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DEPARTMENTS

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Commandant's NOTE

MAJOR GENERAL CARMEN J. CAVEZZA, Chief of Infantry

INFANTRY TRAINING STRATEGIES

As we watch our units deploying to Saudi Arabia, we are witnessing what General John W. Foss, Commander of the U.S. Army Training and Doctrine Command, calls the base case of our deployable Army. With the increased emphasis on contingency operations, the Infantry's ability to deploy and to employ the appropriate mix of special, light, and heavy forces will take on increased importance.

Operation DESERT SHIELD reemphasizes the importance of our units training as they will fight. We must see that the training these forces get is doctrinally correct and performance oriented with measurable standards. Most significantly, we must put our effort into training to a high standard those critical tasks and skills that will ensure success on the battlefield.

Unit training plans for the future total Infantry force—Active Army and Reserve Components—will be affected by a reduced level of resources (personnel as well as materiel), and the units will have to rely more on training aids, devices, simulators, and simulations. To do this right, we in the Infantry community must develop training strategies that will ensure the highest payoff—combat readiness—and then push to have these strategies receive an appropriate emphasis in the Army's future budget and POM plans.

The Infantry School is presently taking a two-pronged approach to assist units in the field with their training efforts. In one, the School is developing strategies for our weapon systems, both present and future. In the other, the School is developing unit training strategies (collectively referred to as the Infantry Combined Arms Training Strategy) that lay out descriptive training programs.

The weapon system strategies address small arms, mortars, hand-held high explosive antitank systems, TOWs, Dragons, and Bradley fighting vehicles. These strategies are intended to achieve a specified outcome: To produce units that are trained to win on a battlefield. They include the training documents, doctrine, institutional and unit training requirements, and training resources needed to achieve and sustain the desired outcome. The strategies examine the tactical, technical, and leadership skills required for individual, leader, crew, and collective training proficiency, and they ensure that all the training is linked both horizontally and vertically.

The unit training strategies, which are tailored to meet Infantry unit TOE differences, include the recommended annual training frequency, ammunition requirements, current and required training aids and simulations to support training, OPTEMPO costs, and current and required ranges and training areas. These documents lay out descriptive annual training programs that are integrated both by echelon—individual through battalion level—and by training event—for both maneuver and gunnery or live fire training—to include a combat training center rotation. In addition, these are living documents that have potential for charting a course for the Infantry to follow to achieve combat readiness.

Through this two-pronged approach, we hope to achieve the following goals:

- Identify a logical, efficient, and descriptive ap-

proach to training as we enter a period of a shrinking Infantry force and constrained resources.

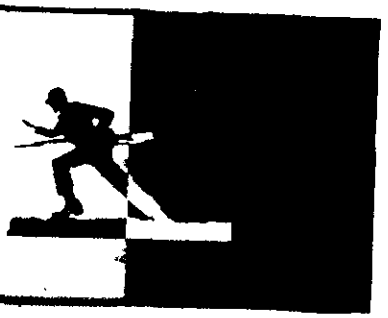
- Identify any gaps in a training strategy for resolution by the Infantry School.
- Improve leader development training so that we can better prepare leaders for the field through resident and non-resident instruction.
- Identify shortcomings and potential gaps in a strategy and analyze them so as to develop potential solutions.
- Tie in the Infantry force training program with the techniques and procedures in Field Manual 25-101.
- Provide the Infantry with an azimuth to the future by arranging in an order of priority funding for OPTEMPO, ammunition, training aids and devices, simulations and simulators, ranges, and training areas.
- Improve the ability of unit commanders to train and sustain a combat ready force.

Basic to the success of the Infantry Combined Arms Training Strategy is the desire of each Infantry leader to develop himself and his unit to the highest possible standards of tactical proficiency. Good tactics are learned—learned through individual study, thought, and practice. Our doctrine is sound but no better than those who will implement it. Our training literature is carefully prepared and tested but it is only as good as the men who read and use it. The officer and noncommissioned officer who would be a winner in combat must make a large personal investment in his own professional expertise.

Our training devices, engagement simulation systems, evaluation programs, and increased emphasis on "hands on" training, backed by a substantive, usable body of training literature, give today's Infantryman a great training advantage over his predecessors.

The continued development of these devices, systems, and programs should provide the Infantryman of the future with every combat preparation he requires except courage. We do not envision any scientific substitute for that essential ingredient of the successful soldier, but then, the United States Infantryman has never really needed one.

INFANTRY LETTERS



SPLIT FORMATION

I read with concern "The Mechanized Infantry Team in the Offense," by Lieutenant Colonel Thomas V. Morley and Captain Anthony J. Tata (INFANTRY, May-June 1990, pages 16-19). The split formation they describe is not tactically sound, and it does not enable the company team commander to properly command and control his team. It appears to be an "ad hoc-ism" devised especially for the meeting engagement at the National Training Center (NTC).

The team that is described in the article—two mechanized infantry platoons, a tank platoon, a fire support team (FIST) and an improved TOW vehicle (ITV) section—should employ overwatch techniques. By using bounding overwatch or travelling overwatch (depending upon METT-T) the team can accomplish the same tasks as those depicted in the article while still maintaining subunit integrity.

The team commander in this case has five maneuver elements that can be used to overwatch each other. The ITVs and the tanks can overwatch the mounted infantry; the Bradley fighting vehicles or M113s can overwatch the dismounted infantry, and so on. The FIST should always be positioned so that it can observe and call for fire on the commander's most critical targets—not follow the team commander around the battlefield.

Chapter 13 of Field Manual 71-1J lays out company team movement techniques that are excellent for accomplishing any offensive mission. The critical part is that the Field Manual, in talking about teamwork, says that "to achieve teamwork, platoon integrity must be maintained, and platoons must work with platoons."

The bigger issue, which the authors imply, is a lack of confidence in the ability of "young" lieutenants to "fight" their platoons. The authors firmly believe that the commander and the XO should "fight" the company. It is thinking such as this that prevents platoon leaders from becoming proficient in leading their platoons and that will eventually reduce the ability of the captains of the future to "fight" their companies. The example should be a test of the company commander's ability without further compounding the issue by requiring him to "fight" individual tank sections.

As we are taught time and time again at the NTC, "Basics Win" and company teams that achieve mass by getting all of the platoons synchronized so that they mass their fires at the critical time and place will be victorious. What is needed are company teams that can execute the battle drills in FM 71-1J and achieve mass, not new battle drills that violate platoon integrity. If the platoons in the authors' example perform to standard, within the team commander's scheme of maneuver, there will be no need for "ad hoc" battle drills.

BRUCE B.G. CLARKE
COL, Armor
2d Brigade
1st Infantry Division
Fort Riley, Kansas

ROADMARCHING

My congratulations to the U.S. Army Physical Fitness School for an excellent series of roadmarching articles in INFANTRY. [*"The Soldier's Load: Planning Smart," by Lieutenant Colonel John S. O'Connor and Michael S. Bahrke, January-February 1990, pages 8-11; "Load Carrying Ability Through Physical Fitness Training," by Dr. Bahrke and Colonel O'Connor, March-April 1990, pages 33-36; and "Roadmarching and Performance," by Colonel O'Connor, Dr. Bahrke, Captain Joseph Knapik, and James A. Vogel, May-June 1990, pages 31-33.*]

For two years, I participated as an evaluator in a roadmarch program that required each of 23 companies to pass graded roadmarches of 12 miles (or six-and-one-half miles for some support units) with full combat load in three hours or less (four miles per hour). There were no rest stops. The units were tested every six months.

I was one of four evaluators who participated in every roadmarch, and we soon discovered that units waited until the end of every six-month window to schedule their semiannual test. As a result, we routinely conducted three 12-mile roadmarches every week, under full combat load, for the last six to eight weeks of each six-month period.

To say the least, 36 miles of forced roadmarching every week was a grueling pace. But I do feel we developed some valid insights into roadmarch training, techniques, and benefits.

First, we quickly learned that our primary vulnerability was in our feet. Foot care was paramount, and each of us developed very elaborate and deliberate foot care rituals. Interestingly, none of us ended up using the same style of boots or the same techniques of foot care. But by trial and error, we all quickly came to different solutions that worked; the four of us rarely had blisters. The point is that without frequent roadmarch training, soldiers cannot adequately devise such foot care formulas that work for them.

Second, a soldier's load is as much a matter of comfort and balance as it is of weight. We became so attuned to the configuration of our rucksacks that our occasional joke of adding a five-pound brick to an evaulator's load was always instantly detected by the victim. But once we achieved a comfort zone, our backs and shoulders learned to serve as efficient

scales for measuring and balancing any variation of mission load. Although the exterior of our rucksacks remained uniform and standard, the interior load required individual flexibility. Again, weight distribution was a matter of personal preference determined by trial and error, and all four of us packed our rucks differently.

Third, a roadmarch trained unit strides along in a consistent rhythm like a metronome. It is almost hypnotic. Sounds of foot shuffling from shortened strides or of bouncing rucks from soldiers running to catch up are the early signs of an untrained unit. The idea of conducting uncontrolled, every-soldier-for-himself, free-for-all roadmarches is nonsense. Few activities are more bonding or contribute more to cohesion than the successful completion of a stressful *unit* roadmarch.

Fourth, adequate roadmarch training must ignore environmental conditions. Marching in new-fallen snow, on ice-covered trails, in rain, in heat, at night, in daylight, on pavement or in forests—all conditions we routinely experienced—help prepare soldiers for roadmarching. Nature's obstacles are a fact of our profession and should not be allowed to cancel or postpone roadmarch training. We learned something new about roadmarch techniques every time the weather, route, or time of day changed.

Finally, conducting a unit 12-mile forced roadmarch without proper training should be classified as soldier abuse. One quickly discovers that highly trained long-distance runners have only one thing going for them—mental discipline. Consequently, they drive their bodies to perform despite soft feet, weak shoulders, and legs that have been trained for speed and distance instead of strength. It should be no surprise that injuries are the outcome.

I am therefore not surprised at the results of the 6th Infantry roadmarch test conducted by Fort Benjamin Harrison. Although I wholeheartedly support most of the conclusions, I tend to disagree with the idea that a unit can maintain roadmarch proficiency by marching only twice a month. We found that our "off season" training required roadmarches of four to six miles once a week to maintain properly conditioned tough feet, our principal concern. Further, the speed of these weekly training roadmarches was more important to maintaining foot toughness, leg strength, and shoulder preparation than was distance or weight.

Because roadmarching can be time consuming, I have since used a cycle of 4-6-4-8-4-12-4-6 weekly miles in current roadmarch training to maintain a quarterly roadmarch standard of 12 miles in three hours with full combat load. But I believe a straight 4-6-4-6 weekly cycle would be just as effective in preparing soldiers to march 12 miles.

Further, and unfortunately, training reality dictates that a unit occasionally will not be able to conduct a weekly roadmarch. Foregoing one roadmarch in a twice-a-month schedule may mean three or four weeks of "softening" and the chances of an increase in injuries when the soldiers resume roadmarch training.

After all, according to Vegetius (390 A.D.), even the Romans customarily marched their infantry 10 miles to camp and return three times a month, carrying 60 pounds (exclusive of their arms), while in military step.

ANTON C. KAISER, JR.
LTC
Ford Ord, California

MORTAR RENAISSANCE

General Michael F. Spigelmire's recent vote of confidence on the mortar's role on the combined arms team (INFANTRY, May-June 1990, pages 1-2) should boost the morale of infantry mortarmen everywhere. The influence of mortars on the U.S. Army's force structure has waned in the post-Vietnam era.

During that period, mortar unit training has been complicated by the reassignment of the observer to the fire support team (FIST). Battalion-level training coordination is now required. Too, mechanized infantry companies have lost their 81mm mortars, which reduces the quantity and responsiveness of indirect fire support to committed rifle platoons.

The U.S. Army lost an opportunity to develop terminally guided antiarmor mortar projectiles (TAMPs) as a top-attack countermeasure to Soviet tanks equipped with explosive reactive armor (ERA). Several TAMP technologies have since been exploited by European defense companies.

In addition, the momentum behind the replacement of our World War II-vintage 4.2-inch mortars with new 120mm mortars has been slowed by fiscal restraints.

So much for the bad news. As for the good news, there are indications that infantry mortars may be poised for a battlefield renaissance. The infantry enters the decade of the austere 1990s with a modernized family of light, medium, and heavy mortars. The coming shift in U.S. strategic interests from Europe to the Third World will likely deemphasize armor and reemphasize infantry as the primary threat.

The diversity of terrain and an intermittent line of sight (LOS) could hamper fields of fire in Third World environments. A realignment of the combat power balance between direct fire and indirect fire weapons may be forthcoming.

Threat vulnerability to deep attack is somewhat lessened in Third World low- and mid-intensity conflicts, but there will always be a close-in battle somewhere along the FLOT (forward line of own troops).

The mortars' traditional advantage of small crews, high rates of fire, and decentralized employment are better exploited in contingency operations than other types of indirect fire systems.

The battle is far from over, though. To keep mortars in the force structure, the infantry must carry the fight to the critics' home turf of cost effectiveness. With manpower the dominant factor in life-cycle costs, combat developers must take a hard look at improving mortar operational effectiveness on a crew member—that is, an individual—basis.

In this context, it appears feasible to "splice" mortars in such a way that operational effectiveness (output) can be increased on the basis of each crew member's input.

One option is to develop a sub-caliber kit for the larger caliber mortars. Equip-

ping the 120mm mortar with a 60mm sub-caliber device, for example, would result in a five-fold increase in the sustained rate of fire of high explosive (HE) ammunition.

Another option would be to group two mortar tubes of the same caliber, using a shared baseplate scheme. Predictable, range-dependent sheaf widths could be designed into the dual-mortar standard. The savings in gunner and assistant gunner spaces could be reinvested by fielding additional mortars.

Open parapets are a persistent problem. Given the Soviet's counterbattery and countermortar capabilities, some sort of pre-fabricated, shell-like enclosures, with cutaways for muzzle and sight, is needed to protect battalion mortar crews in light forces.

In the coming decade of austerity, the infantry must continue to fight hard to keep its superb family of mortars intact.

RICHARD F. FICKETT
Annandale, Virginia

JUST ISSUE EIBs

In my letter in the May-June 1989 issue of *INFANTRY*, I mentioned my concern that a requirement for periodic requalification would make the EIB impossible to get. But my intent was also to show that the EIB is a mark of excellence in our field and should be tough by the already established standards.

Now here I sit, a year later, heartbroken over the other side of the coin—making the award a "Give me."

In my brigade this year, soldiers can re-start the test six times. That means a soldier can "NO GO" out and just start over six times—12 NO GOs!

I know that soldiers who met the tough standards before this test are shocked. Why test? Why not just issue the badges?

In addition, the Army will be looking for discriminators for promotions, assignments, and retentions. The EIB has always been that. It sets a soldier apart from his peers for promotions. As we cheapen the award, we cheapen the Army.

I cannot believe that the people at Fort Benning condone this type of testing. If they do, what are their reasons?

Let's get with it and keep this award the Expert Infantryman's Badge.

BRIAN R. ANDERSON
SFC
Fort Campbell, Kentucky

EIB, SETTING THE RECORD STRAIGHT

As the U.S. Army's primary point of contact for all Expert Infantryman Badge matters, I would like to try to clear up the confusion surrounding the current EIB standards.

Recently, our office, as well as INFANTRY Magazine, has received numerous letters—such as the one above and the one from Sergeant First Class Maddox in INFANTRY's March-April 1990 issue (page 4)—claiming that the badge has been devalued and should either be abolished or changed to "The Infantryman's Badge," since "the standards are the same as those required for the average infantryman."

In the development of the current EIB test, most of the task standards were derived from the same tasks as those found in the Soldier's Manuals, or from similar tasks. In most cases, however, a tough but realistic time standard was added. These standards were aligned to preclude the contradictions between different publications. It should also be noted that the EIB test requires Expert qualification with an M16 (36 of 40 shots) while the Army standard is only Marksman (22 of 40) and tasks such as night land navigation and the 12-mile foot march have no Soldier's Manual or Armywide equivalent.

Additionally, all EIB tasks must be satisfactorily completed within a five-day period with only two retests (only one on any one station). Soldier's Manual tasks, while they represent the Army standard, are imposed on a soldier only when specifically placed on the Common Task Test (CTT) or a soldier's respective Skill Qualification Test (SQT). Soldiers are not required to receive all "GOs" on the CTT or to score 100 percent on their SQTs.

The bottom line is that the EIB test, while more attainable than in the past, remains a test of expert standards. In 1989, only 21.6 percent of all the candidates tested, including those retested from previous years, received the badge.

The current EIB test publication is U.S. Army Infantry Center Pamphlet 350-6, dated April 1989. All previous publications are obsolete. Questions or comments may be addressed to Commandant, U.S. Army Infantry School, ATTN: ATSH-TDT-I (EIB), Fort Benning, GA 31905-5593, or AUTOVON 835-1670/7670.

ROBERT B. WILSON
CPT, Infantry
EIB Team
U.S. Army Infantry School
Fort Benning, Georgia

11th AIRBORNE DIVISION ASSOCIATION

The 11th Airborne Division Association of World War II fame is looking for any ex-members who served with the division from 1942 until 1959.

This includes the 11th Air Assault Group and the 187th RCT from the Korean War period. Both of these groups are considered part of the 11th Airborne Association and are eligible for membership.

