

These weapons squad leaders, as members of the COHORT battalion cadre, then attended the Light Leader Course taught by Fort Benning's Ranger Division. The program of instruction, which was based

on Field Circular 7-15, Light Infantry Squad and Platoon Operations and ARTEP Mission Training Plan, had to be modified slightly to work with the weapons squad in platoon missions. This was an easy adjustment, however, because Ranger companies have weapons squads in their TOE.

By the time the course ended, several things were clear:

- The leader-to-led ratio was obviously better with the two additional NCOs. The weapons squad leader was responsible for only eight men instead of 12 as in the antiarmor section configuration.
- The weapons squad made NCO supervision of the M60 machinegun crews easier, thereby freeing the platoon sergeant to help the platoon leader lead the platoon.
- The internal configuration of the weapons squad could be arranged into mutually supporting teams, which had one machinegun crew and one Dragon crew each.
- The weapons squad leader became the assistant platoon sergeant.

The selection of soldiers to man the weapons squad was competitive. Before they graduated from OSUT, their individual training records were screened for their weapon qualification and Army Phy-

sical Readiness Test scores, and for their overall performance as shown by an informal critique the OSUT drill sergeants provided.

The relationship between the squad leaders and the drill sergeants, in particular, proved invaluable in getting the weapons squad training program off to a fast start. Also, each weapons squad leader in the battalion had an unprecedented opportunity to observe future members of their squads for a fifteen-day period during an OSUT add-on evaluation at the Army Training Center at Fort Benning. (The low attrition rate in the weapons squads over the next seven months was a direct reflection on the selection process.)

Once the battalion had been fully assembled at Fort Ord, an intensive six-month training cycle began. This period included the Rites of Passage; the light infantry course; squad, platoon, company, and battalion ARTEPs; and battalion training in Celtic Cross III, the division's annual "war." (See also "COHORT Company Training Program," by Lieutenant Colonel Joseph C. Windle and Captain Harold E. Raugh, Jr., *INFANTRY*, November-December 1984, pp. 26-29.)

Although the learning process continues for the battalion, some conclusions can already be drawn.

Foremost among these conclusions is that light infantry doctrine has not caught up with the TOE force design. The Army Chief of Staff's White Paper on Light Infantry requires that our infantry forces become experts in low-intensity operations in which "initiative, stealth, and surprise" are paramount. The lack of a formidable armor threat in a low-intensity conflict develops an undefined role for company Dragons (there is little use for them in attacks by infiltration, air assault, ambush, or raid).

In low-intensity warfare training, even the companies of the battalions organized under the regular TOE either have used their antiarmor sections in an informal weapons squad configuration or have used them out in front as reconnaissance forces. (Although this is only a technique, it is well documented that the Dragon gunner's skill is already highly perishable without putting the well-trained gunners and their weapons out front as regular infantry forces. Integrating antiarmor section per-

sonnel into platoons as rifle assets on a mission-by-mission basis only fosters confusion.)

The weapons squad configuration gives a commander more flexibility if the conflict should intensify, or in the event his unit is introduced into mid- or high-intensity operations. During the 7th Division's annual exercise in 1985, the brigade commander successfully took the 4th Battalion, 17th Infantry's TOWs and Dragons and attached them to another battalion that had an armor threat in its sector. Further, during company raid and stalking attack missions the weapons squads received additional machineguns and acted independently under the company commander's control, while the Dragon crews remained with their squads to provide local security. In an elastic defense, the Dragons were brought forward from the company trains and the weapons squad teams were set into mutually supporting positions. This flexibility can be directly attributed to the supervision provided by the leaders of the weapons squads.

The weapons squad provides the ideal responsiveness and concentration of antiarmor and machinegun firepower on the most likely enemy avenues of approach into platoon defensive sectors. Cross-training teams on both weapons should therefore be the rule, not the exception.



Then, when his teams are deployed, a company commander can be assured that his crew-served systems will be correctly manned at all times. (The addition of the squad leader and Dragon crews also increases the foxhole strength of each platoon by five riflemen who are fully versed in platoon SOPs.)

Finally, in low-intensity situations, Dragon crews can be used as security teams for platoon missions, and the platoon's rifle squads will remain intact for the assault element.

The hallmark of light infantry units is their ability to conduct bold, aggressive actions anywhere in the world at any time. It is therefore incumbent upon our Army leadership to provide the best configuration for its cutting edge.

The weapons squad has proved its usefulness in the most demanding training through the flexibility and responsiveness it has given its commanders and through the punch it provides as a combat multiplier. It should be a part of the TOE of a light infantry rifle company.

Captain William E. Harner is a company commander in the 7th Infantry Division at Fort Ord. He previously served as a rifle and weapons platoon leader and as a battalion S-4, a brigade S-3, and a company XO in Europe. He is a 1976 graduate of the United States Military Academy.

Iron Squad Stakes

CAPTAIN CHARLES W. PAXTON
LIEUTENANT JOHN S. WEAVER

An INFANTRY article entitled "MILES Game Equals Training" (January-February 1985, pp. 39-42) described the merits of a squad MILES competition developed in the 3d Infantry Division. That game is credited with inspiring further development of this kind of training in the 1st Armored Division. We call our version the Iron Squad Stakes.

The Iron Squad Stakes incorporate three distinct scenarios—open field, MOUT, and woodland—into one complete package. This three-pronged approach is a simple but important modification of the 3d Division's game. While it is important that dismounted infantrymen learn to fight on open terrain, it is imperative that they be proficient in wooded and urban areas as well. This is especially relevant to the U.S. soldiers stationed in Europe where villages, woods, and open fields abound.

In two of the scenarios—a meeting engagement in a woodland environment and a meeting engagement on an open field—the objective of each squad is to decisively engage and defeat another in a head-to-head confrontation. In the MOUT scenario, a squad is required to assault a building that is defended by a three-man sniper element. This contrasts sharply with the 3d Division's game in which the squads are assigned to separate lanes. Again, the modification was intended to increase the training value and the close combat realism of the competition.

One of the best features of the Iron Squad Stakes is the unique scoring system. The participating squads can earn points in two different categories. In the first and most fundamental, points are awarded for each "kill" a squad obtains. In the second category, a squad can earn points for suc-