For membership information, write or call Paul Brown, National Secretary, or James Hembree, Membership Director, 11th Airborne Division Association, 20 Binks Drive, Clarksville, TN 37042; or call (615) 552-7761.

PATRICK A. DAUGHERTY
Spring Valley, California

INFANTRY NEWS

THE PUBLICATIONS Division of the Infantry School's Directorate of Training and Doctrine offers the following update on infantry publications:

FM 23-90, Mortars. This manual is scheduled for publication by 1 October 1990. It will supersede FMs 23-90, 23-92, 23-85, and 23-36 (Test) and TC 23-90. It will also rescind DA Forms 2187-R, 3214-R, and 3609-R; a new form designed to replace them is included in the manual for local reproduction.

This manual discusses the characteristics, operations, and functions of the 60mm, the 81mm (M29A1 and M252), 107mm (4.2-inch), and 120mm mortars. It also includes the organization of squads and sections, personnel duties, and sighting and fire control equipment (including characteristics and tabulated data). The gunner's examination is in Chapter 9.

FM 23-91, Mortar Gunnery. The coordinating draft should be in the field by now, and the estimated date of publication is December 1991.

TC 21-xxx, Rappelling. The coordinating draft should be in the field by now, and the estimated date of publication is September 1991.

THE ARMY'S 75th RANGER Regiment and its three battalions are now being equipped with a lighter and more lethal recoilless rifle.

The portable 84mm weapon, called the RAAWS (Ranger Antiarmor, Antipersonnel Weapon System), replaces the current M67 rifle, which fires a 90mm projectile. The RAAWS is based on a Swedish-designed weapon.

An improved weapon was needed for several reasons: The M67 (now out of production) is too heavy at 35 pounds and too long (53 inches) to jump with. (It has to be dropped separately, and valuable time is lost on the ground while the Rangers find it, unpack it, and set it up.) In addition, it does not fire illuminating or smoke rounds and cannot be employed at night.

The RAAWS, labeled the M3, is shorter (41.85 inches) and lighter (20 pounds), fires both illuminating and smoke rounds, and uses a night vision device.

A modified version of the M67 is available that is only slightly longer than the M3 at 43 inches, but it still weighs 32 pounds and fires rounds that weigh nine to 13 pounds each. By contrast, the RAAWS fires seven-pound projectiles, and this significantly increases the number of rounds that Rangers can carry into battle.

Lethality also played an important role in the selection. Preliminary tests of the M3's high-explosive antitank (HEAT) round against targets at 600 meters have revealed that it is about twice as effective as the M67 in hit probability—33 percent as compared to 17 percent. The maximum effective range of the M3's high explosive round, used against personnel and lightly armored targets, is two-and-one-half times that of the modified M67's HE round.

Taking aim with the RAAWS in the kneeling position.

The Ranger antiarmor teams will use the RAAWS during special operations missions, infiltrations, exfiltrations, raids, ambushes, and defensive operations. Its primary mission will be to defeat vehicles, exposed or protected personnel, and field fortifications. Its secondary mission will be to identify targets by marking or illuminating them and to obscure the enemy's vision.

THE ALLIED KINETIC Energy Recovery Rope (AKERR), which enables a tracked armored vehicle to recover a like vehicle, has been adopted by the Army.

One size is available to support mid-sized tracked vehicles including the Bradley fighting vehicles. The 64mm rope is available as part of a kit, NSN 4020-01-

211-8382, which also contains hookup hardware (shackles), a storage bag, and an operator's manual.

The recovery method is as follows:

- The towing vehicle reverses as close as possible to the bogged vehicle. The rope is connected and snaked to allow tangle-free deployment. (For situations where it is not possible to get close to the bogged vehicle, extension cables may be used, but the AKERR must be connected directly to either the recovery or the towing vehicle.)
- The towing vehicle accelerates to the maximum speed possible and snatches the rope with its total energy at that speed. When the towing vehicle is slowed or halted, its kinetic energy is converted into the potential energy of a stretched rope and transferred by the rope into the bogged vehicle. (If the bogged vehicle has power to assist this transfer of energy, recovery can be faster.)
- After a slight pause, the bogged vehicle rises free. If it does not do so on the first attempt, the process should be repeated. Once the vehicle is free, the AKERR can continue to be used in towing it.

The authorization for the device is Common Tables and Allowance (CTA) 50-970. The item manager is Commander, U.S. Army Tank-Automotive Command, ATTN: AMSTA-FHCS (Sam Hazime), Warren, MI 48397-5000; AUTOVON 786-5940.

A GAS STATION ON WHEELS has been developed for use with the Army's 5,000-gallon fuel tankers such as the M969, M970, and M131 series trailers.

These tankers, towed by 5-ton trucks, are now equipped to handle only two vehicles at a time. The new kit will enable troops to set up temporary stations that are capable of refueling up to eight of these vehicles at a time.

The kit consists of eight 50-foot sections of hose connected to form a 400-foot-long pipeline, which attaches at its midpoint to a tanker fuel valve, and eight 25-foot fueling hoses with nozzles.

In operation, the pipeline is extended along the ground 200 feet in front of and behind the tanker. The fueling hoses are then connected to the pipeline through T-joints. The joints are spaced 50 feet apart to allow enough room for vehicles to park while refueling.

When not in use, the hoses and associated fittings are disassembled, capped, and stored in a special reusable container that has removable sides and top for easy stowage and unpacking.

THE NATIONAL INFANTRY Museum has received several noteworthy donations recently. One, a life-size bust of General J. Lawton Collins, was presented by the sculptor, Colonel (Retired) Ludlow King.

General Collins had 39 years of active service, many of which he served in the infantry. He graduated from the U.S. Military Academy in 1917 and from the Infantry School in 1925, after which he served as an instructor in weapons and tactics at the School.

During World War II he commanded the 25th Infantry Division, leading it successfully against the Japanese forces on Guadalcanal and the New Georgia Islands. He later transferred to the European Theater of Operations, where he commanded the VII Corps in the D-Day assault on Utah Beach on 6 June 1944. He continued to lead the corps across Europe until the end of the war in 1945. He served as Chief of Staff of the Army from 1949 until 1953.

Colonel King was a great admirer of General Collins and had long wanted to do something to honor this great leader. He served with General Collins in the VII Corps as chemical officer. He was wounded a few days after D-Day and was awarded the Bronze Star and the Purple Heart medals. He retired in 1945 because of the wounds he sustained at that time.

Another bronze sculpture, this one depicting the 173d Airborne Brigade "Sky Soldier," was donated and is now on display in the Vietnam section of the exhibits. A Viet Cong flag captured by elements of the 25th Infantry Division in the Tay Ninh Province of South Vietnam during the Tet offensive of 1968 is another interesting addition to the collection.

The Regimental Quartermaster Sales Store continues to operate at a good pace. A van has been purchased, and a selected array of merchandise is offered at Infantry Training Center graduations and at veteran or unit reunion sites on post. More than 300 items are now offered for sale. A catalog is available on request, and the store is ready to accept mail orders.

Many of the museum's visitors will be happy to know that the elevator, which had been out of service for about a year, has been replaced and a new air conditioning system is in place and working.

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

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

A ONE-PIECE DRIVE SHAFT of graphite and epoxy has been proposed as a replacement for the two-piece steel front drive shaft on the HMMWV (high mobility, multipurpose wheeled vehicle).

The four-wheel drive HMMWV now uses two drive shafts—a 27.1-inch shaft for the rear wheels and a 57.8-inch shaft for the front wheels. Because of its length, the front shaft had to be designed

as a two-piece unit.

Although the composite shaft costs about $30 more than the steel shaft, it would eliminate problems with corrosion, increase the speed at which the vehicle could safely travel, and require less maintenance. In addition, it weighs only 12.5 pounds while the steel shaft weighs 26 pounds.

If the composite shaft is approved, it may also be used on other trucks in the future.

THE NEW DESERT MOBILITY Vehicle System (DMVS) will fill an important Special Forces requirement for a ground vehicle system to use on long missions. A Special Forces operational detachment must now rely solely on air transport for rapid mobility.

In support of the program, 63 HMMWVs (high-mobility multipurpose wheeled vehicles) will be modified to meet this need, and modification kits will be provided for 12 others.

The modifications include the following:

- Removing the run-flat tire devices from the wheels to permit the crew to perform tire repairs, and providing a 12-volt air compressor for inflating tires. The run-flat tire system was never intended for long-distance, cross-country operation while deflated.
- Replacing the driver's and right-front passenger seats (with bucket seats from the ¾-ton commercial utility cargo vehicle) for improved comfort during cross country operation.
- Lengthening the seat belts with a commercially available restraining system that provides better support and keeps crewmen in their seats while traveling at high speed over rough terrain.
- Installing storage racks in the area normally occupied by the rear seats to carry 12 "jerrycans" (capacity of five gallons each of water or fuel).
- Installing a lighted magnetic compass for use in off-road navigation.
- Installing an interior rear-view mirror.
- Providing additional ready ammunition capacity by installing two ammunition boxes atop the vehicle.
- Installing wire mesh protection for the lower radiator hoses to protect them against cross-country wear and tear.
- Installing handholds for the crewmen to grasp during rough travel.
- Installing additional tie-downs to keep cargo from bouncing around.
- Installing duplicate vehicle instruments for the navigator.

In addition, the HMMWVs are being painted a sand color instead of the traditional three-color camouflage pattern. The acquisition of a DMVS trailer and motorcycle as non-developmental items is also being pursued.

The DMVS program is a joint effort involving the Tank Automotive Command and the John F. Kennedy Special Warfare Center.

A BATTALION MAINTENANCE pamphlet has been developed by the 705th Support Battalion (Maintenance) at Fort Polk, Louisiana, for use at the operator and organizational levels.

The pamphlet summarizes the battalion's approach to maintenance and is intended to reinforce but not to duplicate a maintenance standing operating procedure. Since the document is generic, it can be applied to most battalion-sized units.

The pamphlet outlines the battalion commander's maintenance philosophy and includes segments on such items as inspections; external maintenance assistance; safety; motor officer selection; preventive maintenance checks and services; prescribed load list (PLL); and the Army maintenance system (TAMMS) clerk operations.

More information or a copy of the pamphlet is available from Major Larry Harman at AUTOVON 863-7915/6101, or commercial (318) 535-7915/6101.

THE HELMET IN THE PASGT (Personnel Armor System Ground Troops) must be carefully fitted to each soldier. Proper sizing of the PASGT helmet is based on the three-dimensional shape of the human head—length, width, and circumference—with a half-inch of standoff between helmet and head to protect the head properly. It has been estimated, however, that only about two percent of our soldiers are being properly measured.

The Natick Research, Development and Engineering Center is encouraging Central Issue Facilities (CIFs), which do the fitting, to take these measurements before issuing a helmet. First, calipers should be used to measure the length and width of the head, then a tape to measure the circumference. For instance, a soldier's head may measure small in width, medium in length, and large in circumference. The largest of the three is his proper helmet size.

Any questions concerning the fitting of the helmet may be directed to the Natick *Hotline*, AUTOVON 256-5341; commercial (508) 651-5341.

THE NEW FLAME AND INCENDIARY Technology (FIT) Program is now in exploratory development at the U.S. Army Chemical Research, Development and Engineering Center (CRDEC) at the Edgewood area of Aberdeen Proving Ground, Maryland.

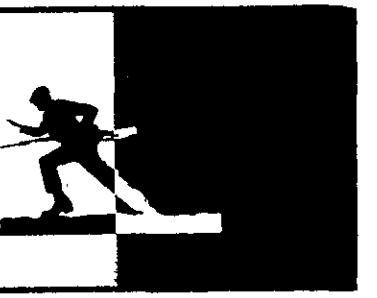
Currently, the Army has only one flame weapon system in its inventory—the M202A1 launcher with the M74 66mm incendiary rocket clip. The portable M202A1 "flash" is a 28-pound weapon consisting of four launch tubes grouped together. It is designed to be used against bunkers, and is being held in war reserve stocks because there are so few of them.

The new program is using the M74 warhead to conduct baseline testing that will establish a starting point from which a much-improved flame system can be developed. Another requirement of the program is to use an existing delivery system instead of developing a new one.

The Army is also looking at ways to have the improved FIT round fired from the standard M72A2 light antitank weapon (LAW). Incorporating the improved payload into the LAW will be the role of the U.S. Army Missile Command.

Even though the program is in the hands of CRDEC and the Chemical Corps, flame and incendiary items will probably be used by the infantry, field artillery, special operation forces, and the Marine Corps.

PROFESSIONAL FORUM



Shaping the Army of Tomorrow

GENERAL CARL E. VUONO

EDITOR'S NOTE: This article is based upon remarks made by General Carl E. Vuono, Chief of Staff of the Army, to the commanders attending the Infantry Conference at Fort Benning in April 1990. It is part of an ongoing effort to communicate the Army's vision through each of the branch journals to the officers, noncommissioned officers, and soldiers of the Army. Although the address was presented before the Iraqi invasion of Kuwait, that crisis underscores the importance of this vision and the characteristics the Army must have in the years ahead.

Each time I see the statue of the infantry leader that stands in front of the Infantry School, I am reminded of what the Army is all about. For the infantryman represents the essence of the Army. As T.R. Fehrenbach says in his classic book on the Korean War, "You may fly over a land forever; you may bomb it, pulverize it, and wipe it clean of life. But if you desire to defend it, protect it, and keep it, you must do this on the ground, the way the Roman legions did—by putting your men into the mud."

In the final analysis, it is the tough, courageous infantryman who determines the fate of nations. It is he who throughout history has allowed great civilizations to flourish. And when those cultures became so sophisticated that they no longer produced quality soldiers, they were overrun by the tough, courageous infantrymen of other nations that still understood the importance of a trained and ready army. Therefore, although we hope the peculiar talents of our infantrymen are never needed, we must ensure that they—as well as the rest of the Army—remain trained and ready should the nation call.

I want to outline the Army's vision of the future, the plans by which we are shaping the force for this decade and beyond, and what I ask of each of you as a vital part of that Army.

During the past year we have witnessed momentous events in Eastern Europe and the Soviet empire. These events demonstrate that our unrelenting defense of freedom for the past 40 years has not been in vain. Simply stated, we are winning, and the triumph of democratic ideals that we have witnessed in Europe has been due in no small part to the selfless service of millions of U.S. soldiers—soldiers who have manned the ramparts of freedom from the Fulda Gap to the DMZ in Korea—soldiers who, supported by the other services, have stood shoulder to shoulder with our allies and provided an opportunity for the natural weight of oppression to bring the communist regimes of Eastern Europe to their knees.

But as much as we might like to think that the threats to our security have diminished to the point that we can start spending the peace dividend we hear so much about, the struggle is not over. A realistic look at the turbulent world around us leads those of us who are charged with the responsibility for our nation's security to proceed with caution.

Imperatives

If the Army is to meet the challenges our nation will face in the decade to come, it must keep to a simple overarching vision—a vision of a trained and ready Army today and tomorrow, prepared to meet its strategic obligations anywhere, any time. As we shape the Army to realize this vision, we know that we can begin from a solid foundation, for the Army of 1990 is quite simply the finest peacetime force this nation has ever fielded. And in the forefront of that force is our infantry—the best in the world.

The Army of today is the product of a comprehensive program built on six enduring imperatives. These will not be new to you, nor should they be. They have forged the Army of 1990, have been tested in the crucible of combat, and now serve as a beacon to guide us into the next century. But I do want to emphasize some key points about them because—although

events will require us to make changes in the Army—it is important that we maintain a degree of continuity in the fundamentals of our profession:

Have an Effective, Flexible Warfighting Doctrine. The Army exists to fight, and to do so effectively it must have leaders who understand their profession. Doctrine is important because it not only determines how to fight, it drives our research and development and our acquisition of weapon systems; it also determines, in large measure, our force structure and design.

The Infantry Center has been at the center of much of the progress over the past decade in the development of infantry doctrine and in the evolution of AirLand Battle doctrine. As a result of these efforts, we now have basic warfighting doctrine to guide infantry units on missions that span the entire operational continuum.

There is more work to be done in some areas, such as the integration of heavy and light forces and of conventional and special operations forces. But the key task for those of you who lead infantry units—whether they are platoons or divisions—is to study our doctrine, understand it and, more important, teach it to your subordinates. Not only must you teach them the tactics, techniques, and procedures they need to implement it, you must ensure that they understand how they fit into the combined arms team, for that is the way we fight.

Maintain a Mix of Forces. We must maintain a mix that includes armored, light, and special operations forces so that we can tailor force packages that are appropriate to the particular threats we may face. Those who argue that we need only light forces for contingencies such as our recent experience in the Republic of Panama need to look around the world at the growing arsenals of tanks, artillery, and other heavy weapons that are in the possession of nations that do not share our interest in peace and freedom. They should also take note of the important role played by the regulars of the 6th Infantry in Panama.

Since the infantry is central to our heavy, light, and special operations forces, you must not only master the requirements of each, you must be able to integrate their unique capabilities. I am particularly gratified to see the great progress we are making in that regard, with our heavy-light rotations at the National Training Center (NTC) and our success in task organizing integrated units on REFORGER exercises. We are also making progress in incorporating special operations forces with heavy and light forces into all of our combat training centers. Recently, too, we began conducting contingency operation rotations—including heavy, light, and special operations elements—and we will continue to improve our ability to integrate all of these effectively.

To ensure that we can fulfill our worldwide responsibilities across the entire

General Carl E. Vuono
Chief of Staff of the Army

range of requirements, we must strike the correct balance between the Active Army, the Army National Guard, and the Army Reserve. Reserve Component units are now going to both the NTC and the Joint Readiness Training Center (JRTC) so that they, too, can benefit from the combat training experience offered there.

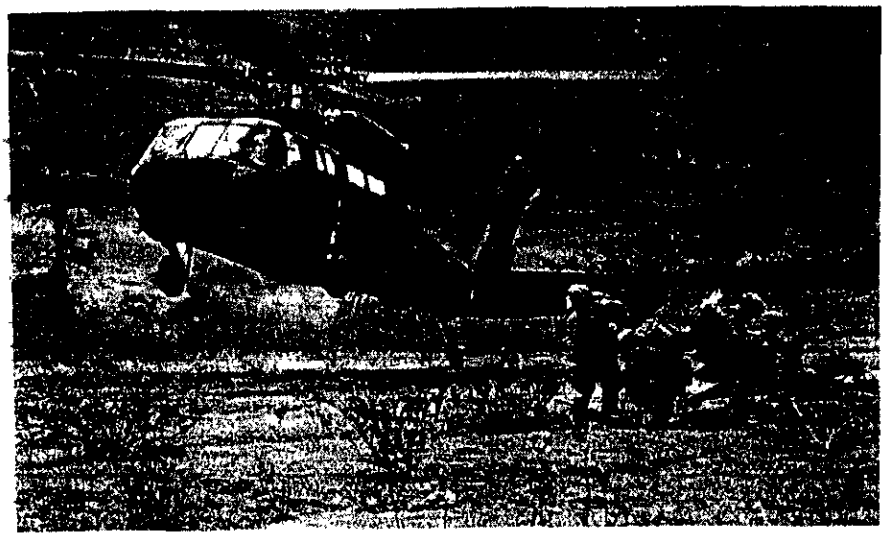
Modernize Our Forces. Next, we must continuously modernize our forces so that our soldiers can maintain their qualitative edge over any potential enemy. Because of our investment in night vision devices, for example, in Panama we were able to execute the most ambitious and successful airborne assault ever conducted during hours of darkness. We are not resting on our laurels, however; we are continuing to pursue research and development efforts to make sure we will have the weapons we need in the future. As one example, we are working to improve our antiarmor capabilities with the development of the advanced antitank weapon system, medium (AAWS-M), which is to be fielded in 1994.

Conduct Tough, Realistic Training. We must conduct the kind of training that is at the heart of readiness and that ultimately guarantees success in battle. The importance of training cannot be overstated; it is the foundation of both a credible deterrence and a capable defense.

Leaders at every level are responsible for training the Army, and we must ensure that training remains our top priority. As we shape the Army of the future, we are not cutting back on our commitment to quality training. Yes, our task will be more challenging in the years ahead, for austere budgets will require leaders who are imaginative, innovative, and most of all, committed to training. We are continuing the pace of operations at the combat training centers and are implementing programs that will give infantry leaders an opportunity to benefit more from this experience by combining simulations with maneuver.

We are also continuing our campaign to improve training with the publication of Field Manual (FM) 25-101, the companion document to FM 25-100. This manual, aimed at battalions and companies, provides clear guidance on implementing the training strategy outlined in FM 25-100. I expect commanders at every level to fully implement the guidance in these manuals so that we can maintain uniformly high standards for training throughout the Army.

Develop Competent, Confident Leaders. Quality training requires quality leaders. Our fifth imperative, therefore, is to continue to develop competent, confident leaders at all levels. Developing leaders is one of our greatest responsibilities, and perhaps our greatest legacy. Tomorrow, as today, our officers and noncommissioned officers will have to be decisive, even in "the fog of war." Bold, imaginative leaders of this quality are not born; they continuously develop themselves throughout their careers. Read the



Training is at the heart of readiness.

memoirs of our great leaders of the past—the Marshalls, the Bradleys, the Eisenhowers—and you will note the one theme they have in common is a commitment to continuous self-development. If our Army is to have the leadership it needs now and in the future, leaders must challenge both themselves and their subordinates to emulate the dedication of these great captains.

Maintain a Quality Force. It is the quality of the soldier that has made the difference in battle throughout history. Quality soldiers continue to be essential to maintaining a trained and ready Army today and in the future. The soldiers who went into combat last December, many for the first time, were highly motivated, dedicated young Americans—the best our nation has to offer, and the finest in our history.

Vision of the Army

With these six imperatives to steer by, we must now shape the Army of the future. In an era of great uncertainty, let me be clear on this point: As we shape that Army, we will not compromise, we will not equivocate, we will not yield on the six imperatives.

To ensure that our Army will continue to be trained and ready to defend the principles of freedom and democracy, and that it will continue to be a place where quality soldiers will want to serve, we must move forward aggressively. We must ensure that it is fully capable of responding to the challenges of the changing international environment and increasingly austere budgets. We must apply the lessons of our past experiences and take command of our future. If we do not, someone else will.

We have all shared in the toil and the sweat of building the trained and ready Army of today, and we cannot allow that effort and that success to be squandered. Even under the most draconian budgetary constraints, we must never accept an Army that is undermanned, poorly trained, or ill-equipped—an Army that is fractured by the budget and that is neither credible for deterrence nor capable of defense.

Accordingly, over the next five years, we will carefully, deliberately, and gradually shape a smaller force—a difficult course of action for all of us. Even as we respond to change, however, we must maintain a continuity of training, readiness, and quality, and a continuity of capability that will protect the nation during an era of great uncertainty.

We can do all of this if we adhere to the plan we have developed and refined over the past two years—a plan that has our strategic responsibilities at its foundation and that takes into full account both the evolving international environment and the budget constraints that we face.

If we follow this plan, we will continue to have an Army that has the vital characteristics needed to support our nation's security:

- An Army that is versatile in its ability to respond to crises, conflicts, and contingencies throughout the world.
- An Army that is deployable and able to project combat power wherever our nation needs it, given the airlift and sealift needed to move enough forces quickly to potential trouble spots.
- An Army that is lethal, able to fight and win on any battlefield, against any enemy, anywhere our interests may be threatened.
- An Army that is expandable, one that can grow rapidly in response to any sudden collapse in the international order.
- An Army that will continue to be relevant to the needs of the nation as we sustain our unique strategic contributions to the security of the United States.

Professionalism

The Army of the 1990s will be a challenging, exciting, and rewarding place to be—a place where there will always be room for quality men and women, both in the Active Army and in the Reserve Components. The Army of the future, more than ever before, will require leaders at all levels—NCOs and officers—who are dedicated professionals. I expect leaders to demonstrate the qualities of competence, responsibility, and commitment that are essential to the defense of our nation.

We must instill competence in the profession of arms. Competence is not developed in a day, a month, or a year. We must make it a continuous process that incorporates education in our military schools, experience in operational assignments, and an individual commitment to self-development.

Developing that competence will require tough, realistic training, dedication, and plain hard work. As our experience at the combat training centers has shown, we must stress such fundamentals as land navigation and weapon positioning.

Professionalism requires more than a mastery of technical skills. Leaders must not only be competent—they must also have a sense of responsibility that embraces the soldiers they lead and then extends to encompass the entire Army. All

leaders must understand that they are responsible for the security of the nation and its people, a sacred trust that separates our profession from other walks of life.

We must take care of our soldiers and treat them with the dignity and respect they deserve. And since more than half of them are married, we must also be sensitive to the needs of their families. Those families must be made to feel they are an important part of the total Army team. Programs such as the Army Communities of Excellence have improved both the participation and the pride of Army families as they have joined together to improve their quality of life. We must continue such efforts and look for other opportunities to make the Army a great place to be.

Above all, we must set the example for our young leaders and soldiers. As General Maxwell Taylor once said, "The badge of rank we wear on our shoulders is a badge of servitude, servitude to our soldiers." A leader must accept the responsibility of being a role model 24 hours a day, seven days a week. And always, a leader's personal integrity must be beyond reproach. In short, a leader must be able to look his soldiers in the eye and say with confidence, "Follow me; do as I do."

Finally, professionalism requires commitment. Our nation asks much of its military leaders. It asks that we live up to a higher moral standard than that of the society we are sworn to protect. It asks that we endure the hardships of isolated posts, family separations, and sometimes onerous duty. It asks that we undergo tough, realistic training. And it asks that we be prepared to make the ultimate commitment—to risk our very lives in the defense of the nation.

Ours is a special calling. We are entrusted with an important responsibility—the protection of our great nation. As we pass through a period of uncertainty, and as you address the concerns of the soldiers you lead, do not let them forget that the work they do is vital to the future of our great nation, and to peace and democracy around the world.

Our soldiers should take enormous pride in the contribution they are making to the preservation of the ideals upon which this nation was founded. To people all over the world—to those who have freedom and to those who hope for it—the U.S. soldier embodies the ideals and principles of individual liberty for which this country stands.

We can never relax our efforts to maintain a trained and ready Army to support and advance those ideals and principles. We have a sacred duty to the men and women we lead, to the United States, and to freedom everywhere. And in this task, we must not—and shall not—fail.

Tanks with Infantry, Part 1

CAPTAIN JOHN J. WINTELS
CAPTAIN KRIS P. THOMPSON

EDITOR'S NOTE: In this, the first of two articles on the employment of tanks with infantry, the authors first give a historical perspective on the general subject. Then they offer their thoughts on what tanks can do for infantry units and on what the employment of tanks can cost those units—particularly light infantry units—in terms of logistics, speed, mobility, and stealth.

In the second article, the authors will give specific examples of likely missions and their thoughts on what tactics, techniques, and procedures might be employed in those missions.

They feel that while members of light infantry units might benefit the most from their articles, mechanized infantrymen can also learn something from them.

One of the primary roles of armor has been the task of supporting infantry. Indeed, the very genesis of the tank came from an effort to find a way to break the trench warfare deadlock in World War I. The initial research, which later resulted in the first tanks, focused on finding a machine that could cross deep and wide trenches while simultaneously suppressing the enemy force occupying its trench lines, especially its machinegun crews. Thus, the original purpose of the tank was to enable the infantry to close with the enemy.

Along with the development of their blitzkrieg concepts, German military leaders between the wars recognized the parallel need for direct gunfire support for their infantry. Erich von Manstein, then a colonel (who also authored the plan for the 1940 invasion of France us-

ing massed armored formations), proposed that each infantry battalion have an organic assault gun battalion. The *Sturmartillerie* (assault artillery) was born.

Interestingly, the newly organized *panzertruppen* (tank) arm suggested that the assault gun project be scrapped because it was interfering with the production of tanks. It became clear, however—much to the chagrin of the tank developers—that if no assault guns were produced their tanks would be tasked with infantry fire support in addition to their armored spearhead role. The decision was then made to proceed with the formation of the *Sturmartillerie* branch.

Throughout World War II, and despite attempts to move the assault guns into an antitank role, the *Sturmartillerie* adhered to its original purpose of supporting infantry. In addition, most of the World War II armies fielded tank destroyers that also provided fire support for the infantry. The assault gun and the tank destroyer were not technically tanks, but the need to provide armored vehicles, and tanks if necessary, to give direct fire support to the infantry was generally recognized.

There is one historical trend that pervades the vast majority of the readings on armor support for infantry: Planners have consistently underestimated the ability of tanks to maneuver in restrictive terrain. Today, the topic usually comes up when planners are contemplating what they perceive to be "an infantry war." This perception is based on terrain, such as jungles or built-up areas, or on the restrictions imposed by the lack of deployment resources, such as those during a major amphibious operation. Even when tanks can be moved to a battle area and supported there, planners habitually either leave them out completely or employ very few.

As a recent example of this kind of thinking, most senior leaders in the U.S. Army through 1965 were convinced that tanks were not needed in Vietnam. This notion was based on studies indicating that tanks would not be able to operate in the mountains and jungles of Vietnam but would be restricted to employment in a few coastal areas. Admittedly, there was no recent experience to draw from and little doctrine on using tanks in a jungle environment. Predictably, many of the first units that deployed to Vietnam went in without tanks, even if they had organic tank units. Some mechanized infantry units were even stripped of their armored personnel carriers before they were deployed.

Two years later, a new mobility study determined that tanks could operate in 61 percent of the country during the dry season and 46 percent during the wet season. After the first tank units proved they could move with and support the infantry in areas previously considered impenetrable, the Army deployed more and more armor forces to South Vietnam until armor and mechanized units represented more than a fourth of the combat battalions in the country.

The tactical tie-in between infantrymen and the tanks supporting them has been constant throughout modern military history. The tank can do just about anything the infantryman needs for it to do. It can crush a barrier within a city, or become one. It can become a stationary pillbox that can help seal off a cleared area, or stop traffic, or cover prisoners of war.

It can also punch holes in walls, push cars out of the way, clear vehicles blocking an airstrip, shoot down aircraft, pull trucks out of ditches, transport infantrymen and supplies on its back, and crush bunkers and trucks. In short, it is a versatile workhorse. The tank is not a bulldozer and all of these capabilities do detract from its primary mission, but it can still perform those tasks.

Some tanks also come equipped with searchlights, both white and infrared, and white light is great for use during peacekeeping operations, controlling crowds, looters, and roadblocks. It is also good for designating targets (especially snipers) and thus for coordinating fires.

What a tank can do for you, the infantry leader, is limited only by your imagination, tempered by the wise advice of the tank commander. The following will give you some ideas concerning firepower, shock, mobility, observation, and protection.

A tank can effectively shoot a main gun round about 2,000 meters, and it can shoot several different rounds for different purposes. Some that are designed to pierce armor, for example, have a minimum effect on masonry. Likewise, a round that can take out a building may not be effective against other armor. Ask the tank commander, and he can tell you precisely what his ammunition can do.

The tank also carries two or three machineguns. One is coaxial, which means it lies alongside the main gun tube and shoots wherever the main gun is pointed. The other is higher on the turret, usually free swinging (and thus can fire at upper stories), but it forces the operator to expose himself to shoot.

The tank's firepower can support the infantry in many ways: It can provide antiarmor fire support and precision fire support that avoids collateral damage and that suppresses the enemy during close assaults.

The shock effect of tanks is usually described as occurring when tanks mass to hit an enemy force. But the term is relative. At times, only one tank can "shock" an enemy and turn the tide of battle. For example, in such peacekeeping operations as crowd control or suppressing snipers in urban terrain or crashing through jungle growth to root out an enemy, a single tank in support of a platoon can create enough shock to enable that platoon to gain the initiative.

Tanks were originally designed to move cross country, traversing trenches, ditches, and soggy or broken ground. The width of the tracks allow the tank's weight to be distributed, permitting it to move into places where only dismounted soldiers usually think of going. Jungle or other dense foliage, most trees, walls, obstacles, ditches, sniper fire, barbed wire—a tank can overcome all of these, but within certain limits.

For example, barbed wire can get caught up in the tracks and eventually stop a tank, and if enough trees are knocked down incorrectly, a tank will stop. A tank can move through mud, but

it can also throw a track (the track rolls off the road wheels). The point to remember is this: When in doubt, ask the tank commander what he can or cannot do.

In close terrain, teamwork between tanks and dismounted infantrymen is essential. The tank can help blast a path for the infantrymen and overwatch their advance. The infantrymen can help the tank pick its route and can give it local security.

At times it will be important for you to know just how big a tank (or other armored vehicle) is. This information is easy to find, but here are some rules of thumb to help you determine where it can "fit" and where it can't:

- Big tanks (M1A1, M60A3) weigh 60 tons and are five paces wide.
- Medium armored vehicles (M2 and M3 Bradleys) weigh half as much (20 to 30 tons) but are just as wide.
- Small armored vehicles (personnel carriers, improved TOW vehicles, tracked ambulances) are half the weight of the mediums (10 to 13 tons) and are only about half as wide (three paces).
- The M551 Sheridan falls somewhere between the medium and small categories.

Closely related to mobility is speed, and speed has two aspects. One is the vehicle's physical ability to move from point to point. The other is the speed with which armor units can mass, disperse, and concentrate at critical points on the battlefield.

For these reasons, armor, even in small packages, is a great exploitation force that can be used to take advantage of opportunities or as a great reaction force that can roll quickly to handle threats at critical points.

Tanks can also be an aid in observation. In the matter of what a tank crew can or cannot see, there are three factors to be considered. First, just by riding in a tank, the tank commander can easily be up to 10 feet above dismounted soldiers. And with a fairly good pair of binoculars, he can see much farther out.

Second, the tank has powerful optical sights. Although the exterior lenses are somewhat susceptible to bullets and shrapnel, they are pretty reliable. The armored turret allows the crewmen inside to continue observing under almost all conditions.

Finally, the tank crew, using thermal sights and image intensifiers, can provide 24-hour observation under most weather and battlefield conditions, including smoke.

Tanks have armor protection that can defeat most of what flies around the battlefield. At the same time, though, there are enough lethal weapons aimed against them to emphasize this point: Every known tank can be defeated.

Even though armored vehicles represent state of the art technology and are complex pieces of machinery, their greatest effect is on the attitude of the soldiers who come in contact with them. Another way of putting this is that armor is a state of mind.