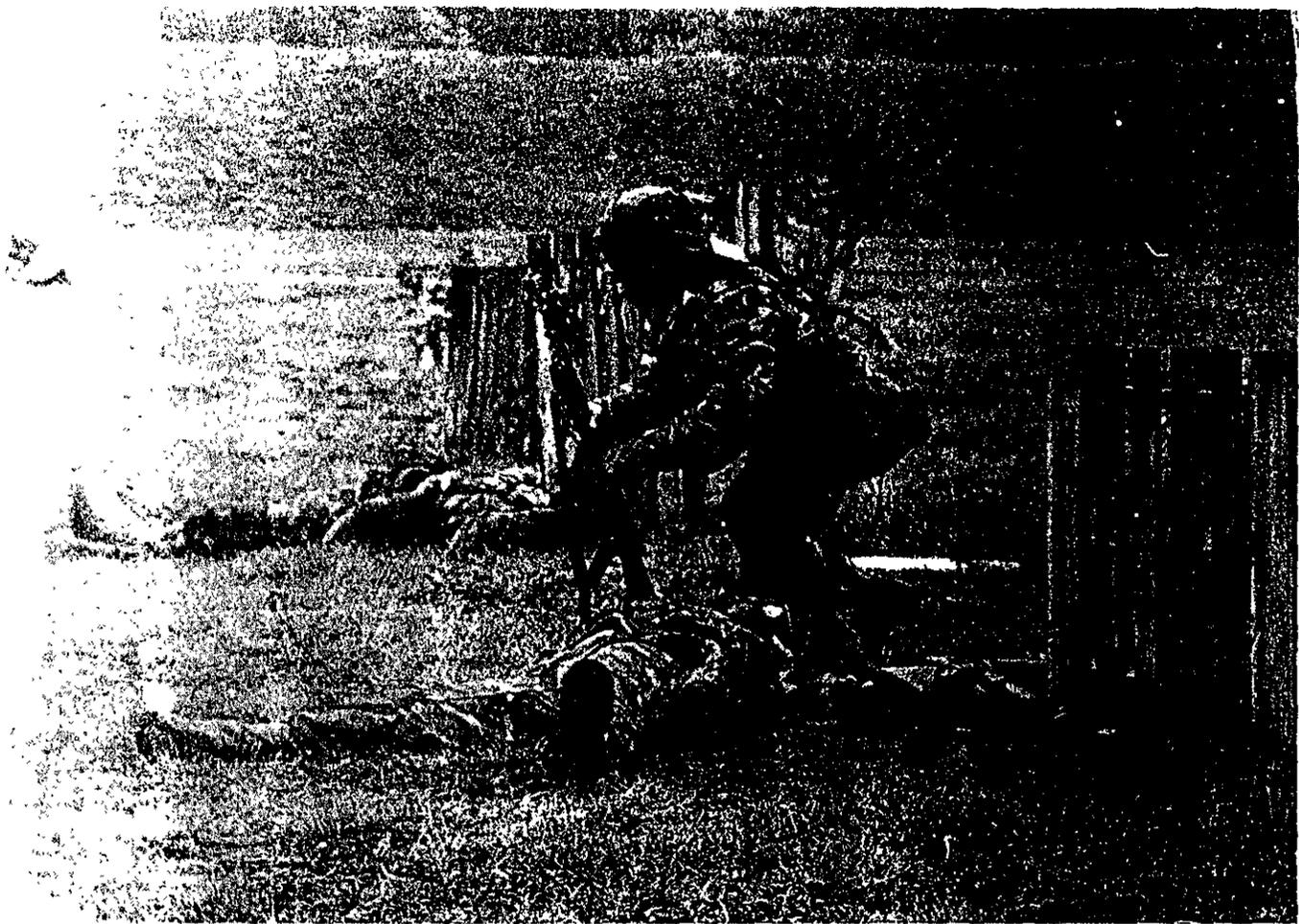
cessfully performing essential individual and collective tasks. (These tasks, taken directly from the 11B Soldier's Manual, correspond to the appropriate skill levels. Among these critical tasks are Selection of Proper Movement Techniques (071-326-5610); Move as Member of a Fire Team (071-326-0501); Move Over, Through, or Around Obstacles (071-326-0503); Fire Control and Distribution (071-326-5501); and The Squad Leader's Fragmentary Order (071-332-5002).)

By incorporating these fundamental infantry tasks into the scoring scheme, we reward technique as well as success, and positively reinforce current U.S. Army Infantry School doctrine.

These tasks also provide an excellent training tool for our trainers and leaders. With the results from the task scores as well as the "kill" scores, leaders can



Points are awarded for each kill a squad obtains.



Soldiers must be proficient in woodland areas.

more accurately examine the reasons behind the successes and failures of their squads.

Here, attention is given to the relative value of the tasks that are scored. Logically, a greater weight should be attached to the number of "kills" a squad gets, because the mission always takes precedence. Accordingly, the scoring ratio between "kills" and tasks is about 6:4.

With these scoring procedures, the Iron Squad Stakes enable companies and battalions to evaluate their TOE squads and rank them from best to worst. If two squads score high in the "kills" category but only one of them does well on its tasks, then that squad is clearly the winner.

But the competence with which these tasks are graded is essential to the legitimacy of the scoring as well as to a successful competition. Graders, therefore, are obviously important. Unless the graders are intimately familiar with the tasks, conditions, and standards involved, they will not be able to render the most accu-

rate scores. Increased familiarity with the graded tasks is also essential to a meaningful after-action review.

These prerequisites make experienced NCOs and junior officers well-suited to serve as graders. Ideally, a commander can use his platoon leaders and platoon sergeants in this capacity. This makes sense, because the participating squads are likely to come from their own platoons. Thus, the leaders and trainers have a big stake in the training value of the competition.

SUCCESSFUL

Competitions similar to the Iron Squad Stakes can be conducted by just about any unit. The 1st Battalion, 52d Infantry ran all 36 of its TOE squads through the Stakes in two days. During this time, the battalion proved that this competition could be conducted successfully on a fairly large scale.

The results of the competition were well

worth the effort it took to make it work. In two days all the key leaders in the battalion gained invaluable information on the dismounted fighting ability of their squads. At the same time, the morale and fighting spirit of the battalion's infantrymen was given a healthy boost.

The competitions demand no fixed requirements. The Iron Squad Stakes were developed so that a commander could build upon or streamline the basic concept. Examples of this would include the incorporation of nuclear, biological, chemical (NBC), or night fighting into the Stakes.

On the other hand, the available resources may limit the amount of ammunition and pyrotechnics that can be used, but these limitations can serve as an additional training tool by introducing the squad leader and the soldiers to the use of fire control and distribution.

Some basic requirements must be met, of course, if such a competition is to get off the ground. In Germany, most of the

TRAINING NOTES

U.S. Army installations have access to training areas sufficient for all three scenarios. In other areas, the MOUT site, for example, can be questionable; if so, this can be left out.

Another consideration that cannot be ignored is the availability of MILES equipment. This is the biggest hurdle, because both the realism of the exercise and the objectivity of the scoring process hinge on the MILES gear. (Unit training NCOs can help with it.)

Finally, there is a requirement for 5.56mm and 7.62mm ammunition. In the LOI we developed, the figure arrived at was 80 rounds of 5.56mm per rifleman per scenario and 250 rounds of 7.62mm per machinegunner per scenario, but fig-

ures are only working guidelines. (We will gladly furnish copies of the LOI to anyone who is interested.)

Squad-on-squad competitions are not new, but the Iron Squad Stakes are somewhat different. What the 1st Armored Division has laid out are some practical guidelines to a dynamic competition. The goal was to substantially increase the training value the infantry squads of the division were receiving, and that goal has been realized. The results achieved show great promise for improving squad combat skills throughout all the infantry battalions of the division.

Now it is up to other infantry battalions to take up the challenge and use their own imaginations. This is just a glimpse of

things to come in small unit infantry training, and anyone seriously interested in training should take notice.



Captain Charles W. Paxton is a 1976 graduate of *George Mason University*. He has served as a rifle platoon leader and a scout platoon leader and is now a company commander in the 1st Battalion, 52d Infantry.



Lieutenant John S. Weaver is a rifle platoon leader in the 1st Battalion, 52d Infantry. He is a 1983 graduate of the University of Kansas.

Depth Through Initial Positioning

CAPTAIN THOMAS P. KRATMAN

Many of our doctrine experts today seem to be expressing preconceived and ill-reasoned notions of what is tactically sound when they present their views on our new light infantry units and their role in maneuver warfare, particularly their defensive role.

To them, the only threat our light infantry forces can expect to face is the one represented by the heavy mechanized and armor forces of the Warsaw Pact in Europe or those of certain military powers in the Middle East. Therefore, they postulate, because our light infantry units cannot outrace heavy forces in open country, and because they have no protection other than from their fighting positions, a light infantry rifle company can get defensive depth only through its initial positioning of its platoons and weapons, not by maneuver. Any light infantry unit attempting

to maneuver to establish depth in its defensive position would invariably be caught in the open and destroyed.

This reasoning may appear sound for a situation in which light infantry forces are pitted against mechanized forces in country that naturally favors a fast-moving mounted attacker and in which those same light infantry units have not been given enough time to prepare fortifications and obstacles.

OPPORTUNITIES

But there are many other possible situations, and against mechanized forces there will be many occasions and circumstances in which light infantry units will have an opportunity to maneuver to gain depth in the defense. Once a Soviet motorized ri-

fle division, for example, dismounts, it becomes just another light infantry division with relatively poor training as light infantry and an enormous logistic tail only partly offset by greater organic firepower. The keys to forcing such a unit to dismount are *terrain, weather, and time*.

Cities, jungles, mountains, rivers, fortifications, muddy open areas, and some desert terrain will force an attacking mechanized force to operate dismounted much or all of the time. These are clearly the types of areas in which light infantry should be employed. Since our senior commanders are neither stupid nor irresponsible, we can predict that light infantry will usually be employed in such restrictive areas or, where such areas are not available, will be given time to fortify extensively. By virtue of a defender's ability to reconnoiter and rehearse routes to

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subsequent positions, our light infantry should be able to conduct a retrograde maneuver faster than dismounted enemy mechanized troops will be able to advance.