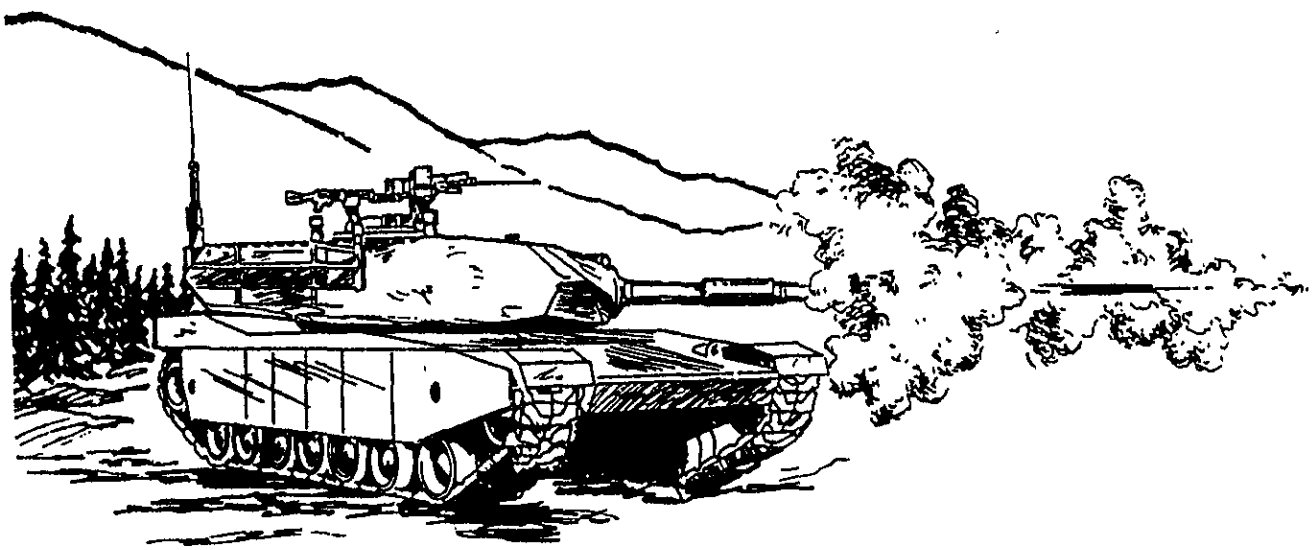
Armor leaders and crewmen are trained to think and act on the basis of their vehicles' capabilities and limitations. Because the vehicles move fast and far, the leaders must think fast and far. It is not uncommon for armor crews to carry graphics that take them across several map sheets.

Just as important is the effect of tanks on the infantryman's morale. From World War II through the recent operations in Panama, the sound of even a few tanks has been music to the infantryman's ear. Tank crews supporting infantry have always had an intense feeling of loyalty and dedication to the foot soldier.

After considering all of these things that tanks can do for you, you must also consider what they will require from you when you use them.

First, the armor crewmen who suddenly find themselves attached to your unit are going to be disoriented at first. They probably won't know the mission, the enemy situation, the friendly situation, or the radio call signs and frequencies. And they probably will not have the proper graphics.

As an infantry leader, you must think these difficulties through before you get your attached armor and develop a good



SOP that will put timely information into the hands of the crewmen and you must include them as full members of the team.

At the same time, though, you should realize that the average tank commander has been "tanking" for some time, and you can trust him. He has probably worked his way up from loader to driver and then gunner and knows his system and its capabilities well.

Consider communications carefully. It is not rare for a tank commander to have to talk to a fellow tanker, his platoon leader, the small infantry unit he's shooting for, and the higher headquarters he's attached to—all at once. And he probably has only one or two radios at most.

The key is to try to see that communications do not fail when you need them most. One of the most frustrating and dangerous things is not to be able to talk to your supporting tank element. Develop a foolproof method of contacting him, or having him contact you.

TALKING TO TANKS

How do you talk to a tank? What does your SOP say? Tankers use hand signals, radios, and external telephones (except on the M1) to communicate with elements outside their vehicles. Infantry leaders should be able to communicate using all of these. Other means include climbing on the tank to talk to the tank commander face-to-face or having him dismount and talk to you on the ground, using the tank as a cover. And there is no reason why he can't accompany you on your leader's reconnaissances.

Finally, it is not rare for today's radios to overheat, break, or fail to transmit as far as they are supposed to. The new radios now making their appearance will fix many of these problems. Although their planning ranges may be the same, they will be more reliable.

Keeping tanks supplied is the biggest problem for light infantrymen. If you're not familiar with diesel engines or armor, you'll be surprised at what it takes to keep them going. And without the proper supplies, the vehicle is useless.

The tanks need Class III supplies, usually on a daily basis. Either the tanks have brought these supplies with them or your unit has agreed to provide them. But there is a third possibility—nobody has planned for them or checked to see that the plan is being followed. Poor planning or coordination results in dry fuel tanks and broken engines.

Suppose, for example, that you're an infantry company first sergeant and find yourself operating with a platoon of four M1 tanks. What can you expect?

If the platoon operates continuously, it will need fuel twice each day. It will probably need ammunition as well. (M551 Sheridans can probably run for one or two days.) The M1 burns almost as much fuel at idle as at full speed. After running continuously for six hours, it will be at 30 percent of its fuel capacity, assuming it was full to begin with.

The tank carries a fuel container that has a 500-gallon capacity. It can run on almost any type of fuel—diesel, kerosene, even mogas for short periods. Since it has a multifuel engine, you can get fuel almost anywhere, but for this example let's suppose your S-4 has coordinated for resupply by HEMTT (heavy expanded-mobility tactical truck). This means that he has actually coordinated for two vehicles—one cargo and one fueler.

The HEMTT fueler has a capacity of 2,500 gallons but usually carries only 2,400 gallons to allow for fuel expansion. It can pump the fuel out at the rate of 300 gallons per minute, using two nozzles at a time. Thus a four-tank M1 platoon can top off in five minutes.

The cargo HEMTT has a crane and drop sides, so it is extremely versatile. Ammunition is usually loaded right off the side of the HEMTT into the tank. Because ammunition and fuel resupply can take place simultaneously, the five-minute estimate for the platoon is still good.

But what else do you need to consider?

First, what refueling and rearming technique will you use? Based on METT-T, you must decide whether to bring the supply vehicles (logistical package, or LOGPACK) to the platoon or to send the platoon back to the supply point (which is most likely). Bringing the LOGPACK forward implies good roads, a secure sector, and no need for stealth. Sending the tanks back implies a need for security, good roads, tight command and control, and good map reading.

Second, the area you choose for resupply must be secure, and this may require support from the infantrymen. The tank crew will handle the refueling and the reloading of ammunition, but they may need ground guides, local security, and someone to mark the area, especially at night.

Third, consider the time required. The greatest time is spent in moving to the supply point, pulling up to the HEMTT, grounding the HEMTT, and opening the containers. Compared to all that, the actual refueling is fast.

Finally, don't forget the package products, parts, special tools, food, and water that the tank crews will also require. Be sure to tie these into the LOGPACK. Package products (oils and lubricants) usually come with the fuel and ammunition, but the tank commander may need special quantities or types and may need your "horsepower" as a first sergeant to ensure that he gets enough.

Sometimes even the best plans fail. At these times, the initiative of the U.S. soldier is essential. A good tanker can scrounge what he needs almost anywhere. But this is not a method, only a quick fix. There is no substitute for a reasonable and meticulously prepared logistical plan.

PMCS TIME

Armored vehicle crewmen must be given enough time to perform regular preventive maintenance checks and services (PMCS). The longer the vehicles run, the more checks they need. In other words, on top of the time required to feed the tank its grease, oil, fuel, and ammunition, it needs time to be "stroked." It may need parts, special tools, manuals, experts, or all of these.

If it breaks, you will have to fix it, blow it in place, or move it. And how do you move a tank? Do you know what type of tow bars, recovery vehicles, winches, cables, or hook-ups are required? What about security? Someone has to guard the broken vehicle, the repair vehicles, and the supplies, and do

it so that incoming rounds don't take all of you out. It's a tough problem.

Time is usually the biggest constraint. If armor is used as a reaction force, or to constantly suppress and engage the enemy, breaking it away for maintenance is hard. But you have to listen to the tank commander when he tells you, for example, that an engine is about to fail. If you think guarding a tank while the crew pulls maintenance is a problem, consider how much more of a problem you'll have when the engine blows. The cost is unavoidable. The best you can do is manage when you're going to pay that cost.

Security is a simple equation—and a two-way street. The closer the terrain, the more susceptible an armored vehicle is to being ambushed. It needs protection, especially to its flanks and rear. But the closer the terrain, the more opportunity the enemy has to slow down the infantry, and the more the infantry needs the tank's firepower to blast its way through and the tank's armor to protect its movement.

How will the protecting element move? Are you willing to slow the tank to the speed of dismounted infantrymen? Where will the tank be in relation to its supported element? These are questions best answered through the development of simple drills and easily communicated SOPs.

When it comes to target identification and designation and fire control, there are a number of things you need to consider.

The tank crews' ability to observe targets decreases the more they are forced to seal their hatches. Once the hatches are closed, the crews have only several vision blocks to see through. Their vision upward (toward the upper floors of buildings) is severely restricted, and they must rely on other vehicles, or on ground observers, to direct their fires.

In this situation, does your unit have an SOP with a simple, sure way of "talking" the rounds onto a target? What about at night? How is your supply of chemical lights? How do you mark vehicles for thermal identification? How do you prevent fratricide?

The standardization of procedures can come only through practice. Do you have an armor element supporting you in a habitual training relationship? Do you know the element commander's first name? Do you understand each other's techniques and needs?

What if you don't have a tank element to train with regularly? The best answer is that you treat your cooperation with tanks like a science instead of an art. Approach the problem methodically—read manuals, watch films, discuss it with your leaders, wargame it on sandtables with micro-armor, use blackboards, look up historical writings from World War II, Korea, and Vietnam, study drills from other units, request assistance from the Armor or Infantry Schools, visualize and discuss their use during urban combat training, study U.S. Marine Corps techniques, and use other vehicles in training as a substitute for tanks.

Synchronization and teamwork is where the art comes in. You'll develop into a combined arms team "artist" as you practice, practice, practice. But if you can't practice, do the next best thing—study the problem and master the principles and the theory.

History validates the need for infantry to be supported by tanks, especially when assaulting a strong enemy position. This requirement exists even if the terrain may appear to restrict the use of armor. Furthermore, even though there are no apparent transportation assets for deployment, planners should attempt to locate some and to deploy as many supporting tanks as possible—preferably a slice for each infantry battalion. The combined arms principle is—and has always been—the key to battlefield success.

Captain John J. Wintels, an Armor officer, is assigned to the Cavalry Branch, U.S. Army Armor School. He recently completed the Canadian Land Forces Command and Staff Course and has served as a platoon leader in the 1st Squadron, 9th Cavalry, and as a troop commander and squadron adjutant in the 1st Squadron, 1st Cavalry. He is a 1980 ROTC graduate of the University of Florida.

Captain Kris P. Thompson is also an Armor officer and assigned to the Cavalry Branch of the Armor School. He, too, recently completed the Canadian Land Forces Command and Staff Course. He previously commanded troops in the 11th Armored Cavalry Regiment and served as a scout platoon leader in the 2d Battalion, 137th Infantry, Kansas Army National Guard. He is a 1979 ROTC graduate of the University of Kansas, from which he also holds a law degree.

Effective Military Leadership

MAJOR GENERAL HERBERT J. McCHRYSTAL, JR., U.S. Army, Retired

Some people are effective leaders. Some are not. The personal characteristics that make the difference have been seriously considered since the beginning of time. Yet, to date, no one seems to have identified the leader formula with any assurance.

To me, a leader is a leader, regardless of the walk of life in which he operates. There are shades of difference, but the essential skills appear to be very similar.

When we talk about military leaders

we tend to think in terms of unit commanders, but many staff assignments also require a high degree of leadership. Commanding a unit is often easy compared to directing a staff section or an ad hoc activity.

There are certainly more experts on this subject than there are effective leaders, and I don't pretend to be either. But I have spent a lifetime watching leaders, both good and poor, while trying to decide what made them that way. One fact stands out. Good does not necessarily mean nice, nor poor, unpleasant. Some of the nicest people I knew were lousy leaders. The opposite is also true.

Identifying effective military leaders through hindsight is not particularly useful. The trick is to make that judgment before assigning responsibility. Nevertheless, hindsight does permit us to identify certain characteristics that effective leaders share. These characteristics are not all endowments from our maker. Many of them are developed. Six that I believe the leader has some control over are the following:

Be Yourself. You have a personality. Use it. If it's dull, you may want to work on dressing it up, but it's yours and, within the limits of what you may be able do with it, you are stuck with it.

You cannot be someone else successfully. Many have tried to cloak themselves in the mantle of some esteemed leader's personality, but the effort has almost never worked as expected. Following World War II, for example, mainly in the European Theater, a rash of Patton personalities emerged. The result was ludicrous. Patton could be Patton. That was his personality. But nobody else could. Those who tried were immediately identified and roundly ridiculed. Thus it will always be. This does not mean you cannot watch successful leaders or study what they do. Without reference to style, copy the methods that work and avoid those that fail.

You may be able to pass yourself off for a time using someone else's personality. But under stress, the act will fail and you will have failed those who were looking to you for the leadership your own personality promised.

Be Ambitious for Your Unit. Ambition is good—you might even say essential—if you are to be an effective leader. If you're not ambitious you had better avoid the leader role. Otherwise you can expect to be a total flop.

Many leaders try to use their organizations to further their personal careers. They emphasize the things that look good or that are momentarily popular at headquarters and exclude the things that make a unit fundamentally good. They try to steer clear of the tough tasks and avoid activities where their leadership or the basic soundness of their unit can be measured. They criticize publicly what they have inherited from their predecessors and spend more time and energy on public relations than on sincere unit development.

Be ambitious, but be ambitious for your organization. Have two objectives when you take over the leader role: The first is to leave a better organization than you found. You do this by stressing the basics and by never being fully satisfied with the level of performance achieved. The second is to make the organization the best of its kind—the best company, the best battalion, or the best staff section.

The payoff here is in reflected glory. If you command the best tank company in the division, everyone is going to assume you made it that way. Of course, you may hit one of those "once in a lifetime" situations where you are the beneficiary of a veritable whiz kid as an executive officer or deputy. But don't count on it. Senior officers are good at spotting "kept" leaders. If you hope to succeed, plan on being the motivating factor in creating a great outfit, one that will stand up to the challenges.

You Set the Priorities. Every organization worth its salt always has more to do than it can do, or at least do well. Moreover, every organization normally has a long list of "first" priority tasks—reenlistment, safety, training, maintenance. All of these will have first priority!

A commander or a staff operator often assigns "first priority" to an activity he does not expect to go well. This allows him to protest later: "But I made that first priority." Disgusting behavior, but not unusual.

Having too many first priority tasks poses a real problem for a conscientious leader. He knows perfectly well that all of those activities cannot reasonably receive first priority attention. Too often, the solution is to bluster and take the stand that "this unit can do anything," then proceed to drive the unit to distraction by striking out in all directions while praying that the shortcomings are not too apparent. That is "reactionship," not leadership.

Real leadership requires that *you* set the priorities for your organization. That does not mean that if your commander states clearly that training will be the first priority, you as a subordinate, should disagree and tell your people that safety will be first priority. That would be dumb! What it does mean is that when you face a situation, whether by design or oversight, in which your immediate organization has more high priority tasks than you know it can accomplish, you have to decide what priorities will be followed. You must make that determination on the basis of what you believe to be correct. Carrying this decision out requires moral courage.

You will make mistakes. The time will inevitably come when your judgment differs from that of the proponent of one of the first priority projects that did not make your list. There is nothing to do but stand up for the necessity of your decision. (You may want to keep lines to your maker open when faced with this eventuality. You will be amazed at the number of times he will support you.)

Be Demanding in a Reasonable Way. Any idiot can be demanding, and many are. The art of leadership is to establish standards that you can seriously expect your organization to meet. This involves establishing both what you want and the end result that you expect. (This should not be confused with telling others "how to do it.") If you do not make your standards clear and unequivocal, you will get the minimum performance your subordinates think you will accept. It may not be obvious at first, but they will quickly move in that direction.

Whenever it is possible, and it usually is, explain the reasons for your standards. This explanation will help your subordi-

nates support you. There are cases, however, in which your standards may appear to be arbitrary or harassing. If you are convinced of the standard's value to the organization, insist on it even if it is not generally considered useful. If you are right, its usefulness will become apparent. If you are wrong, that will also become apparent, and you can reevaluate your position. Nowhere is it written that an effective leader has to be infallible.

When I required my battalion in Vietnam to wear steel helmets, for instance, there was a great deal of comment, much of it unfavorable. But one day, while the battalion was conducting an operation in heavy jungle, a single shot rang out from the flank. The S-3 radio operator did the combat load equivalent of a back flip, his helmet flying about ten yards away. The medic examined him for a wound, but found none. About that time the operations sergeant came over with the helmet, which had a fist-sized dent in one side, but no hole. (The radio operator did have a headache for a day or two.) The comments about wearing steel helmets ceased.

Be Courteous and Considerate. Contrary to the usual Hollywood portrayal of a leader, you do not have to shout to get results. In fact, if you shout all the time, your people will become accustomed to it and accept it as routine. If you customarily shout at the bearers of bad news, soon you will not hear the bad news until it is too late. Many a leader has gone down with bugles blowing and banners flying because people were afraid to risk telling him the unpleasant facts.