Most of this kind of terrain provides light troops with considerable protection from an enemy's direct and indirect fires. Cities and fortifications give excellent cover and concealment to troops maneuvering inside them. Mountains negate much of the effect of high explosive fire increasing range probable errors. Jungles make target acquisition considerably harder. Under these conditions there is no good, general reason for prohibiting light infantry to use maneuver to gain depth.

The United States faces many threats besides the mechanized one around the world. These threats range from the mass infantry armies of China, Vietnam, and North Korea to the rebel groups of Cuba, Nicaragua, and various Central American nations. Such armies have little if any advantage over our light infantry in either speed or firepower. The only advantage they are likely to enjoy will be having vast numbers of soldiers at the point of decision. This is similar to the advantage the Warsaw Pact forces will hold in West Germany against our mechanized forces. There, our mechanized units on an open battlefield will often use maneuver to get to subsequent positions and to avoid decisive engagement. Similarly, our light infantry forces should use maneuver fre-

quently to move to subsequent positions they have prepared in depth throughout their sectors to avoid being swamped by greatly superior numbers of equally slow-moving light infantry.

Against such enemies it will be possible to maneuver to positions in depth without fear of being caught in the open. Their firepower in the attack will not normally be able to pin more than a fraction of our units in place, given their relatively austere heavy equipment levels and resupply capability. Without such capability on the part of the light threat, there should be no basis for the injunction against maneuvering in the defense to gain depth.

Throughout most of World War I the defensive doctrine of the various combatants was in complete accord with our current doctrinal teachings. The German Army was the first to break out of that very confining method of operation. At a time when artillery dominated the open ground in a way seldom equalled, the Germans used maneuver in the defense to shift units in depth and made the Allies pay heavily for every yard gained, thus making conditions suitable for a counterattack. The Allies, on the other hand—neglecting defensive maneuver when under German attack—held their positions without maneuvering, relying on their initial positions only. As history shows, the units that employed such tactics against German infiltration tactics were bypassed, cut off, and destroyed piecemeal. They could have

maneuvered to avoid this fate, but their particular dogma—like ours—forbade it. These German infiltration tactics are still the basis of almost every sound offensive tactical doctrine in the world.

Do light infantry or dismounted mechanized troops move faster than the infantry of 1917? No, they do not. Does artillery dominate the ground more than it did in 1917? No, it does not. Will our doctrine, then, work better than it did for the Allies in 1917? No, it certainly will not.

Of the possible variations in METT-T likely to be found by light infantry on a future battlefield, the largest number, and the most likely, would allow for light infantry to use maneuver to gain depth in the defense. Whether against mechanized forces that must dismount to clear obstacles and buildings or against enemy light forces in a jungle, our light infantry will frequently be able to affect vast enemy numbers by maneuvering to subsequent positions in depth.

Doctrine will never be a substitute for a good analysis of METT-T. Our present doctrine, by taking such an absolute stand on the matter, is a bad substitute.

Captain Thomas P. Kratman, an Infantry officer, is assigned to the 2d Battalion, 21st Infantry at Fort Stewart. He is an ROTC graduate of Worcester Polytechnic Institute in Massachusetts and has served as a platoon leader and a rifle company executive officer in Panama.

Taking the First Hill

GEORGE G. EDDY

Let's assume you have just taken command of a battalion under less than favorable conditions and you don't know anyone in it. Your superior has told you that, while he does not want to influence your judgment, he wants you to know he has not been happy with the battalion's per-

formance; it is clear he expects you to "turn things around."

You are about to take on that first hill.

Let's assume, too, that you have already met with your subordinate commanders and have outlined for them in broad terms what you expect from them

and what they can expect from you. Now you are ready to meet with each of them in private sessions to pass on your detailed guidance and to elicit from them information about their particular units.

To do this properly, you should select a "neutral" meeting place, so that your

subordinate commanders will not be intimidated by meeting with you in your office and you won't be constrained by meeting in theirs. You want the meeting to be reasonably relaxed so you can concentrate on important matters in an atmosphere that will promote as free an exchange of thoughts as possible.

Of course, if you really want to cow a subordinate commander, you can have your desk raised on a platform and place his chair before you with its front legs suitably shortened. By this clever arrangement, he will not only be at a much lower level, he will also be pitched forward in a most uncomfortable manner. As you belabor him, you can watch him slide off onto the floor should he foolishly release his grip on the side of the chair to wipe his brow. Further, if you can arrange to have him walk down a long corridor to reach your desk while you sit and glare at his approach, so much the better.

Although no one resorts to such extreme devices, there is little doubt that intimidation practices do occur on one scale or another. Most of us probably can remember times when we wondered if our bosses were naturally beastly or just testing us for a reaction. But making allowances for those times when it really is necessary to put someone on the spot and generate some sweat, we need to be careful what sort of a stage we set for our initial meetings and discussions.

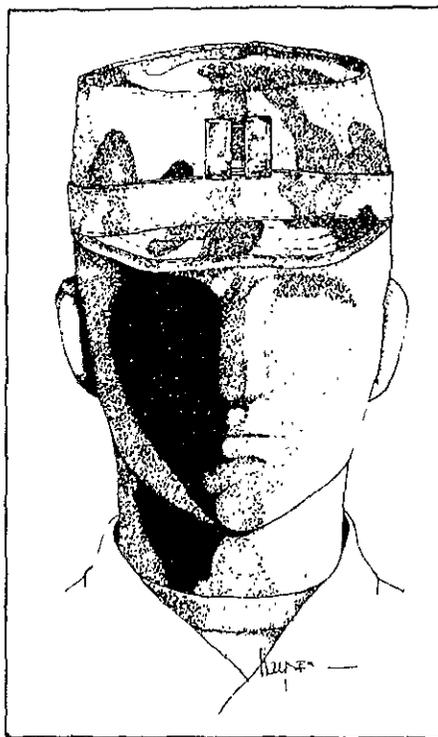
Once an appropriate place has been selected and the preliminaries gotten out of the way, it is important to get an "easy" conversation started. One workable technique is to get a subordinate to talk first about himself. After an appropriate interval, you should channel the discussion to his present job. These are the things you might want to explore:

- The specifics of his position, his responsibilities and decision-making authority, number of men supervised, and the like.

- What is going well, what is not, and why.

- The solutions he has tried and the results, including who else might have been contacted and why (if it's not obvious).

- Considering everything, what still needs to be done, why, and how.



- What part the battalion commander should play in these activities.

- How he interprets the unit's mission and fundamental purpose.

- What he considers his unit's special strengths and weaknesses.

- Who his best leaders are (NCOs first, then officers). The poorest. Remedies.

- Whether he is really proud to be in this outfit and why.

- What he considers to be a leader's proper role and what attributes a leader should possess.

His answers and expressed thoughts in any related discussions are vital, because they give you critical information about each of your key individual leaders. In fact, this is the foundation on which you need to build, and it can be used to improve the caliber of leadership throughout the battalion.

You will not learn all you need to know, of course, from this initial session, but you can learn a great deal if you are alert and reasonably careful in how you guide and control the exchange. You want to avoid creating an impression that it is actually a poorly disguised police-type interrogation of the prime suspect in a major crime.

As your subordinate responds to your questions, comment as appropriate, but don't interrupt him unless it is necessary to keep the conversation on track. Make

mental and written notes to be sure you don't miss anything important that you'll want to recall later, and begin formulating in your mind just how you are going to bring out the factors you want to stress. In most cases, you will probably need to expand on and reinforce something he said, recast a point he tried to make, or use his remarks to "correct" any misstatement or inference that might indicate his misunderstanding of an important concept or principle.

In any event, exactly how you should proceed following a subordinate commander's comments and responses will depend on the outline you hopefully formulated before this discussion and on the modifications you now make on the spot as a consequence of what he has said. That outline might include the following thoughts as to what a leader should be:

- Perceptively alert.

- Sensible and controlled as appropriate to the situation.

- Stable.

- Appropriately knowledgeable and experienced for the particular position.

- Technically proficient; responsibly daring.

- Physically and psychologically strong; self-reliant.