Similarly, foul-mouthed language is no substitute for clear, precise English. Within the military establishment, the language is usually foul enough without the leader contributing to it. Knowing some of the words and having healthy vocal cords may indeed be useful on some occasions, but for maximum effect those occasions should be rare.

People perform their best when they feel that their efforts are appreciated. People do make mistakes, though—sometimes even careless or dumb mistakes. Those mistakes have to be faced, pointed out, and corrected. That is what leadership is all about. But people do not have to be degraded in the process. If you degrade your people you are the loser, because they will simply not perform to the best of their capabilities.

Be Morally Courageous. *Physical* courage is believed to be the stuff good soldiers are made of, and that is true, to a point. Soldiers must have enough physical courage to face the known and unknown dangers of the battlefield. Most do. Even those who do not can usually be brought along by good leadership and example. The leader must, of course, have enough physical courage to be able to operate in the combat environment. That is usually easier for the leader because he has a lot on his mind and little time to be afraid.

What is much more rare is *moral* courage. Moral courage is having what it takes to do what you believe is right—or, more pertinent to the military leader, being able to adopt a course of action and carry it through without concern for the effect the outcome may have on you personally. This is precisely where most people fail in effective military leadership.

Many military decisions are made with an eye more to the way failure will affect the career of the leader than to the result to be achieved. It is entirely possible to be a successful leader without ever being called upon to make a really risky decision. But it is not possible to be an effective leader while habitually shading decisions toward the safe side. What you wind up with is the lowest common denominator of successful performance, because that is what you are programming. It may be successful to the extent that it avoids failure. But it is dull, uninspired, and far from the *effective* leadership we seek. And the missing ingredient is moral courage.

Combat decisions, at least those at division level and below, are risky by nature. The effective combat leader, much like the entrepreneur in business, is the guy who is capable of making a decision of that kind and living with its consequences. It is a quality much rarer than you might think. An effective combat leader is more likely to be a man of high moral courage rather than one of great physical courage.

Most leaders can figure out what should be done, but a really effective leader has the moral courage to carry on, even when he realizes he is assuming a high degree of risk. That is precisely the breakpoint. The ineffective leader cannot accept the risk. He seeks a more assured course, one that will yield a guaranteed, if smaller, success. Regrettably, too many of our leaders are the "guaranteed success" types.

Even if you're blessed with the six characteristics I have outlined, you still may not be an outstanding leader. These are only part of the story. After all, Alexander, Napoleon, and Custer did not necessarily do it my way. And if you fall into their category you certainly don't need me to tell you about leadership. But if you want to become a better leader, you should consider working to make these characteristics your own. Constantly critique your own performance to see where you have fallen short. When faced with a situation, review these items and see if you can proceed in that direction.

Of these six attributes, the most important is the moral courage a leader is prepared to bring to the task. Moral courage is the heart of leadership, and it can be developed. Think about it. If you cannot call the tough ones the way they should be called, you should not be leading.

The next most important is to be yourself. It may take a lot of courage to lead and be yourself, but do it anyway. If you are not succeeding, that may tell you something about your personality. But personalities can also be developed or adjusted.

Finally, it is flattering to be a leader, but being flattered by it is different from being comfortable with it. If you find you are not comfortable with the leader role or with the responsibility it requires of you, try something else, and let others do the leading.

Major General Herbert J. McChrystal, Jr., served in various command and staff positions before his retirement in 1974. During his service he commanded units in combat from company through brigade, as well as serving as a division chief of staff. He is a 1945 graduate of the United States Military Academy.

The Company Command Team

LIEUTENANT COLONEL COLE C. KINGSEED

As a new company commander, like many others before you, you will soon discover that the unit first sergeant is indispensable to you in your efforts to build a combat ready force. Not only will he be the primary conduit through which you will spell out your policies, he will also be the one who enforces standards of discipline and conduct throughout the command.

With the ceremonial assumption of command, symbolized by the acceptance of the guidon, the first sergeant transfers his loyalty from your predecessor to you. You are now his commander, and one of his primary responsibilities as a professional soldier will be to see that you have a successful command.

But you can also expect him to have a vested interest in preserving the status quo—until you direct otherwise. After all, since he helped build the company into the unit the former commander wanted, you can logically assume that he was not totally opposed to that commander's policies. It is therefore essential that the two of you establish a clear channel of communication at the earliest opportunity.

First, to set the tone of the new command relationship in your company, you will probably find it a good idea to talk to the first sergeant immediately after assuming command. This talk must cover at least two general topics—your command philosophy and your concept of the first sergeant's role. Until the two of you have an understanding on both, you will wander aimlessly and accomplish little.

A command philosophy is just as important at company level as it is at battalion. Unfortunately, though, while the Army does a good job of teaching battalion command designees the importance of developing a command philosophy, it offers no such training for company command designees.

You will make the first sergeant's job a lot easier if you take the time to outline your vision of where you want the company to be six months, a year, and

18 months from now. Normally, he will want to support you, and if he understands what you want, he will be able to deliver from the beginning.

Do not let this conversation be one-sided. Two-way communication always leads to better results. In most cases, the first sergeant is a veteran of nearly 15 years of service and knows the company fairly well. He can describe the command's current strengths and weaknesses. You might ask him, for example, what five things he would do differently to improve the company's readiness, and what he knows about the company that he feels you should know immediately. Once you have this information, you will have established a common foundation on which both of you as a team can lead the company toward the fulfillment of your vision.

Equally important, the first sergeant must understand what you expect his role to be. As a professional soldier, he will make any adjustments you want, but you have an obligation to tell him precisely how you want him to conduct business. Don't wait until he has to ask.

When I became a battalion commander, for example, I spoke to the first sergeants immediately after meeting the command sergeant major, gave them my written guidance, and outlined my expectations. A company commander can do this just as easily at his level, and this written guidance then becomes an integral part of his future performance counseling of the first sergeant. It should outline both general and specific duties, responsibilities, and authority.

The first sergeant's general duties are easy. As the senior noncommissioned officer, he sets a leadership example and serves as an inspiration to the company, including the officers, NCOs, and soldiers. He also sets the example and enforces standards of conduct, military courtesy, and uniform policies. He participates in physical training and ensures that every aspect of it is either performed correctly or corrected on the spot. Even though the first sergeant probably already knows what these duties are, he will still appreciate hearing them from you.

A first sergeant's specific duties vary with his commander. In my initial dis-

cussion with the battalion's first sergeants, I outlined several areas that I wanted emphasized. Each of these areas had several sub-categories that I also outlined in writing. These same areas may be useful to you.

Reception and Integration. The first sergeant can establish a program for accepting new soldiers into the command with the intent of making every incoming soldier and his family feel that they play an important role in the company from the start. The assignment of sponsors, the resolution of immediate problems, and assistance in finding places to live (if applicable) all fall within this category.

Company Training. In planning and conducting company training, the first sergeant will be your principal advisor on any training deficiencies and will organize remedial training. He should be the most knowledgeable NCO in the company on tactical operations and the expert in incorporating individual tasks to support the collective training outlined in the company mission essential task list.

Hold him responsible for supervising skill qualification tests (SQTs) and common task tests (CTTs), and make him the primary instructor for NCO professional development (NCOPD). Leader development must be a command priority. Have him develop a *program*, not just a series of classes. Tie NCOPD to upcoming company missions, and use him extensively in developing the unit training plan. A strong command team can make training interesting as well as challenging.

Accountability and Responsibility. This area of emphasis may be a bit more controversial and may vary, depending on your perspective. As the commander, you are ultimately responsible for property accountability, but you may want to hold the first sergeant personally responsible for the operation of the company supply room. Since the efficient operation of the supply room is directly linked to soldier morale, it is reasonable for the first sergeant to be involved in it. At least, direct him to conduct periodic inspections of the supply room and CTA 50 equipment. In addition, he should set the example for the soldiers by maintaining property accountability in the orderly room.

Counseling. Since counseling is the key to junior leadership development, the first sergeant must train the platoon sergeants to use proper counseling techniques. He should inspect the unit counseling files periodically to ensure that the written forms are legible, that they are signed by the counselor and the soldier, and that they are being prepared on time. He should also make sure the counseling is based on good hard facts instead of being too general to be of any use.

Company Administration. The first sergeant's duties in this area include accurate status reporting, advising you on assigning new NCOs and soldiers, monitoring enlisted evaluation reports, awards, nonjudicial punishment, and many other tasks. You might mention any specific areas you want him to concentrate on. Meticulously outlining the aspects of company administration will be as useful to you as to him.

Barracks Maintenance and Inspections. You should hold the first sergeant personally responsible for supervising barracks maintenance and conducting inspections. Does the company have a good repair and utility program? Are work orders submitted in a timely manner? What are the results? Are the soldiers inspected daily? (Just as things get done that a commander checks, so do things the first sergeant checks.) Make sure he also teaches the platoon sergeants and squad leaders how to inspect.

Company Headquarters. The first sergeant is also the principal supervisor of the company headquarters. Although some commanders delegate this responsibility to the executive officer, I believe the first sergeant is better suited to the task. I suggest you hold him responsible for the supply room, the NBC room, the communications room, and the arms room.

In the Field. In a tactical environment, he can certainly help in supply functions and mess operations, but his true value lies elsewhere: Take advantage of all the experience he has had in his years of service, and have him assist and advise you on the tactical employment of the company. He can ensure that the weapons are cleaned daily in the field and that the equipment is serviceable. You should also hold him personally responsible for the appearance of uniforms in the field.

In the process of discussing his duties and responsibilities, you may also want to discuss what you think his relationship with the command sergeant major should be. Just as the first sergeant should train the platoon sergeants to take over his job, the battalion command sergeant major should teach the first sergeants the responsibilities of his job. Consequently, you should foster a good working relationship between your first sergeant and the command sergeant major; you should certainly not try to hinder it.

Finally, in that initial conversation, you may want to ask him what he expects from you as his commander. Although he will probably not say much at this time, if you extend him the professional courtesy of asking, he will feel free to offer friendly recommendations and suggestions as time passes. Right now, he probably just wants to make sure he understands your expectations; as a professional soldier, he will take it from there.

In summary, the first sergeant will make or break the soldiers in your command. Everything from morals to morale, from ethical conduct to tactical proficiency, is squarely on his shoulders. He wants to make you successful, because the company is not just your unit; it is also his. More important, it is the soldiers' unit, and they will probably be there long after you have relinquished command.

By clearly enunciating your command philosophy and outlining the duties you expect the first sergeant to perform, you will be well on your way to developing a strong command team and a unit that is proficient in its combat skills and can wage war successfully if the need arises.

Lieutenant Colonel Cole C. Kingseed previously commanded the 4th Battalion, 87th Infantry, 25th Infantry Division, and is now assigned to the Office of the Deputy Chief of Staff for Operations, Department of the Army. He is a 1971 ROTC graduate of the University of Dayton and holds a doctorate from Ohio State University.

ARMY MOUNT FOR THE 21st CENTURY

LIEUTENANT COLONEL THOMAS R. ROZMAN
LIEUTENANT COLONEL EDWARD E. BLANKENHAGEN

U.S. dragoon moves alongside column of infantry, 1847.

role. These dragoons tended to be lighter than the heavy mounted units yet heavier and less flexible than the light units. They enabled the commander to take advantage of situations that required a highly mobile infantry but one that he could also use to augment his cavalry.

Although the infantry requirement to accompany tank forces was not yet an issue, the concept of mounted foot soldiers was established. Essentially, more than two centuries before the development of mechanically mounted infantry, a precedent had been established to design mounted infantry units that were lighter than the heavies (*cuirassiers*) yet heavier than the lights.

When the technology of massive firepower became dominant, the commander no longer had the mobility the horse had provided. The mounted infantry role was now to complement armor as part of a combined maneuver team.

An infantry force that could keep up with the tanks and not be destroyed by anything other than the main guns of opposing tanks or direct hits from artillery met this new mounted infantry requirement. Infantry, thus configured, could sustain the momentum of an attack when obstacles or the terrain restricted the tanks' forward movement. The infantry's dismounted assault capability, together with the tank and infantry carrier overwatching and furnishing suppressive fires all the while closely supported by mobile mortars and self-propelled artillery support, offered the best combat organization for forcing penetrations. And then, when the combined mounted force had to pause, the infantry could establish security and prepare defenses.

During World War II, because of the armor force's need for infantry, the carrier's role as a means of allowing infantry to move with armor matured substantially. The tanks were vulnerable in restrictive, broken terrain, and in this environment steady enemy infantry units equipped with an effective antitank weapon often proved deadly to the tanks. (This vulnerability was revalidated in 1956 in Budapest and especially in the 1973 Arab-Israeli War.)

From the 1940s to the 1970s, most armies developed similar responses to their mounted infantry's mobility needs. The general response was a lighter and less expensive vehicle than the tank. Also, trends developed that further specialized the infantry into two branches—one that was oriented toward the heavy force and another that was more of a medium or motorized (wheeled) force. (In this article we focus on the heavy infantry and save discussion of the medium infantry for a later article.)

In fact, by the 1980s, the U.S. Army had developed a doctrine in which the lightness and agility of the infantry carrier were considered component parts of its protection. By using movement techniques properly and by making the most effective use of the terrain, junior commanders could deny the enemy the opportunity to engage their vehicles with his heavier direct fire weapons.

Although this was a reasonable approach, other factors began to intrude upon it. The wire-guided missile, for example, offered a major technological breakthrough for the infantry in the antiarmor battle, and the missile system replaced large-bore cannons for the infantry. Thus, the tank was left as the only direct fire cannon in the maneuver force for ranges under 2,000 meters. Unfortunately, though, tanks were not always present. As infantry carriers worked their way forward and were confronted with field fortifications or well-sited tanks, their light protection and agility did not adequately preserve the vital infantrymen inside them.

Increasingly, tanks became the "roadsters" of the tactical set, often leaving the "smaller" infantry vehicles in the dust across the "occasional" open areas and uncomfortably vulnerable to the enemy's direct fire. Although the smaller infantry vehicles could approach the speed of the heavier ones, their passengers tended to suffer in the process.

Small, light carriers with nothing more than suppressive fire weapons were not the answer. In an attempt to solve the problem, the developers piled increasingly lethal and sophisticated weapon systems onto an increasingly larger frame and paid more attention to protection.

Thus the infantry's mount grew from a lightly armored carrier into a warhorse. In this process, however, demands to continue seeking small size and light weight, along with increased efforts to protect and make the horse lethal (not to mention trying to make it swim), squeezed the infantryman off the saddle. In fact, in the United States where computer modeled analysis became a primary method of supporting decisions on scarce resources, even the role of the infantry in "mechanized infantry" (the U.S. term for this ancient arm) became increasingly subordinate to the improvement in lethal firepower. Theoretically, the weapon systems, when employed at a long range from static or delay positions, were considered superior to tank guns in killing tanks. Such theoretical capabili-

ties, of course, also made the infantry's new mount a priority target.

Like the 19th Century dragoon, the modern dragoon finds himself evolving into something that is not quite mounted infantry. It is interesting to note that the effort at sustaining a hybrid arm with proficient infantry and effective tactical mobility characteristics proved so difficult in the last century that the British establishment, by 1816, had converted all of its dragoons and light dragoons to heavy cavalry, hussars, or lancers. Their infantry function had died, and they had become cavalry.