- Honest and reputable.

- Considerate but firm and fair; appropriately mature and consistent.

- Decisive; persistent; energetic.

- Astute; observant.

- Dependable and reliable, willing to accept responsibility for his decisions.

- Tolerant to risk (willing to assume the risks of the inevitable mistakes that occur when subordinates are given an opportunity to act and decide on their own).

In addition, he must be a problem solver, not a problem creator; a doer, not a philosopher; a great asker of pertinent questions, a truth seeker; and a developer of others (no unit is going anywhere unless its members have a capacity for individual growth).

These are tough criteria to meet. But why settle for something less? If you do, that's what you will surely get.

Now that you have identified what you believe are leadership fundamentals, you can define the role of a leader in your battalion, and this is what you should tell each of your subordinate leaders:

• Leadership is a function of the personality and competence of the leader, his followers, and the situation in its ever-changing state.

• What this means is that as each situation is different from the others, a leader must be able to interpret the meaning and influence of each one and how his subordinates, conditioned by their prior experiences, will most probably react to it. These anticipated reactions provide the backdrop for the leader's assessment as to which leadership approach might be the most effective.

• While it is true that military units have their missions defined by higher authority, all missions are subject to interpretation at the various levels of leadership. Consequently, each unit commander has varying degrees of latitude in expressing and perhaps redefining this mission and achieving it. Teamwork can be created and sustained only if there is a commonly understood and accepted goal.

• Accordingly, a primary task of any leader is to define specific goals, after evaluating the ideas and convictions of his superiors and subordinates. Not only must he define them, he must also articulate them in terms that his soldiers will understand fully. Not everyone may agree with the primary and supporting goals, but those goals must be recognized before any unified effort can be initiated.

• These goals must be clearly related to the resources of a unit. In other words, they must be attainable within a reasonable period of time, either with a unit's present means or those subsequently acquired or developed. The primary unit resources are its soldiers and their equipment, its facilities, and its materiel.

• Concurrently, a leader should be appraising the skills and experience appropriate to the successful accomplishment of the unit's mission. This evaluation sets the stage for the comparison between what he believes is required to do each important job and what each present "of-

fice holder" possesses. Invariably, he will detect that there are some gaps between job requirements and the qualifications of the one in that position. His conclusions from such appraisals should form the basis for a plan of remedial action.

• Next in the order of matters needing his attention is a study of the unit's existing procedures, regardless of how they were developed, or simply imposed. He should ask for an explanation for them and take pains to observe them being performed. Throughout, he should be concerned with how they relate specifically to the unit's goals. Do they really work? Are they necessary, clear and simple, easy to follow, and easy to measure? If they cannot be really measured, their usefulness has to be suspect. Furthermore, if no one can adequately explain the reason why a particular procedure exists, then that procedure ought to be cancelled promptly.

STANDARDS

Regulatory measures, of course, presume the existence of standards. These presumptions, however, do not always fulfill expectations. What this means is that a leader should make sure that the standards are indeed pertinent and valid—and that they are considered so by his soldiers. A word of caution here: Standards are difficult to define and difficult to keep current. As in bringing up a youngster, you have to watch them continually, and make adjustments.

• In sum, the vital element in all the above points is the personnel assigned to the unit now, and the fact that this is hardly a new conclusion does not lessen, or ease a commander's task. That task is to learn as rapidly as possible the relative strengths and shortcomings of each individual and the net effect of each on his job performance. Every leader must continually sharpen his skills at evaluating others, for he can make no more impor-

tant decision than the selection of others to meet certain demands. Those who do not or will not measure up to the rigors of leadership must be weeded out. Others of lesser ability and drive should be helped to recognize the limits of their competence and, thus, the levels to which they should aspire. Other equally important decisions concern subsequent assignments, how to prepare those affected for larger tasks, how to contribute to their growth, and how to encourage an extensive program of self-improvement. Those selected for advancement need to be exposed to both opportunities and threats, must be tested under adversity, and must develop a mental toughness concerning the inevitability of risk associated with decision making, and the fortitude to deal with and overcome the mistakes and failures that will be sure to come.

This ends your lengthy discussion, but the subject matter deserves no less time and effort. You conclude your remarks with the statement that these steps are exactly the ones you intend to follow for the battalion as a whole. Then, as you shake his hand and he prepares to leave, you say: "And I expect you to do the same at your level of authority and responsibility."

After he has gone, you should sit back for a moment and reflect that young leaders need someone to admire and emulate, someone who teaches important lessons and someone who provides support at critical junctures but who applies pressure, too, when that treatment is in order. Steel does not emerge from a bath of honey, but of fire.

Nor should a commander ever forget that everyone will be watching him.



George G. Eddy, a retired Army colonel, is on the faculty of the University of Texas at Austin. His active military service included tours in Korea and Vietnam and one as a battalion commander in the 4th Armored Division in Europe.



ENLISTED CAREER NOTES



VOLUNTEERS FOR OLD GUARD

The 3d Infantry (The Old Guard) is always looking for highly qualified soldiers to serve as members of the Army's official ceremonial unit. Stationed in the Washington, D.C., area at Fort Myer, Virginia, the Old Guard has a proud heritage that predates but parallels that of our constitution. The 3d Infantry, established in 1784, is the oldest active unit in the United States Army.

The Old Guard provides security for the nation's capital in times of civil disturbance or national emergency, and it is also responsible for conducting all military ceremonies in that area. In addition, since Old Guardsmen must also be prepared to perform regular infantry unit missions, they routinely take part in individual and unit tactical training.

The Old Guard has numerous specialty units. Among them are the Old Guard Fife and Drum Corps, the sentinels at the Tomb of the Unknown Soldier, the Caisson Platoon, the Continental Color Guard, the U.S. Army Drill Team, and the Commander-in-Chief's Guard. These elite units are well known and highly publicized throughout the United States and the Free World.

Anyone who wants to become a member of this prestigious unit must meet the standards outlined in AR 614-200, Table 8-4, and have a high school diploma or GED equivalent and a GT score of 100 or better. He must also have a record of performance and conduct that indicates a good potential for duty that may require exposure to the President of the United States, other heads of state, and local and foreign dignitaries.

Applications are currently being considered from active duty soldiers in the ranks of corporal/specialist-4 (on the sergeant promotion standing list) through staff sergeant in MOS 11B and in the rank of sergeant in MOS 11C.

Further information is available from

The Old Guard recruiting team at AUTOVON 226-3149/3150 or commercial (202) 696-3149/3150, or from the Commander, 3d U.S. Infantry (The Old Guard), ATTN: ANOG-REC, Fort Myer, VA 22211-5020.

ANCOC POLICY CHANGES

Recent Department of the Army policy changes will require a drastic change in the methods used to schedule NCOs to attend the Infantry Advanced NCO Course (ANCOC) at Fort Benning. Two of these policy changes that have the greatest effect are:

- NCOs who complete the nonresident course after 1 October 1986 will be required to attend the ANCOC resident course.

- ANCOC graduation will become a prerequisite for promotion to master sergeant beginning 1 October 1987.

Priority for ANCOC scheduling and attendance is in the following order:

- Sergeants first class with dates of rank after 1 April 1981.

- Staff sergeants on the current promotion standing list for promotion to sergeant first class.

- Staff sergeants who have been selected for ANCOC but who are not on the current promotion standing list.

Sergeants first class who were selected for ANCOC as staff sergeants and later promoted with dates of rank earlier than 1 April 1981 may submit requests for constructive credit for ANCOC through personnel channels to Commander, MILPERCEN, ATTN: DAPC-EPT-FN, 2461 Eisenhower Avenue, Alexandria, VA 22331-0400.

Sergeants first class with dates of rank of 1 April 1981 or earlier who were not selected for ANCOC attendance will be "grandfathered" so that they can compete for promotion to master sergeant.

Sergeants first class who are not sure

whether they were selected for ANCOC attendance before their promotion should go to their personnel sections and check the appropriate ANCOC selection rosters to determine their status, because this could have an effect on their futures.

The MILPERCEN point of contact is Ms. Blackwell, AUTOVON 221-8424 or commercial (703) 325-8424.