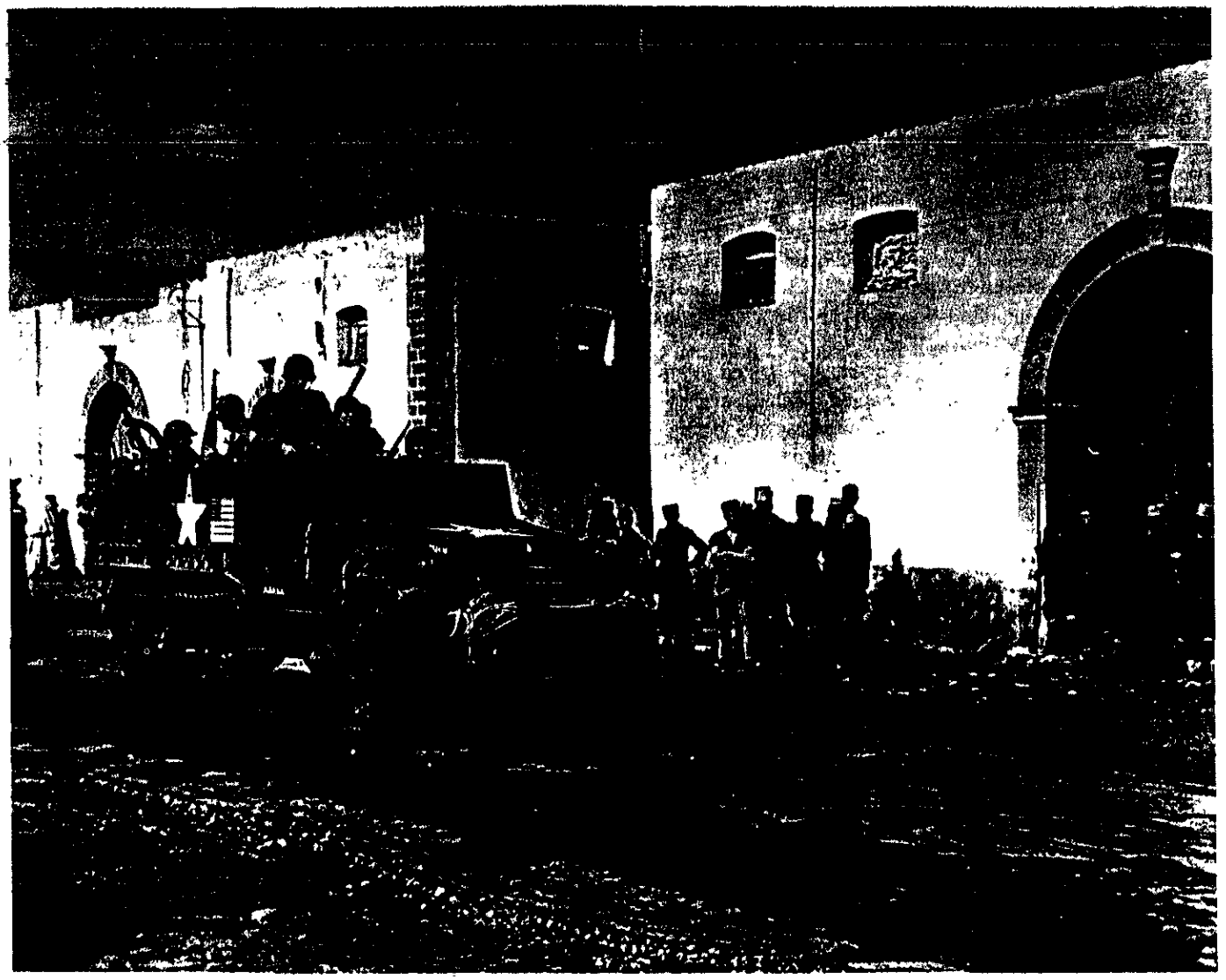
With what we understand of the lethal delivery capabilities of the primary European threat, we begin to question the "light and agile" concept. An analysis of the other possible battlefields for heavy operations (such as Southwest Asia, for example) further reinforces this question of whether a light, agile vehicle is the best way to project the infantry capability into the combined arms heavy team.

When further viewed in terms of large vehicle frames to support more armor, and vehicles with far more powerful drive trains and superior suspension systems (resulting in an improvement in cross-country mobility and survivability), the idea forms that perhaps the vehicle ought to be "tough, hard, and agile." This observation is underscored by the evolving ALB-F concept of a non-linear battlefield and the need for a heavy infantry force that embodies these characteristics. This suggests that the heavy infantry's vehicle needs to be larger and more protected. There are simply too many terrain configurations that inhibit rapid movement or expose the vehicle to the enemy's visual or electronic acquisition.

The Israelis, for example—in both the 1973 war and the war in Lebanon—found that their light carriers were quite vulnerable, even when they used terrain and speed to augment the vehicles' protection.

Is it valid, then, to conclude that we need a heavier and more protected system that insures us the ability to project tough infantry with the heavy force? We found some possible answers during an interview with an Israeli heavy force combat commander concerning light versus heavy carriers for infantry units.

He was an armor officer named Agmon, a colonel at the time, and had served as a combined arms commander at com-



U.S. armored infantry unit, North Africa, November 1942.

pany and battalion level in several high intensity conflicts.

Colonel Agmon considered infantry absolutely essential to success in mounted operations, and said that infantry units must therefore be able to operate with the assault elements of the heavy force. He said that heavy combined arms forces, where successfully employed, had been the main building blocks of success.

During our interview with him, Colonel Agmon made several specific observations:

- He said that infantry forces must be in place and responsive. That means they must be able to keep up with the tanks and survive the same fire attacks.
- He expressed concern at the extensive armament found on the new generation of infantry vehicles. In his view it would be enough to mount a heavy machinegun on the infantry system, and possibly an automatic grenade launcher as well, to support suppression requirements, depending on the organic tanks to provide heavier overwatch and destructive fires. (Colonel Agmon's concept of a battalion heavy mounted force visualizes tanks and mounted infantry organic to the force. Our own views are that a heavy infantry system should have an effective suppression weapon, probably an automatic cannon, that is capable of neutralizing crew-served weapons in hardened positions. We also consider some form of medium antiarmor system necessary to support infantry defense, among other missions. But this system should not compete with the infantrymen for space or with the vehicle's functional design.)
- His ideal infantry vehicle would have the same essential protection and tactical mobility as the tank. When asked for an example, Colonel Agmon pointed to a picture of the Israeli Merkava and said that, minus the turret and with a squad compartment built for "12 to 15 infantrymen," this could be his ideal infantry carrier. (Our view is that this "carrier only" orientation is too restrictive to meet the need for heavy infantry flexibility.)
- Colonel Agmon stressed that his ideal mounted infantry would have not only the protection and tactical mobility of a carrier such as the Merkava but also the esprit and tactical skill of the elite infantry. He said that at the point of battle the mounted force needs such excellence. (We fully concur with the idea of a tough, aggressive infantry that is organic to the heavy force.)
- He strongly supported a vehicle of 35 to 45 tons for the mounted infantry. He pointed out that commanders initially tried to use the M113 in the assault role but that the vehicle proved inadequate for that purpose. Currently, the approach is to use the M113 in a role more along the lines of a combat bus and definitely not for assault. This restriction on employment considerably compromises a commander, because his efforts to keep his combined infantry-armor force together and responsive to each other are less effective. (We generally concur with the idea of a system that is capable of keeping the heavy infantry teamed with the armor—compatible in speed, survivability, and agility.)

As in the past, we may again see the mounted infantry evolve into something else, although in modern guise. Too much concentration on the weapon systems, though, and too little on the heavy infantryman and his role in the heavy force, may create a heavy vehicle that is designed primarily to augment the tank, not to project infantry capability with the ALB-F heavy force.

Historical precedent underscores this concern because of the consistency with which armies over the centuries have thought of their mounted infantry in terms of lightness and, to varying degrees, agility, and then have let it evolve into something else—typically some form of heavy or light cavalry. Critically, a question comes to mind: If the modern heavy infantry is to continue providing an infantry capability for the mounted force, what kind of mount must it have to assure that capability?

Clearly, the lethality that a Soviet-style army, or any competent high intensity heavy force, is capable of projecting shows that the previous levels of protection in carriers have been ineffective. Recent combat experiences of modern armies in heavy mounted warfare appear to validate that conclusion, and the emerging requirements of the non-linear ALB-F battlefield further emphasize this point.

Perhaps the time has come to accept that if we are to sustain a heavy infantry arm and realistically project it into the future, we must develop a carrier that is still agile but heavier and more protected than what we have now.

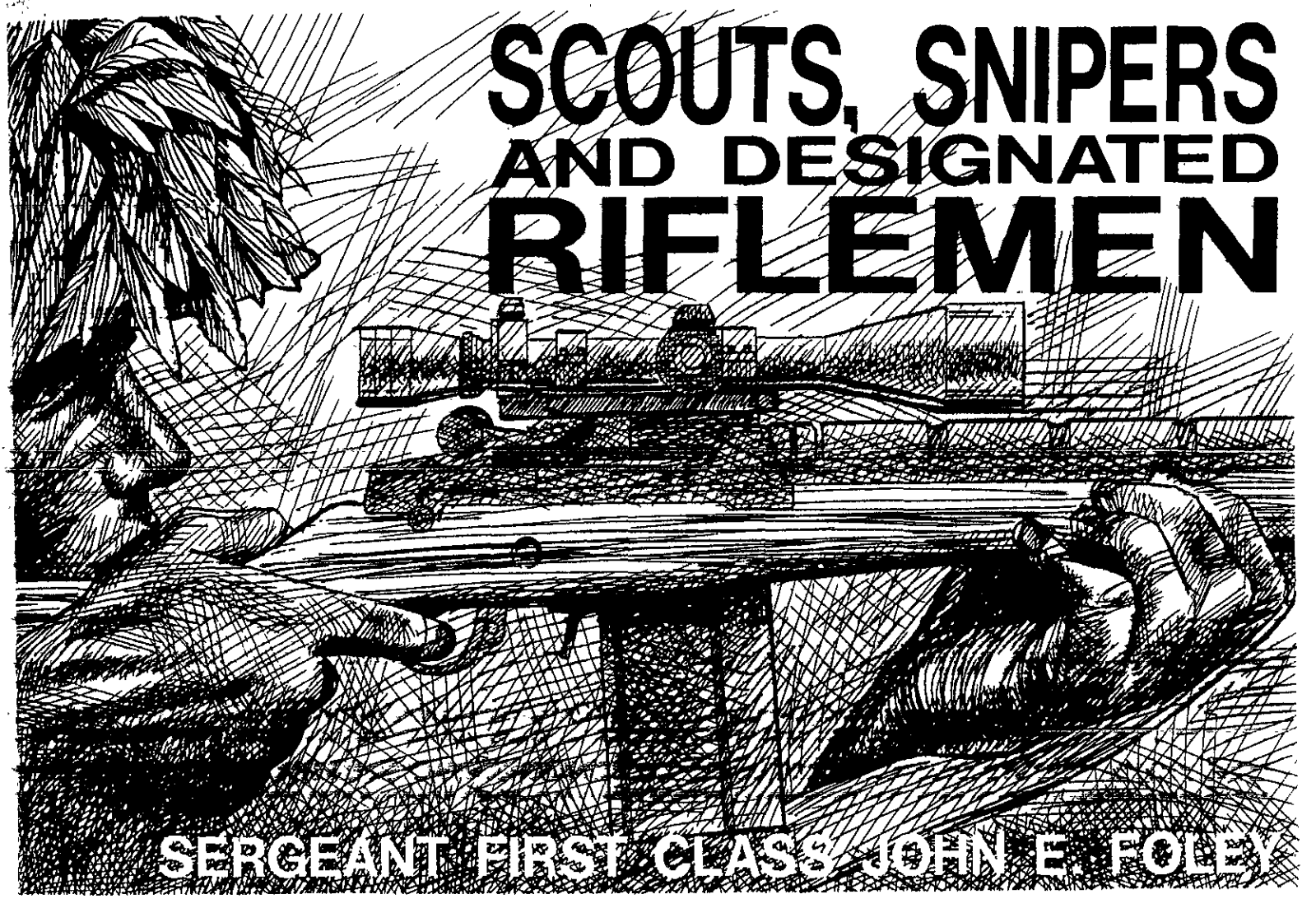
This suggests a trade-off of a swimming capability for a deep fording capability. (Technologically, with the increase in weight, a swimming requirement is probably not realistic.) It also seems appropriate to consider that by using the terrain to reinforce the vehicle's protection and augmenting this technique by making a vehicle as agile as possible, we may find that a heavier vehicle is not necessarily inconsistent with this approach. If anything, it will increase the vehicle's effectiveness.

The only trade-offs are potential limitations for bridge and river crossings that in Europe may prove manageable with deep fording and improved bridging capabilities. This view becomes more relevant when considered against heavy infantry employment on battlefields elsewhere, as is being suggested by ALB-F, where a river crossing capability would not be as critical.

A future heavy force will need a strong infantry capability, and we must look for ways to assure that capability. Our best indications of the future tell us that protection will be the key to effectively integrating infantry into the heavy force. Thus, it does not seem unreasonable to assume that our future heavy infantry vehicle should have the same, or equivalent, mobility and protection characteristics as the tank.

Lieutenant Colonel Thomas R. Rozman formerly served with the Army's Armored Family of Vehicles Task Force and in various mechanized infantry assignments. He is now assigned to the Office of the Deputy Chief of Staff for Training, U.S. Army Training and Doctrine Command. He is a 1970 graduate of the United States Military Academy and holds a master's degree from the University of Massachusetts. Several of his articles have appeared in INFANTRY.

Lieutenant Colonel Edward E. Blankenhagen is a U.S. Army Reserve Advisor to the U.S. Army Training Support Center at Fort Eustis. A 1969 ROTC graduate of Kansas State University, he holds a master's degree from the University of Mississippi and is now pursuing a doctorate at George Washington University.



SCOUTS, SNIPERS AND DESIGNATED RIFLEMEN

SERGEANT FIRST CLASS JOHN E. FOLEY

Marksmanship seems to have been rediscovered in the Army in recent years, and we certainly need for our soldiers to be proficient with their rifles. But we also need some soldiers who surpass the marksmanship standard—who, by inclination, training, and desire, gain an uncommon mastery of the rifle—to serve as scouts, snipers, and designated riflemen.

A scout must be an expert rifleman, but one who uses the utmost discretion in firing his weapon. His primary concern is reconnaissance, and if he fires at an inopportune time, he fails in his mission. At the same time, if he fails to fire or cannot bring rapid effective fire on the enemy, he may be captured or killed.

A sniper also wants to remain unseen and he, too, uses discretion in firing his weapon. The primary difference between him and the scout is that the sniper goes out to kill the enemy, deliberately and selectively. "One shot, one kill" is his motto, goal, and philosophy. He and his observer work as a team.

A designated rifleman, although not officially recognized by the Army, has been an unofficial member of the infantry squad for a long time. (According to the NCOs who trained me, every squad had one or more during the Korean and Vietnam wars.) He is an individual soldier who is known to have great skill with his assigned weapon, either alone or coached by an observer with a spotting scope or binoculars. He can be of any rank in the squad, so long as he can place precision rifle fire on a target.

These three soldiers share similar skills. Expert fieldcraft is essential for scouts and snipers and important for the designated rifleman. All three must have high personal standards of marksmanship and initiative. All three must have exceptional self-discipline and patience. In addition, the designated rifleman must understand the mission, the commander's intent, and the rules of engagement, so that he can take decisive action or respond instantly to orders. (The scout and the sniper will probably not have anyone to tell them what to do.)

Their training is basically the same as the training for all infantrymen, but the following areas are of particular importance to them:

Marksmanship. A sniper must be skilled in advanced marksmanship techniques, and a scout must be able to react quickly and accurately to chance contact. A designated rifleman must train constantly to make every shot count and to do his job with the least amount of ammunition. (It is unrealistic, however, for him to try for one-shot kills, especially on bunkers.)

Camouflage. A sniper must know how to remain undetected

until he has made his shot and can escape. A designated rifleman and a scout must be able not only to camouflage their positions but also to recognize camouflaged enemy soldiers and emplacements.

Movement. A scout has to learn to move quietly and to leave as little sign of his passing as possible, and it is healthy for a sniper to do likewise. A designated rifleman must quickly determine, and move by, a covered and concealed route to a position from which he can best help his unit accomplish its mission.

Tactics and Order of Battle. A scout can relay information better if he knows what he is seeing. Studying the enemy's tactics and order of battle enables him to place priorities on targets for the snipers and for artillery and air support. A sniper can use this knowledge to find and kill lucrative targets, and a designated rifleman can use it to look for and kill leaders, in both the offense and the defense.

Communications. A scout must be able to get accurate information through at any cost, and the same applies to the sniper in his secondary mission of scouting. A sniper must also be able to communicate in case he runs into trouble, and a designated rifleman must be able to communicate to his chain of command what he sees through his binoculars or scope.

Weapon, Vehicle, and Aircraft Identification. A scout must have accurate information, and a sniper must also be highly proficient in this task so he will know where to look for leaders or key personnel. A sniper must also know the weak points on weapons, vehicles, and aircraft so he can destroy them. Disabling a truck or radar with rifle fire to give aircraft or artillery a sitting target may be more effective than just shooting a few senior officers. To a lesser extent, this also applies to the designated rifleman.

Mines and Booby Traps. A scout and a sniper must be vigilant in looking for mines and booby traps, not only for self-preservation but for the good of the mission. Both must also be expert at setting and concealing mines and booby traps to provide early warning or to cover a withdrawal.

Fire Support. Scouts and snipers must master the skills of forward observers in directing both aircraft and artillery, because they are employed separately from their parent organizations and rarely have a fire support team available. Both can often be in a position to direct effective fires on an enemy force. Snipers also have the means to pin down an element or delay and disrupt its efforts to disperse. By disabling the lead vehicle in a convoy at a choke point, for example, a sniper can provide a lucrative target for air support or artillery. While these same skills are nice for the designated rifleman to have, they are not critical, because he normally operates within squads and platoons that have fire support teams available.

There is one difficulty with the training of scouts and snipers: Snipers, under current doctrine (Training Circular 23-14), are provided by the scout platoon in an infantry battalion. Unfortunately, though, the scout platoon is not given any additional men.

It would be far more effective to beef up the scout platoon with a separate sniper section of seven or eight men. It is true that both the scout and the sniper need to be expert shots and experts at fieldcraft, but I believe that the one significant dif-

ference between them will create a problem: A scout is trained to observe, while a sniper is trained to kill enemy targets.

A scout must remain inconspicuous and fire only in self-defense or during selected missions—such as counter-reconnaissance or when screening the flank of a unit—to slow an enemy and gain time for that unit. When he must fire, he must be skillful at firing quickly and accurately on single or multiple close-in targets.

A sniper, on the other hand, must be trained and motivated to kill with his rifle. He must be dedicated to an uncompromising standard of selecting targets amd firing on them accurately at long range.

I believe the current plan will create a hybrid "scout-sniper" who has grave psychological problems: If we tell a man in the morning to remain undetected at all costs and in the afternoon to concentrate on shooting somebody, we run the risk of ending up with a scout who fires when he shouldn't and a sniper who doesn't fire when he should.

SNIPER WEAPONS

When it comes to weapons for the scout, the sniper, and the designated rifleman, several are suitable.

The M21 sniper system—an accurized M14 with the selector lever removed and fixed to operate on semi-automatic—is still with us. Although it is capable of excellent accuracy, it has been criticized for its loss of zero with the scope removed. The men in my company, after some training with the company's M21, soon found, however, that they could hit type "E" silhouette targets at 800 meters with iron sights or with the ART II scope.

The new M24 sniper system is a much-modified version of the commercial Remington Model 700 sport rifle. The M24 boasts a synthetic stock and a 10-power scope, and its caliber can be changed from 7.62mm to .300 magnum. It is a superb weapon for making selective, deliberate kills at 1,000 meters or more. Its maximum effective range depends on the caliber chosen and the skill of the sniper.

This system does have weaknesses, though, the most glaring of which is its lack of firepower. The rounds must be loaded singly into the magazine, and this can be ticklish under some conditions. In addition, the iron sights are separate from the rifle and therefore easily lost, broken, or left behind.

If a sniper is working alone, the rifle's lack of a magazine capacity will be a serious problem in some situations. Fortunately, though, he usually has a partner who is carrying the M16A2, and this is one of the most accurate semi-automatic small arms in existence.

Firing with my company at a Marine Corps known distance range with an M16A2 fitted with a Leuopold 4-power compact scope and using M885 ammunition, I found I could keep 10 shots in a three-inch circle at 300 meters and do it consistently.

The point is that a service rifle fitted with an optical sight and fired on semi-automatic that will put 10 shots into a circle three inches in diameter at 300 meters is accurate enough for sniping.

Working with an observer, a sniper can use the M24 to kill leaders (or anyone with initiative) while the observer keeps pesky individuals or small groups from flanking him or rushing across a choke point. This will enable the sniper to make a large number of kills in a short time and then disappear. (This is not my idea but a tactic used by a Marine Corps gunnery sergeant in Vietnam. He would pick off leaders and radio telephone operators with a Remington 700 bolt-action rifle at close range—300 to 400 meters—while his observer used an

M24 SNIPER WEAPON SYSTEM (SWS)

M14 to provide other fire as necessary.)

The M21 with a good zero on the scope is no slouch either. Ranger snipers in Grenada made kills on 120mm mortar crews at ranges of more than 1,000 meters. While not in the same league, the sniper team in my company (with a MILES laser device on the M21), overwatching a critical bridge 300 meters from its position during our battalion's external evaluation, engaged and destroyed an opposing force (OPFOR) infantry platoon with a combination of sniper rifle fire and mortar fire. The platoon, unable to move because of the sniper, was an easy target for the battalion's 81mm mortars. And despite the M21's loud report with blanks, the OPFOR platoon was not able to locate the sniper position a mere 300 meters away and bring effective fire onto it. The OPFOR soldiers later said they were surprised that a sniper system had been used against them.

While these stories provide food for thought and demonstrate that a sniper team will be well served with either an M24 or an M21, there is also another weapon that is suitable for sniping—the Barrett "Light Fifty"—a .50 caliber shoulder-fired semi-automatic sniper rifle that weighs 32.5 pounds and is usually fired from a bipod. Firing this weapon offhand, I have easily put two shots into a large target (8 feet high, 10 feet wide) at 1,300 meters.

The recoil was pleasant, thanks to its short recoil system, not as bad as firing an M1200 12-gauge riot gun with slugs. For those soldiers who can handle it, though, new dimensions of sniping are possible—defeating light to medium cover at long range, for example, or securing long stretches of open terrain, such as airfields. In mountainous terrain, bunkers that would be impervious to almost anything would be nothing but targets for .50 caliber armor-piercing incendiary rounds.

The Barrett's ammunition is fed by 11-round magazines, and there is no getting around the fact that .50 caliber ammunition is heavy. Still, the gains can be worth the cost. The weapon and ammunition can be broken down into several man-pack loads, and a soldier can move a weapon this light just about anywhere he wants it. This does not mean we should all run out and use the .50 caliber for everything. But this is a special weapon with great potential, and we should not ignore it.

Another weapon associated with sniping is the M9 9mm automatic pistol, which gives a sniper a fast-handling close-in personal defense weapon. It would be more useful to a sniper if a sound suppressor were added to it. A sniper could use it to break out of an encirclement, for example, or deal with somebody who stumbled onto him. A knife is quiet, too, but a sniper may get shot trying to use it. I, for one, would be far happier shooting an unsuspecting soldier in the back from 25 meters than risk being shot at three meters while playing "Rambo."

For scouts, who also need to remain discreet and quietly kill an enemy if necessary, a Colt 9mm submachinegun with suppressor might be better. Since scouts move more than snipers do, they need a weapon with more immediately available range and firepower than a pistol will provide, and it is very accurate. Another advantage is that its silhouette is not significantly different from that of the M16A2, and its operation and maintenance are almost identical.

A disadvantage is that it would reduce the squad's long-range firepower, since one man would be carrying the machinegun instead of a rifle. The squad's short range firepower would not be significantly hindered, though, and the silencer would be invaluable.

A designated rifleman, unlike the scouts and snipers, has to be proficient in shooting quickly and accurately at close range as a member of his squad or platoon, or of placing precision fire on a target at long range. To do this, he does not need any unusual weapons. His issue M16A2 will suffice.

What he does need, though, to make him more efficient and versatile is a small, rugged, optical sight for the rifle. Although a scope will not make him a better shot or make the weapon any more accurate, it will allow him to place his aiming point more precisely on a target. With a properly zeroed optical device mounted on his M16A2, he should be able to hit a target as small as a man's head at 300 or 400 meters. He should also be able to find and suppress bunker apertures at ranges that would make them invisible to the naked eye.

In low-intensity conflicts, combat in cities, or even mid- to high-intensity conflicts, if we could make it unsafe for a tank commander to stick his head up, we could then force him to "button up." The enemy would be afraid to look around a corner in cities, and guerrillas would never know (until it was too late) that their stream crossing site was under observation.

Despite our increasingly technical world, it is the man with the rifle who still settles most of today's conflicts. Technology does us no good if we cannot kill or capture the enemy.

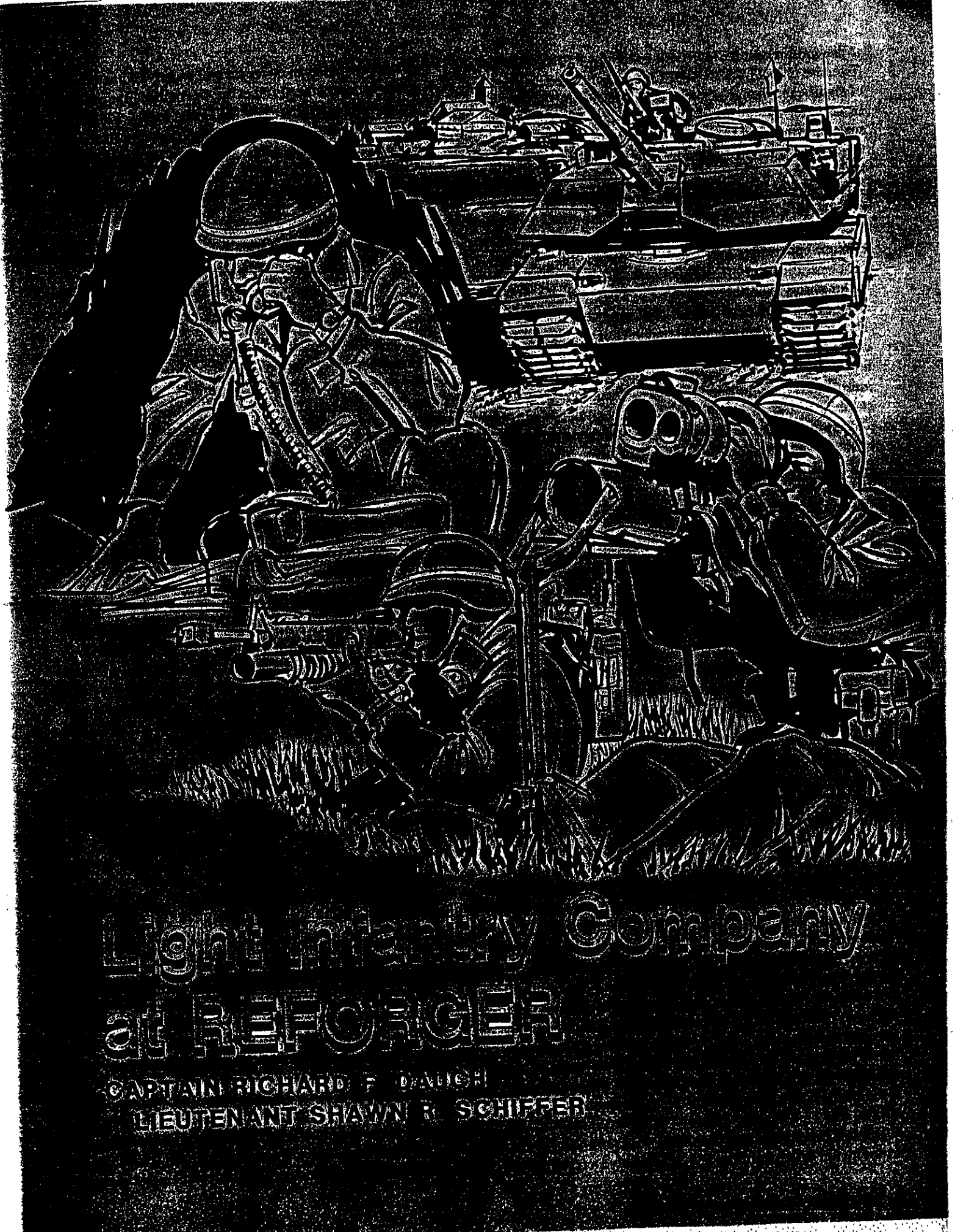
Scouts are not snipers, and designated riflemen are not snipers. Snipers can perform the missions of both scouts and designated riflemen, but this is not the best way to use snipers.

All three can and should function as a team. The snipers, using the scouts to find targets and report, can move in from another direction, kill, and leave, while the uncompromised scouts continue to track the enemy and set him up again. The designated riflemen can use their accurate fires to confuse the enemy as to the number and locations of the actual snipers.

Since we expect losses in combat, the scouts who shoot well enough, and the designated riflemen who shoot and move well enough, will also provide a pool of candidates for sniper slots. Other soldiers who try for these slots but do not succeed may be suitable for the scout or designated rifleman slots.

Used together, this trio of scout, sniper, and designated rifleman can significantly increase a unit's combat effectiveness. A single well-placed bullet, whether delivered by a sniper or a designated rifleman, is an intensely personal way to kill and to die. With that bullet, we send the message to the enemy that not only can we find him, we can also kill him. We can make the U.S. rifleman of today the most feared weapon on the battlefield.

Sergeant First Class John E. Foley recently completed an assignment as S-2 NCO of the 4th Battalion, 22d Infantry, 25th Infantry Division and is now a platoon sergeant in the 1st Battalion, 506th Infantry in Korea. This is his ninth assignment as a platoon sergeant, having also served in that position in Ranger, light infantry, and mechanized infantry units. Several of his articles have been published in INFANTRY.



Light Infantry Company at FORGER

CAPTAIN RICHARD F. DAUCH
LIEUTENANT SHAWN R. SCHIFFER

The most recent REFORGER exercise—REFORGER 1990 (Exercise CENTURION SHIELD)—was marked by a number of significant changes from previous REFORGER exercises. In addition to increased computer battle simulation and a scaled-down heavy force, more than 3,000 light fighters from the 10th Mountain Division were deployed into the simulated high intensity conflict.

Although the exercise did not offer its participants at company level a training intensity similar to what they could encounter at the National Training Center, it did give them a unique opportunity to test the effectiveness of light and heavy joint operations in a European scenario.

Our observations here are those of a light infantry company attached to a tank-heavy armor task force during the exercise. They are primarily directed at making light infantry company commanders aware of some of the difficulties of working with heavy units. At the same time, these observations may give mechanized infantry and armor commanders a better understanding of the capabilities and limitations of a light force.

Additionally, we acknowledge in advance that some of the methods and practices mentioned here were specific to the REFORGER 1990 exercise and would not necessarily be used in actual combat.

When our company linked up with the armor battalion to which we would be attached throughout the exercise, we were surprised to find that few of the battalion's officers involved in planning and conducting the operations had any idea of how a light company operated.

While heavy forces fight a more centrally controlled battle that is oriented at company level, light forces operate in a more decentralized manner, usually at squad or platoon level. An armor or mechanized infantry battalion S-3 who finds a light unit attached to his own must understand this significant difference before developing his operational plan. Fortunately, the commander of the armor battalion our company was attached to asked us to tell him how our company could be employed most effectively.

For those who are not familiar with light infantry operations, an excellent starting point is to study the light infantry company tables of organization and equipment, along with such documents as the 1985 white paper on light infantry and Field Manuals 7-70 and 7-71.

A light infantry company operating in a high intensity scenario against armored or mechanized forces has distinct capabilities—and weaknesses as well. For simplicity, these are discussed here in relation to the seven battlefield operating systems outlined in ARTEP 7-10 MTP (Mission Training Plan for the Light Infantry Company):

Maneuver. While a light force cannot hope to keep pace with the speed and fluidity of movement in mechanized operations, its ability to break down and conduct decentralized operations effectively at platoon and squad level makes for a different type of mobility—a wide dispersion of forces striking at the enemy commander to make him feel they are everywhere at once.

Through the employment of antiarmor ambushes and of antiarmor hunter-killer teams on key or restrictive terrain, a light infantry platoon can cover several square kilometers in which armor or mechanized forces are operating. Equipped with the highly effective AN/PRC-126 squad radio, a light infantry squad can operate independently and can request close air support and indirect fire. At the same time, the squad is still under the platoon leader's control and can be consolidated when a target of opportunity presents itself that requires the massing of additional force.

To operate under these conditions, small unit leaders must be aggressive and self-sufficient and show a great deal of initiative. And the soldiers, to withstand the hardship of being at the end of a tenuous resupply line, must be physically fit and well disciplined.

A light infantry platoon and its squads are trained to identify and strike at "soft" targets—command and control centers, enemy tactical operation centers, and trains sites. The units move and conduct offensive operations solely at night and use the daylight hours for sustainment, planning, and acquiring and observing additional targets through numerous listening and observation post positions.

When considering a light force's maneuver capabilities, the commander of a heavy force should keep in mind that the light force obviously cannot cover the same amount of terrain as the heavy force, nor can it be consolidated and moved instantaneously.

Another obvious point, but one that bears repeating, is that a light force should not be used in a head-to-head confrontation with tanks if this can be avoided. Despite the capabilities of the M-47 Dragon, the light force simply cannot carry enough missiles to become involved in any kind of protracted engagement with tanks without risking severe losses.

Our company was able to use the Dragon and the AT-4 effectively in reverse slope and flank positions as covering weapons for antitank mine and obstacle emplacements. But when we went head-to-head with armor and mechanized forces without well constructed obstacles, the results were disastrous.

Fire Support. A light company has two organic 60mm mortars, plus any additional fire support assets the parent unit may give it. Instruction in observed fire techniques is conducted down to the level of the individual soldier; the light squad is therefore able to bring all of its indirect fire assets to bear upon appropriate targets.

In REFORGER, indirect fire was the light forces' single most effective weapon. It allowed us to hit the enemy with enough firepower without having to become engaged in confrontations against vastly superior direct fire weapons. This non-attributable means of engaging the enemy continuously frustrated the opposing force (OPFOR). In fact, our use of indirect fire weapons was so effective that our greatest problem was having too few available umpires to judge the results of the large number of fire missions requested during defensive missions.

During a platoon level zone reconnaissance where elements were spread out over significantly greater distances than they would be in normal operations, however, requesting fire support became a problem because of the range of the squad radios. The platoons countered this problem by using field

expedient antennas and by moving to high ground whenever necessary. (One platoon waited until the hours of darkness and then made its way into a nearby town to use a telephone to identify indirect fire targets to higher headquarters.)

Heavy force commanders should be aware that the indirect fire missions light infantry soldiers request will be only as effective as the weapons supporting them. For example, the light units may call on their smaller mortars more frequently because they are readily available. But they will have less destructive effect on the armored vehicles the heavy commander would probably most like to see destroyed. Different weapon systems will have to be allocated for that purpose. Since soft targets are the favorite prey of light forces, though, mortars should be adequate for most indirect fire requests.

Additionally, fire support officers for heavy units should keep in mind that light forces cannot communicate on the tactical fire direction system (TACFIRE) digital net. The armor battalion we were attached to solved this problem by attaching a fire support vehicle to our company.

Intelligence. A light company commander, unless he has had previous mechanized infantry experience, must be aware that the S-2 portion of the heavy force operations order is radically different from anything he is used to. He must make sure he has as much information as possible about any enemy forces in his area of operations, and should also have overlays that show the location of any friendly heavy force engineer and fire support units in his sector.

Although these considerations may seem obvious, a light commander can easily overlook them, especially if he is somewhat overwhelmed by the scale and distance involved in a heavy force's intelligence considerations. He must work closely with the heavy force's S-2 and scout platoon leader in developing an effective and comprehensive counter-reconnaissance plan, keeping in mind that the light company squads improve the heavy commanders' ability to conduct counter-reconnaissance at night.