NEW TELEPHONE SYSTEM

A more cost-effective telephone system was recently installed in the Infantry/Armor Branch at MILPERCEN. The new system has doubled the capability to receive incoming calls at a fraction of the cost of the previous system.

Telephone prefixes remain the same: AUTOVON 221, commercial area code 202, and local prefix 325.

An updated telephone directory for Infantry Branch is provided in these notes.

PROMOTION TO SERGEANT

Effective 1 March 1987, a soldier must have a high school diploma or GED equivalent before he can be promoted to sergeant. Soldiers on a "recommended" list who do not meet this requirement by that date will be removed from the list.

This requirement is outlined in AR 600-200, Chapter 7, paragraph 7-15.

EDUCATION INCENTIVES CENTER

The Department of the Army activated an Education Incentives Center at MILPERCEN late last year. It provides the day-to-day management of the education incentives the Army offers its soldiers. It is the central point for keeping the commitments on educational assis-

tance that were made to soldiers when they enlisted.

The center is also responsible for answering questions from soldiers in the field, establishing a tracking system, and providing input for budget submissions.

The center handles the following programs:

- Veterans' Education Assistance Program (VEAP).
- Fiscal Year 1981 Department of Defense Educational Assistance Test.
- Fiscal Year 1981 Mini GI Bill.
- Army College Fund (also known as super VEAP, Ultra VEAP or "kickers").
- New GI Bill.
- New Army College Fund.
- Loan Repayment Program.

The pamphlet *Commander's Guide to the New GI Bill and the New Army College Fund* provides information that is useful to commanders and education centers in counseling soldiers on their benefits.

The pamphlet was sent to field grade and higher level commanders, and limited supplies are also available for new commanders. Copies can be requested from HQDA, ATTN: DAPE-MPA-P, Washington, DC 20310. Further information on the program is available from HQDA, ATTN: DAPC-PLP; AUTOVON 221-0285/9627, commercial (703) 325-0285/9627.

FAST TRACK PROGRAM

The Army has approved a new program called Realignment of Overages Through Reclassification and Enlistment—The Fast Track Program. The program has two major objectives: to get soldiers into Military Occupational Specialties (MOSs) that will provide them with career development and also meet readiness needs.

The ranks with the largest number of imbalanced MOSs are sergeant and staff sergeant, and the main cause is structural changes—new positions are created, for example, and other positions are changed, drastically reduced, civilianized, or eliminated.

When the Army conducted a major voluntary reclassification in 1984, 3,500

INFANTRY BRANCH DIRECTORY		
<u>Team Breakdown</u> (pay grade, MOS)	<u>Team Members</u>	<u>Team Numbers</u> (202)325, AUTOVON 221
E1-E4 (11B, 11M)	Mrs. Broeder	9543
E1-E5 (11C, 11M)	Mr. Poindexter	
	Mrs. Rawlings	
E5-E6 (11B, 11M)	SFC Smith	9399
	Mrs. Christenson	
	Mr. Ferguson	
	Ms. Filakousky	
	Mrs. Heath	
	Mr. Sewell	
E6-E7 (11C, 11H)	SFC Draughn	8056
E7 (11B, 11M)	SFC Baker	
E8	SFC Hancock	
	Mrs. Garner	
	Ms. Burroughs	
	Mrs. Stinson	
	Mrs. Wagner	
ANCOC Scheduling	Mrs. Shaw	9166
	SFC Calanni	
<u>Additional Sections</u>		
Special Forces/Ranger		8340
Armor Branch		9080
Drill Sergeants		8070

soldiers were approved for reclassification to a shortage skill. But there are still not enough volunteers to correct the imbalances.

Some future changes will give more soldiers an opportunity to reclassify into shortage skills. For example, first-term soldiers are not now allowed to reclassify. But this will change to allow soldiers in overstrength MOSs to reenlist to a shortage skill, regardless of their expiration term of service (ETS). Also, now, if soldiers were trained in an MOS on their current term of enlistment, regulations prevent reclassifying them. This will also change to allow these soldiers to reclassify to shortage skills.

Fast Track will give soldiers, primarily in the ranks of corporal/specialist-4 and sergeant who are serving in overstrength MOSs, an opportunity, through reclassification and reenlistment, to select a shortage skill.

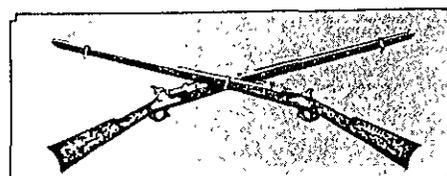
A test of this new program began 1 May and will continue through August. All eligible soldiers should have received letters explaining the program. The letters inform soldiers who are eligible for reenlistment that they may select the retraining option only. Others will be given

90 days to select a shortage skill of their own choosing, if they are otherwise qualified.

Soldiers who have not received a letter can still apply, if they are otherwise qualified. If enough soldiers do not volunteer for shortage skills, the Army may direct reclassification to meet readiness. Soldiers who participate in the Fast Track Program will receive formal training in the new MOS.

Commanders and MILPOs will play an important part in helping soldiers make decisions. The soldiers need to understand that in overstrength MOSs, their chances for promotion are reduced, and other opportunities for MOS-related training and assignments are limited.

Additional information is available from the Retention Management Branch, Enlisted Personnel Management Directorate, MILPERCEN, AUTOVON 221-9695 or commercial (703) 325-9695.



OFFICERS CAREER NOTES



DISCRIMINATORS

Officers often call Infantry Branch to ask why they have not been selected for promotion. Assignment officers do not sit on selection boards, however, nor do selection boards provide reasons as to why an officer has not been selected. Assignment officers can only review a file and try to tell the officer why they think he was not selected. Since promotion is highly competitive, it is sometimes difficult to determine exactly why. In other cases, it is readily apparent.

The results of past boards have established clear patterns that officers are not normally selected for promotion if they have any of the following items in their official military personnel files: Article 15s, letters of reprimand, record of driving while intoxicated, relief for cause OERs, and failure to meet weight standards.

When none of these exist, normally the officer has established a pattern, as shown on his OERs, of not maintaining his performance on a par with that of his peers. Board members must make some tough decisions, and one OER can sometimes make a difference.

This is not to say that an officer cannot recover from an OER that is below average or from a mistake he has made. He can, and board results prove it. The important thing is for him not to establish a pattern of performance below that of his peers and to do his best, no matter what position he holds at any given time.

All positions are important, but there are some that are critical to an officer's Infantry development and in which he must do well to remain competitive in the Infantry: Company commander, battalion S-3, battalion XO, and brigade S-3. When an officer serves in these positions he cannot afford to fail.

Again, this advice is based upon the results of past boards and it is not likely that these trends will change in the future.

Any officer who has questions concerning his performance or potential for promotion should contact his assignment officer at Infantry Branch for the best possible evaluation on the basis of his files.

VOLUNTEER FOR RANGERS

The Military Personnel Center is seeking lieutenants to volunteer for service with the 75th Infantry (Ranger) Regiment, 1st Special Operations Command (Airborne).

Volunteers are being sought from the following career fields: Infantry (SC 11), Field Artillery (SC 13), Signal Corps (SC 25), Military Intelligence (SC 35), and Chemical Corps (SC 74).

Lieutenants who are accepted into the Ranger regiment can expect to be assigned to Fort Lewis, Washington; Hunter Army Airfield, Georgia; or Fort Benning, Georgia. First, however, they will be sent to the three-week Ranger Indoctrination Program (RIP) at Fort Benning.

To be eligible for a Ranger assignment, an officer must:

- Be Airborne qualified.
- Be Ranger qualified.
- Have at least 12 months of basic branch experience commensurate with his rank.
- Have successfully completed the RIP.
- Be able to serve at least 12 months in a basic branch duty position as a lieutenant.

Although breaks in tours will be approved for CONUS-based officers who are selected for a Ranger regiment assignment, the Army will not curtail assignments for officers who are serving overseas tours. In addition, personnel who are not Ranger qualified may be considered for assignment on a case-by-case basis if they volunteer to attend and then successfully complete Ranger

School and still meet the other prerequisites.

Lieutenants who are interested in volunteering for Ranger duty should contact their battalion adjutants and submit requests for reassignment as stipulated in AR 614-100 through their chains of command.

MILPERCEN Q AND A

The Army's Military Personnel Center is asked hundreds of questions daily by officers around the world. They want to know the facts about promotions, schooling, assignments, and professional development.

Here are some of the more commonly asked questions and some answers to them:

Q. What effect has the slow-down in promotions had on monthly promotions?

A. The total number promoted each month, in the Army Competitive Category, has slowed since early 1986. Briefly, 58 officers were promoted to colonel in December 1985 while 9 were promoted in May 1986; 136 to lieutenant colonel in December, 62 in May; 758 to captain in December, 270 in May.

Q. What are the projections for the future?

A. It is difficult to pinpoint exact numbers. Promotion numbers are a function of budget dollars, separations, retirements, and the needs of the Army. Through the remainder of Fiscal Year 1986, however, the following totals of active federal commissioned service (AFCS), for the Army Competitive Category, may be used as a guide for "pin-on points" for promotion:

- Colonels—22 years, 6 months.
- Lieutenant Colonels—17 years, 7 months.
- Majors—10 years, 8 months.
- Captains—4 years.

Average pin-on time fluctuates every month.

Q. Doesn't the Defense Officer Personnel Management Act (DOPMA) mandate "pin-on" points for promotion?

A. No. DOPMA sets *guidelines*, which are goals, not requirements, under the law. The current targets are:

- Colonels—22 years, plus or minus 1 month.
- Lieutenant colonels—16 years, plus or minus 1 month.
- Majors—10 years, plus or minus 1 month.

Q. Doesn't DOPMA require a promotion board, per grade and competitive category, once a year?

A. No. The law requires promotion boards to be held as the Secretary of the Army determines necessary for the service. For example, selection for promotion to captain, Army, may be held twice a year (July and December 1986) and for promotion to lieutenant colonel, Army, may be held less than once a year (July 1985 and February 1987).

Q. The last captain, Army promotion board required first lieutenants to serve one year on active duty as commissioned officers to be eligible. Will this requirement continue?

A. Yes. Selection for promotion to captain is now on a "best qualified" instead of a "fully qualified" basis. Furthermore, the board is held in conjunction with the conditional voluntary indefinite (CVI) board. One year's active-duty service, if the officer is accessed as a first lieutenant, is the minimum required to establish performance trends. This policy is to protect the recently accessed officer and to make sure he is competitive with others in the promotion zone.

Q. What are Selective Early Retirement Boards (SERBs), and what are the eligibility requirements?

A. SERBs are authorized under Section 63B of 10 United States Code. The Secretary of the Army may retire Regular Army colonels with four years time in grade as colonels, if they are not on a promotion list. Regular Army lieutenant colonels may be retired if they are twice not selected for promotion to colonel. Only 30 percent of the eligible population may be selected, and those who are not selected may not be considered again for five years. (The proponent for SERB is the Officer Personnel Management Directorate.)

Q. How can I apply for advanced civil schooling?

A. Officers apply for advanced civil schooling on DA Form 1618-R, as explained in AR 621-1. Officers should apply about one year before their desired starting date and make sure they register for the appropriate standardized test (GRE or GMAT) in time to meet university application deadlines.

Q. In which graduate disciplines is the Army educating its officers?

A. The Army has requirements for graduate education in the humanities, business/management, engineering, physical sciences, social sciences, and law. Most fully funded social science education is in various area studies curricula in support of the Foreign Area Officer Program, and most humanities study, other than that supporting the U.S. Military Academy Instructor Program, is in journalism. Additional information is available from professional development officers at MILPERCEN.

Q. If I single-track in my branch, does this mean I won't be eligible for assignments to USMA, the Recruiting Command, or ROTC duty?

A. No, it does not. These positions are considered branch immaterial, and all branches have requirements to support these organizations.

Q. I'm interested in applying for

Functional Area 48, Foreign Area Officer. How and when do I apply, and what can I do to increase my chances for selection to the program?

A. The Foreign Area Officer (FAO) Program has initiated a process to designate qualified officers during their fifth year of service. This is a year earlier than the normal functional area designation process for a given group. Applications for Year Group 1981 officers will be accepted during the fall of 1986. Applications may be obtained from MILPERCEN, ATTN: DAPC-OPA-C. The underlying dimension of the FAO functional area is the combination of regional expertise, political-military awareness, and a solid foundation in professional military skills. In addition, the Graduate Record Examination (GRE) and the Defense Language Aptitude Battery (DLAB) tests need to be taken.

Q. Who is eligible for Project Product Manager (PM) selection?

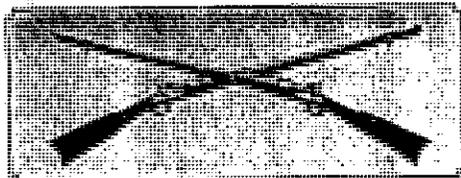
A. Colonels and lieutenant colonels in the Materiel Acquisition Management (MAM) Program, assigned skill "6T" are automatically reviewed by the PM selection boards.

Q. How does an officer enter the MAM Program?

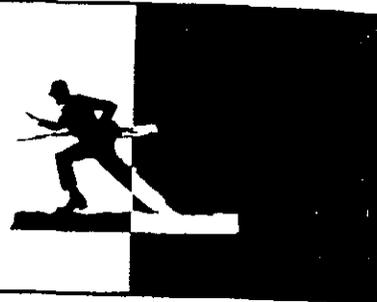
A. An interested officer should send a letter of application to the career management branch. A MILPERCEN board convenes three or four times annually to select MAM Program participants from among the applicants.

Q. Should officers submit functional area designation preference statements?

A. Yes. Although Army requirements are the most significant factor in the functional area designation process, many other factors influence individual designation. Other considerations include personal preference, education, experience, performance, and proponent input to formulation of designation objectives.



BOOK REVIEWS



World War II unit histories are being published in increasing numbers today, although they now have a look somewhat different from those published in the years immediately following the war. Today's unit histories are far more personal, as may be seen in the following:

• **ORCHIDS IN THE MUD: PERSONAL ACCOUNTS BY VETERANS OF THE 132d INFANTRY REGIMENT**, edited by Robert C. Muehrcke (J.S. Printing, 1985. 464 Pages. \$22.50). This book is truly a labor of love on the part of the editor, who is now a medical doctor in Oak Park, Illinois. He has devoted countless hours during the past years to collecting and processing the purely historical accounts; the purely personal accounts; the maps, charts, and photographs; and all of the other material that appears in this, his final product. The members of the regiment should be both pleased with and proud of Dr. Muehrcke's efforts.

Part of the Americal Division, the 132d Infantry fought at Guadalcanal in 1942 and 1943; on Bougainville in 1944; and in Leyte, Burias, Trias, and Cebu in 1945. On 8 September 1945 it moved to Yokohama, Japan, as part of the Allied occupation forces.

Dr. Muehrcke served as an enlisted man in the 132d Infantry until the end of the Bougainville campaign when he was sent back to the States and Fort Benning to officer candidate school. After he received his commission, he returned to the Pacific, joined the 383d Infantry Regiment, and fought in the bloody battles on Okinawa in 1945.

He uses the then-and-now approach, which is so popular with those who write unit histories today, showing the soldiers of the regiment as they were during the war years and as they are now 40 years later.

• **THE MEN OF COMPANY K: THE AUTOBIOGRAPHY OF A WORLD WAR II RIFLE COMPANY**, by John D.

Campbell and H.P. Linebaugh (William Morrow, 1985. \$18.95). Like Dr. Muehrcke, the authors of this book draw on the memories of their company's survivors to tell the story of their unit—Company K, 333d Infantry, 84th Infantry Division—during its more than 100 days of combat in Europe from early November 1944 to early May 1945. The company fought in the Siegfried Line, in the Battle of the Bulge, and from the Roer River to the Elbe River.

Linebaugh commanded the company during most of its combat days, while John Campbell, the company's first replacement officer, fought with the company until he was badly wounded on the last day of the Battle of the Bulge. Like the previously mentioned book, the authors present their living compatriots as they were during the war and as they are today. Unlike Dr. Muehrcke, however, they concentrate on the actions of a single infantry company, which gives their book a special aura. Together, the books point out graphically the difference between infantry combat in the Pacific and in Europe.

• **HEDGEROW HELL: NORMANDY, 1944**, by John S. Allsup (Personal printing, 1985. 160 pages). This history, too, is a very personal one, although it contains more graphics than either of the previous two. It is the story of a single infantry platoon—the 1st Platoon, Company A, 1st Battalion, 175th Infantry Regiment, 29th Infantry Division—as it fought its way from Normandy Beach through the *bocage* country of Normandy toward St. Lo in June 1944. Allsup was its platoon leader until he was wounded and evacuated on 18 June; the platoon's story ends at this point.

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.

The photographs are particularly good, and Allsup carries the 29th Division's story (through the captions on the photographs) up to its capture of St. Lo on 20 July. An interesting feature is the fact that the story is told in both English and French (the book was originally published in France). An errata sheet corrects the numerous typographical errors.

A personal history of quite another kind is **MONTY AT CLOSE QUARTERS: RECOLLECTIONS OF THE MAN**, edited by T.W. Howarth (Hippocrene Books, 1986. 180 Pages. \$17.50). The author has pulled together 11 separate essays and one memorial address apparently to counter a number of recent critical accounts about Field Marshal Sir Bernard Montgomery, a noted British World War II commander in Africa, Sicily, Italy, and northwest Europe. The finished product is but another song of praise for a British commander who is steadily being elevated by British writers to military sainthood. Where there is muted criticism, it is more than overcome by fulsome praise. At the end, the reader knows precious little more about Montgomery the soldier than he did at the beginning.

Although the flood of books about the Vietnam War has slowed, we have two recently published ones that should prove immensely interesting and helpful in recalling the events of that war: **VIETNAM WAR ALMANAC**, by Harry G. Summers, Jr. (Facts on File, 1985. 414 Pages. \$24.95) and **THE VIETNAM WAR: AN ALMANAC**, by World Almanac Publications. General Editor: John S. Bowman (World Almanac Publications, 1985. 512 Pages. \$24.95).

Summers, a retired U.S. Army colonel and a frequently published author, not only served as an infantry officer in Vietnam, he has written one other book on that war—*On Strategy*—that attracted a goodly amount of critical acclaim several years ago.

In his book, he pulls together 21 maps and more than 120 photographs to supplement his text—the major part of which is devoted to 450 separate entries on people, battles, weapons, units, and the like—and produces an outstanding reference work. An interesting feature is a suggested list for further reading found at the end of most of the entries.

Another interesting feature is the author's willingness to give his own views on the people and events he mentions in those separate entries that make up the bulk of the book.

Bowman's World Almanac book is also a fine reference work. Although it is similar in some ways to Summers' book, it uses a more detailed chronology and a series of separate essays on the land, air, naval, and irregular force operations to present its information. There is also a separate section that contains short biographies of the key personnel on both sides. The book has no maps, but does have one section of color photographs and more than 100 black-and-white photographs.

For some reason, the German Army of World War II is of greater interest to many U.S. infantrymen today than the U.S. Army of that war. In fact, it is difficult to find many infantry leaders today who know very much about the U.S. Army of the World War II era and its exploits. That being the case, here are three books those infantrymen should enjoy:

• **FORGOTTEN LEGIONS: GERMAN ARMY INFANTRY POLICY, 1918-1941.** By S.J. Lewis (Praeger, 1985. 189 Pages. \$29.95). The title of this book is somewhat misleading, for the author's primary concern is more with the disintegration of the German Army General Staff after Adolf Hitler came to power than with German Army infantry policy between the wars.

On the other hand, Lewis, who is with the Combat Studies Institute at Fort Leavenworth, does make certain needed corrections about the German Army of World War II—its organization, leaders, and methods of operation. He feels that many people in the United States have "been unduly influenced by the memoirs of former German generals," particularly Heinz Guderian's, to the extent that they have almost totally ignored 80 per-

cent of that Army's field units.

In the book's introduction, Charles Burdick, who is also a student of the World War II German military establishment, suggests that because "the books on the Second World War published over the last two decades show an amazing similarity to each other. . . . The result is a frightening distortion of German military history in particular." To him, this book "heralds the long-needed change in our approach to the subject of German military history."

We think you will agree with that statement, but at the same time we would welcome a good history, in English, of the German infantry of World II.

• **THE ONSLAUGHT: THE GERMAN DRIVE TO STALINGRAD.** Edited by Justus Goepel (Norton, 1985. 192 Pages. \$24.95). This book was originally published in West Germany in 1984. It contains 152 color photographs (selected from several thousand) taken by three German soldiers. Never before published, the photographs track the German Army from June 1941 when it crossed the Russian border to October 1942, when it bogged down in Stalingrad. There are few "action" photographs as such in the collection. Rather, the ones that are used were chosen to show the everyday reality of life as the German soldier experienced it on the Eastern Front. An essay by Herbert Kraft and the editor's postscript tell something about the soldiers who took these photographs, the organization of the book, and color photography in World War II.

• **MOSCOW, 1941.** By Janusz Piekalkiewicz (Presidio, 1985. 287 Pages. \$20.00). This book was also originally published in West Germany, but in 1981. The author is a native of Poland who has written extensively on World War II military history. In this book, he reconstructs—from actual news reports, military dispatches, and radio accounts—the 1941 German military campaign in Russia. These are supplemented by the author's own analyses of the events, including short accounts of Napoleon's similar disastrous campaign for comparison. Maps and photographs nicely complement the narratives. There are also brief biographies of the "men in command," a copy of the German Army

General Staff's May 1941 report containing military geopolitical data on European Russia, some weapons and organizational data, and a summary of losses suffered by both sides—human and materiel.

We have also received an interesting publication from *Rivista Militare*, a leading Italian military magazine. It is a collection of late 19th century watercolors by Quinto Cenni, an Italian painter who is known in Italy as "the most important historiographic painter of soldiers." This particular collection, titled "IL SOLDATO ITALIANO DELL'OTTOCENTO, VOLUME QUARTO," has 17 full-color reproductions of Cenni's paintings plus an equal number of smaller black-and-white photographs accompanied by descriptive data.

And from the Combat Studies Institute of the Army's Command and Staff College we have received two of its most recent publications, the titles of which are largely self-explanatory: **SEEK, STRIKE, AND DESTROY: U.S. ARMY TANK DESTROYER DOCTRINE IN WORLD WAR II.** By Christopher R. Gabel. Leavenworth Papers Number 12, September 1985. 92 Pages; and **THE OPERATIONAL LEVEL OF WAR,** CSI Historical Bibliography Number 3, December 1985. Compiled by Elizabeth R. Snoke and annotated by the CSI Research and Teaching Committees. Both of these publications are extremely useful to all infantrymen. In particular, Gabel's study does much to clear away the confusion that has surrounded our use of tank destroyers during World War II. Few infantrymen knew what to do with them at the time. The armor community did not want them then, and probably would not like to see the concept resuscitated. The tank destroyer units that did get into action were generally misused and misunderstood; that they accomplished anything at all—and they did accomplish some notable things—was a tribute to the men who fought in them, and not to the establishment.

Finally, we have received from the Monch Publishing Group its massive, three-volume **DEFENCE EQUIPMENT CATALOGUE, 1985/86.** It is divided into two main parts: the companies and

organizations in 25 countries that sell military equipment to other countries and information on the procurement organizations in those countries (Volume I), and information on the actual devices, equipment, and services offered for sale (Volumes II and III). The latter part has been arranged according to the U.S. Federal Supply Classification (FSC), which is used by many countries and has become a standardized supply system within NATO and most of the free world. Prices are not included. (No information from any of the Warsaw Pact countries or their allies is shown.) Most of the entries in Volumes II and III are presented in full color together with a significant amount of technical data for each. For the infantryman, these volumes are excellent reference sources.

Here are a number of other books we want you to know about:

THE UNION CAVALRY IN THE CIVIL WAR, VOLUME III: THE WAR IN THE WEST, 1861-1865. By Stephen Z. Starr (Louisiana State University Press, 1985. 616 Pages. \$32.50). Reviewed by Major Don Rightmyer, United States Air Force.

The first volume in Stephen Starr's three-volume work on the Union cavalry in the Civil War, published in 1979, was met with praise by the noted Civil War historian, Bell I. Wiley, for the author's freshness and excellent style. That volume covered the cavalry operations in the eastern theater through the battle of Gettysburg. The second volume, released in 1981, continued the story of the cavalry experience in the east through the remainder of the war. Finally, with this book, Starr's trilogy is complete, although, unfortunately, he passed away in early 1985 just as he completed work on the book.

In this volume, Starr crosses the Allegheny Mountains to look at what went on with the mounted forces in the western theater of operations from early 1861 to the end of the war four years later. When the cavalry units were first organized in the west, they were apparently ill-equipped in comparison with the cavalry units serving with the Army of the Potomac. And if the "spit and polish" of the eastern troopers left something to be desired, the western

cavalrymen were even more lax in their organization and military discipline. That comparison is not too surprising in light of similar descriptions of the infantry forces in each theater.

Much of the early cavalry maneuvering took place in the border area of Kentucky where the initial posturing centered on that state's alleged neutrality. As time and events moved on, cavalry actions spread throughout the western theater in coordination with the Army's campaigns. In addition, Federal cavalry commanders frequently found themselves pursuing such Confederate raiders as John Hunt Morgan and Nathan Bedford Forrest. Starr particularly emphasizes the role played by the cavalry units in the battles at Vicksburg, Chickamauga, and Nashville. The book ends where the author began his first volume—at Selma, Alabama, where the progress and evolution of Union cavalry capabilities during the war were amply demonstrated.

This series was recognized in 1985 for its outstanding contribution to history, and it will certainly stand as the authoritative work on the subject for years to come. The books are thorough and yet readable, a quality not often found in all military history books. For those who are interested, all three volumes are still in print.

"THE BEST SCHOOL IN THE WORLD": WEST POINT, THE PRE-CIVIL WAR YEARS, 1833-1866. By James L. Morrison, Jr. (Kent State University Press, 1986. 267 Pages. \$27.50). Reviewed by Colonel James M. McGarity, United States Army Retired.

The author is a graduate of the Virginia Military Institute and a former faculty member of West Point. In this book he has produced a detailed description of the early development of West Point as a military and academic institution. He focuses on the period from 1833 to 1866, which some writers have labeled the Military Academy's "Golden Age," because it was during this time that the influence of the Corps of Engineers on the institution was most pronounced. The title of the book is taken from a letter President Andrew Jackson wrote to his

nephew, a West Point graduate, in which Jackson stated that the Military Academy was "the best School in the world."

The author presents a general background of the U.S. Army as it was in the early 1800s and an account of the early development of the Academy. It was during the summer of 1833 that the Superintendent, Colonel Sylvanus Thayer—known later as the "Father of the Military Academy"—resigned following a dispute with Jackson over the restoration of a delinquent cadet. Thayer was convinced he had established a perfect academic system and worked to see it retained even after he had left the Academy. In fact, his struggles, and the struggles of others to retain the system, constitute the central theme of the book.

Of special interest is the author's discussion of West Point and the Civil War. Morrison believes the Academy was more nationalistic than pro-Southern in its orientation and that, overall, it strengthened rather than weakened loyalty to the country. The many graduates who rose to high positions in the Federal armies gave the Academy an additional reason for its existence.

Morrison concludes that in 1866 the Academy took on an attitude that exempted it from further educational progress. Even with the removal of the direct influence of the Corps of Engineers, the "new" postwar West Point continued with the curriculum, customs, and parochial biases of previous days.

The book is valuable to the serious student of the early days of West Point and the U.S. Army, and to the history buff of the Civil War period. Morrison's research was most detailed and seemingly complete, as shown by the fact that his text of 154 pages is supported by detailed footnotes, 12 appendixes, illustrations, and a lengthy bibliography.

OPERATION TORCH: THE ALLIED GAMBLE TO INVADE NORTH AFRICA. By William B. Breuer (St. Martin's Press, 1986. 272 Pages. \$18.95). Reviewed by Major General Albert H. Smith, Jr., United States Army Retired.

This historical treasure is as exciting to read as it is informative, and while

this, our first major operation against Germany and her allies, has been described before, it has never been told in such a comprehensive, easily read style.

As a participant in Operation TORCH, I found the book almost impossible to put aside. The author weaves the complex events that surrounded the operation into a simplified, chronological, fiction-like narrative. Our present Joint Chiefs of Staff and all of the members of our armed forces can find some situations in this book that parallel those they now face throughout the world.

More important, though, this book is for soldiers, sailors, and airmen. The 509th Parachute Infantry Battalion conducted our first airborne combat mission. "El Darbo," Bill Darby, led a newly formed U.S. Ranger battalion in a successful assault on the guns at Arzew. Major General Terry Allen and other veterans of the fighting during World War I somehow got their troops ashore after weeks at sea to capture Oran, Casablanca, and Algiers. Individual Allied fighting men did their jobs or died trying. After the first 72 hours, U.S. and British forces were victorious and French soldiers were once again our allies.

Infantrymen are encouraged to read this book and look for the lessons that were learned the hard way in November 1942 but that may still be valuable today. This is one of the best short references

on our first European campaign of World War II.

THE 25-YEAR WAR: AMERICA'S MILITARY ROLE IN VIETNAM. By General Bruce Palmer, Jr. (University of Kentucky Press, 1984. 236 Pages). Reviewed by Doctor Joe P. Dunn, Converse College.

Although the various military services are well into major multi-volume histories of the Vietnam War, we have needed a good one-volume military assessment of the war to augment Dave Richard Palmer's earlier *Summons of the Trumpet* (1978). General Bruce Palmer's book is that and more. Besides providing a sound narrative history of the conflict, Palmer deals with the command structure, strategy, tactics, and larger lessons of the war. His judgments on U.S. strategy and the context of the experience are wise and fair. Although many of his key points are not new, nowhere are they better stated and explained. The book far surpasses Harry Summers' *On Strategy* (1981), which has attracted so much attention.

Few have better credentials for such an undertaking. General Palmer served in the highest levels of staff and command during the long war. We benefit from his insight and personal experiences as assistant to the Army's Deputy Chief of Staff

for Operations (1963-1965) where he regularly attended JCS deliberations; commander of II Field Force and later deputy to General Westmoreland (1967-1968); and Vice Chief of Staff and Acting Chief of Staff (1968-1973).

The list of General Palmer's assessments and lessons is too vast to address. It must be sufficient to note that the author gives the military services high marks on their operational performance and innovation, but raises serious questions about larger strategy issues and the domestic political influences that dominated decision making.

This book should be read by anyone with serious interest in the U.S. military involvement in Vietnam and in the military services' role in future conflicts.

HAWAII UNDER THE RISING SUN. By John Stephan (University of Hawaii Press, 1984. 228 Pages. \$16.95). Reviewed by Colonel Robert G. Clarke, United States Army Retired.

Much has been written about Japan's World War II aims in the Pacific in general and about her attack on Pearl Harbor specifically. But little has been written about Japan's plans for Hawaii and how those islands fitted into Japan's overall strategy.

The author, who teaches at the Univer-

BOOK REVIEWS

sity of Hawaii, here presents a well researched and well written volume on that interesting subject. He concentrates on both the military and the political plans Japan had for the Hawaiian Islands and includes a discussion of the social and political positions of Hawaii's Japanese community. One interesting chapter gives Japan's views on how Hawaii's cultural and political orientation might be changed after the islands had been secured and how they might be incorporated into the Greater East Asia Co-Prosperity Sphere.

The political side of the Japanese government was never able to articulate clearly what it had planned for Hawaii, nor did it have a clear idea of how the islands would be incorporated into the empire. On the other hand, from the very beginning Japan's military leaders clearly saw the military importance of the islands.

Regardless, after the battle of Midway in June 1942, the Japanese never again had the military strength to secure the islands, and Hawaii quickly faded from view as a valid military objective. Nevertheless, the Japanese political bureaucracy continued to write and talk about a take-over of the islands as late as 1944 when all practical hope had long passed.

This is an interesting study in what might have happened in Hawaii, but it is even more interesting when one consid-

ers our present close and cooperative relationship with Japan and its current government.

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From The Editor

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