In fact, the heavy force S-2 must conduct face-to-face coordination with the light company commander and make a separate intelligence analysis that pertains to the light unit and its unique capabilities and limitations.

Light infantry units get most of their hard intelligence from information collected by their own or the task force's patrols. Apart from a general threat analysis and intelligence preparation of the battlefield (IPB), our light infantry company at REFORGER 1990 found, identified, and subsequently destroyed its own targets. We were also able to pinpoint for the task force commander a significant number of enemy force locations and to provide him with precise enemy unit identifications that we gathered from vehicle bumper numbers.

Our company also found itself being supplied with detailed and accurate intelligence from many German citizens. During a portion of the exercise in which our company was responsible for the strong point defense of a large urban area, we were repeatedly given updates and even grid locations and sketches of the enemy vehicles and soft targets.

While this type of interrelationship with the local populace represents an effective means of gathering human intelligence, platoon and squad leaders were also made aware that such conversations and observations could compromise their own unit locations and plans. Again, the responsibility for good operations security fell on the small unit leaders, and they responded admirably.

In wartime, information gathered this way would not be used as the sole source of information; it would be used only to corroborate intelligence summaries from higher headquarters.

Mobility and Survivability. One of the strengths of light infantry at the small unit level is its exceptional mobility, which is measured not so much by the distance the force can cover as by the types of terrain and environment in which it can maintain that mobility. Light forces cannot match the speed of the heavy forces, but in urban areas, steep terrain, and thickly vegetated terrain, it can negate the element of speed. In these environments, with the heavy force stymied, or at least made less effective, the light force can roam almost at will.

When the heavy force bypassed such areas as these (after learning the lesson the hard way through either severe losses or good terrain analysis), our company was still able to use the terrain and our superior mobility in certain areas to strike the enemy with direct fire and then withdraw through the restrictive terrain. We were also able to use the cover and concealment provided by that terrain to hide in and call for indirect fire without the enemy being able to find the source of the fire.

In urban terrain, many squads and platoons found themselves situated in private German homes within hours of taking up their assigned defensive positions—thanks to good soldier discipline, leader initiative, and the intercession of German-speaking soldiers. The dry, heated buildings, in addition to facilitating sustainment operations, also virtually eliminated the ever-present helicopter threat.

These squads and platoons reconstituted in shifts during the daylight hours and then patrolled during the hours of darkness, thus concealing the locations of their safehouses. Contingency plans issued to the soldiers also provided for stay-behind operations in case the assigned sector was overrun. Most of the enemy armored forces chose to bypass these areas, no doubt believing that fighting in urban terrain against a force familiar with the area would have been detrimental to their ability to accomplish their missions. As long as we could operate in a decentralized fashion, we could usually hurt the enemy. But whenever we massed for whatever reason, he hurt us badly.

A light company in a high intensity scenario is much more effective when it has engineer support. When obstacles, indirect fire, and direct fire weapons in prepared positions are coordinated, urban and steep, heavily forested terrain become nearly impassable for heavy forces. Accordingly, the ability to channel the enemy into effective engagement areas is significantly better when light forces, with a significant amount of engineer support, are used in an economy of force operation.

For a light infantry company that normally trains for employment in an environment with little or no NBC (nuclear, biological, chemical) threat, the extent of NBC play during REFORGER 1990 was quite a challenge for us. Light commanders who are headed for future REFORGER exercises would do well to devote extra time to NBC training and to operating in chemical protective overgarments at all MOPP (mission oriented protective posture) levels.

Air Defense. With only a Stinger section under the operational control of the entire light infantry battalion, passive measures to avoid detection were the best defense the light infantry company had against both fixed wing and rotary aircraft. Given the large number of heavily armored tank-killing helicopters above the mechanized infantry or armor battlefield, our soldiers had to be schooled in the way scout and attack teams worked together and also in the methods they should use and the proper times to engage. Those aircraft, despite our success in eluding the enemy aircraft at night, were an ever-present menace to our unit.

Combat Service Support. With the one HMMWV (high mobility multipurpose wheeled vehicle) currently allotted to a light infantry company as a support vehicle, and with the extended distances between subordinate elements, sustaining our squads and platoons and performing logistical support operations was difficult. The subordinate elements that were able to secure shelter in private homes or in public buildings such as gymnasiums presented an additional resupply problem.

Our HMMWV was drastically overburdened; the commander had to use it as a command and control vehicle, and the first sergeant or executive officer had to use it for resupply. This problem was severe enough, in our opinion, to warrant a TOE change to add a command and control HMMWV to the light company.

Although the rules of the REFORGER exercise prohibited interfering with Class I resupply, our light infantry soldiers had to use every possible means of sustaining themselves and, in the case of our small unit leaders, their entire elements.

Class I supply of a light company attached to a heavy unit is best carried out if the unit feeds nothing but MREs (meals, ready to eat). Many leaders would argue that denying soldiers A-rations or T-rations is tantamount to abuse, but given a light force's operational methods, the MRE is the better choice, hands down. A light company simply does not have the equipment to heat meals adequately, or the vehicles to pick up meals prepared by the more luxuriously equipped heavy unit and deliver them to its widely dispersed squads. Of greater concern is the tactical risk of assembling even a rifle squad for feeding, in addition to the risk to the first sergeant or executive officer if he has to drive through contested territory in a thin-skinned vehicle.

The MRE is more flexible. Its configuration allows for prepositioning and easy portability. All of our squads said they would have preferred MREs that were warmed with trioxane fuel bars to T-rations that, more often than not, were cold when they arrived at a squad position and usually arrived without the needed accessories—can opener, flatware, and plates. In addition, T-ration trash is much more difficult to dispose of in accordance with a good operations security plan; MRE trash can be carried out in the soldiers' rucksacks.

In keeping with the light infantry doctrinal tenet of using available assets, whenever possible, instead of relying on external resupply, the soldiers augmented the ration cycle by purchasing food on the local economy.

Light infantry doctrine also calls for the extensive use of foraging and other techniques to augment or substitute for resupply. Since foraging would quite obviously have been politically unacceptable during a training exercise, the light force was allowed to test a substitute concept that provided a similar training experience. German currency was issued to officers and senior NCOs who, acting as Class A purchasing agents and field ordering officers, used it to procure subsistence items on the local economy. When Class I resupply was impossible because of the tactical situation, this method worked exceptionally well and was flexible enough to fit within mission constraints.

The resupply of water and facilities for personal hygiene was difficult. While many German citizens allowed our soldiers into their homes for shelter, their generosity understandably waned when it came to allowing nine soldiers to run hot water for shaving or to refill their canteens on a daily basis.

With stringent rules concerning the disposal of human waste in effect throughout the exercise, the problem of where and when soldiers could relieve themselves, especially in urban areas, became one of great concern. Many squad and platoon leaders resolved the situation by paying out of their own pockets in German currency for facilities at local gyms or sports centers.

Class III resupply was made possible through our attachment to an armor battalion that was generous enough to supply our vehicle with diesel fuel and POL (petroleum, oils, and lubricants). When a hose on our vehicle's water pump broke, however, the armor battalion trains did not have the necessary repair part. Again, a local purchase at a German automotive store solved the problem.

Coordination on the ground with the armor battalion's support platoon leader and battalion S-4 resulted in a resupply situation that proved beneficial to our company. (An even more effective supply relationship might have developed if higher level commanders had coordinated with the heavy force before the exercise began; the heavy force leaders told us that they would have been able to ease some of our logistical support problems if they had known more of our requirements.)

Class V resupply of the light force by the heavy force was difficult, because each used different types of ammunition. The heavy force had no 60mm mortar rounds and only limited amounts of 7.62mm rounds for the M60 machinegun and 5.56mm linked ammunition for the M249 SAW. This put an additional burden on the heavy task force's S-4, who had to restructure his logistical packages to supply the light forces. The "push" resupply technique must be used in resupplying the light force.

Command and Control. Command and control was difficult because of the limitations on communication equipment and the lack of a dedicated vehicle for the commander. The rifle squads operated close enough to their platoon for the limited range of their squad radios to be effective. The platoons, however, were often so widely dispersed that communication with the company was either impossible or too sporadic to be effective. As a result, the company commander frequently had to travel out into the areas where the platoons were operating, often surrounded by the enemy, to coordinate with a platoon leader face to face.

The ability of small unit leaders to take the initiative, in keeping with AirLand Battle doctrine, is key to the success of the light force. If the platoon leaders are to capitalize on opportunities, they must first fully understand the general situation and the commander's intent. Then they can make independent decisions within the framework of that intent.

A tactical satellite dish communication system for light infantry forces would be a big help in any type of operation. Because of the additional equipment the radio telephone operator must carry to build field expedient antennas to augment the aging AN/PRC-77 radio, along with the time involved in constructing them, serious consideration should be given to making tactical satellite communications commonplace in light infantry units as well as special operations forces.

An additional HMMWV in the light company would also greatly reduce the burden on the one vehicle currently allotted by TOE. It would also make concurrent command and control and logistical support a real possibility instead of just a concept.

With the political situation constantly changing in Europe, future REFORGER exercises are now in question. Because of both budgetary and environmental constraints, any exercises that may be conducted in the years to come will certainly involve fewer soldiers, more command post play, and more computer simulation.

REFORGER 1990, however, will be remembered not only for the cutbacks that were already evident in it but also by the effectiveness of the light fighters from the 10th Mountain Division who conclusively proved that they can survive and win on the battlefield with a heavy force.

Still, some skeptics have already expressed doubts as to the true effectiveness of the light force in view of the restraints of REFORGER game rules. These disputes might be easily resolved to the benefit of light infantry, mechanized infantry, and armor leaders if light forces were occasionally rotated to the combat training center at Hohenfels, Germany, where the combat environment is more realistic.

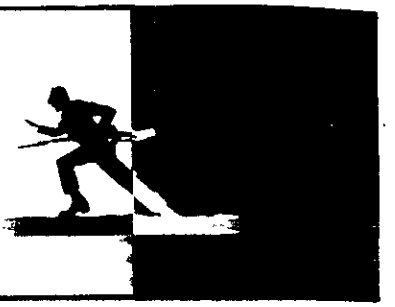
To increase the combat readiness and effectiveness of the combined arms team, the leaders of both the light and the heavy forces have an obligation to themselves and their soldiers to study the employment of each other's forces.

The performance of light infantry forces in Exercise CENTURION SHIELD has earned light infantry a spot as a complementary force on the combined arms team in a high intensity conflict.

Captain Richard F. Dauch commands Company C, 3d Battalion, 14th Infantry, 10th Mountain Division at Fort Drum. He previously served as platoon leader and company executive officer in the 4th Infantry Division at Fort Carson. He is a 1983 graduate of the United States Military Academy.

Lieutenant Shawn R. Schiffer is executive officer of the same company. He is a 1985 ROTC graduate of the University of Connecticut.

TRAINING NOTES



Project SHARE 90
Grenada and Panama

EDITOR'S NOTE: In September 1966, the Infantry School launched its Project SHARE program, the final objective of which was to publish a book of small unit combat experiences from Vietnam. The intention was to model the new book after its famous predecessor, INFANTRY IN BATTLE, which was a collection of World War I combat experiences that had been published in the mid-1930s.

In reality, Project SHARE in 1966 was nothing more than a solicitation for publishable combat experiences from Infantrymen who had served in small units in Vietnam. The response was tremendous and, as a result, the School (using INFANTRY magazine as its vehicle) published a hard-cover book titled INFANTRY IN VIETNAM in December 1967. A second collection of Vietnam combat experiences titled A DISTANT CHALLENGE was published in 1970.

Now, we at INFANTRY are starting Project SHARE 90, similar in purpose to the 1966-1967 project, but with the intention of procuring publishable small unit actions from the recent Grenada and Panama operations. We will print many of them in INFANTRY and, hopefully, will be able to publish all we receive in booklet form.

If you are interested in submitting a combat experience, we ask that you use the standard format spelled out in the following article. (It was one of the early Project SHARE submissions and appeared in the March-April 1967 INFANTRY.) If an experience does not seem to fit this standard format, however, just write it the way you want and send it to us. Please double-space your submissions.

Additional information on Project SHARE 90 can be obtained either by writing to INFANTRY's editorial office, P.O. Box 2005, Fort Benning, GA 31905-0605, or by calling AUTOVON 835-2350, commercial 404/545-2350.

SURPRISE

Introduction

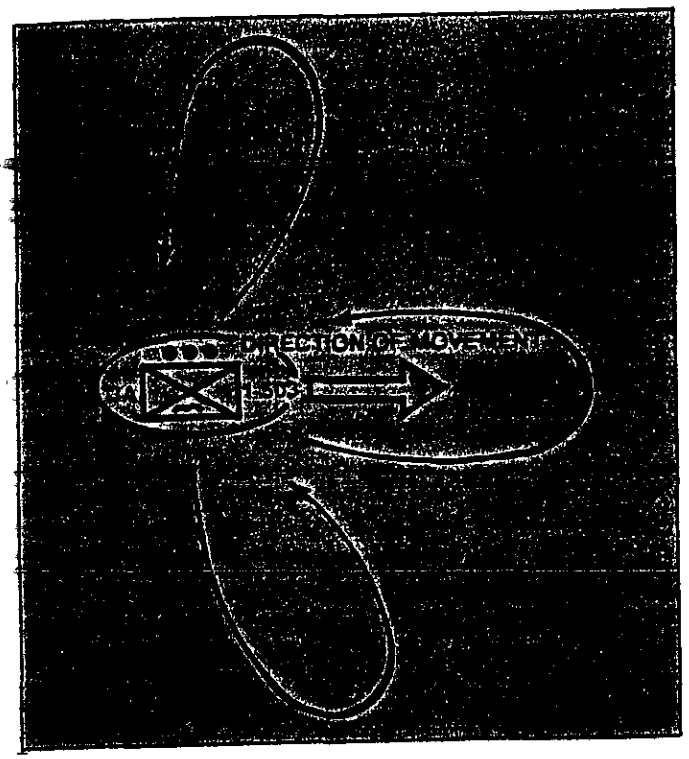
The 3d Platoon, Company A, 1st Battalion, 503d Infantry, 173d Airborne Brigade, acting independently during a search and destroy mission in September 1965, was extremely effective in penetrating a Viet Cong outpost system and making a successful assault in the notorious War Zone D. In this instance, surprise was the ingredient essential to the success of the action.*

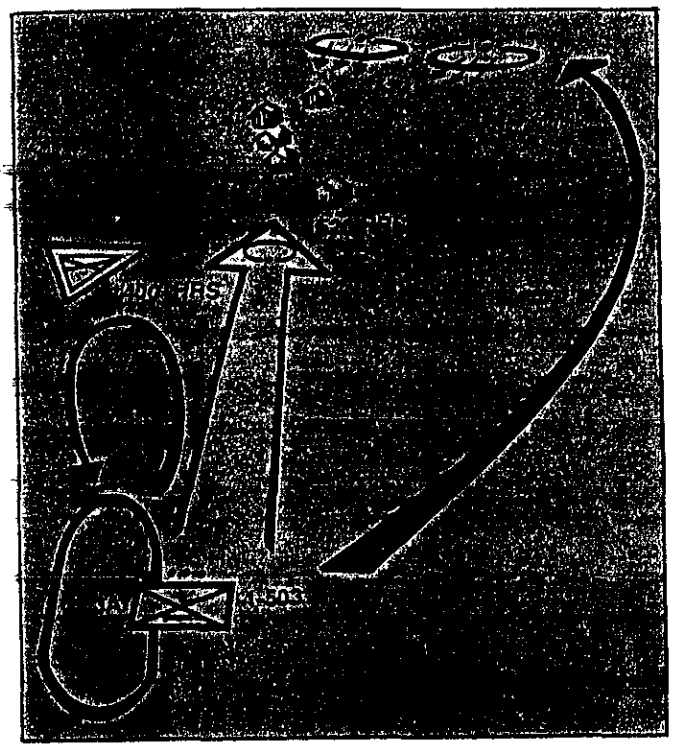
**Combat experience related by Captain Walter Daniel to Captain Anthony E. Hartle for use by Project SHARE. Captain Daniel commanded Company A, 1st Battalion, 503d Infantry, 173d Airborne Brigade.*

Narrative

After participating in a successful airmobile assault just north of Ben Cat, the 3d Platoon was ordered to move as a part of the company column to a battalion helicopter extraction zone several thousand meters away. At midday, the platoon leader, Lieutenant Robert Oakes, received an order to move on a separate axis enroute to the extraction zone and search an area where enemy activity had been reported.

As his platoon moved through the thick jungle, spotted with small open rice paddies, Lieutenant Oakes concentrated on





the task of finding the enemy before his platoon was discovered. He would move approximately 300 meters in one of the usual platoon combat formations, employing a point element to his front and security to his flanks, and then halt and form a hasty perimeter. From this perimeter he would send out five-man fire teams to the front and flanks in a cloverleaf pattern; the fire teams would move out from 50 to 200 meters—depending upon the terrain and vegetation—to search for signs of the elusive enemy. If nothing was found, the platoon would move forward another 300 meters and repeat the process.

Lieutenant Oakes had found this method to be very effective on previous operations, because in the dense undergrowth, which limited command and control and encouraged ambush, the platoon could cover a considerably larger area during its movement than would have been the case had it employed only normal security measures and formations—the wedge, column, or vee.

At about 1400 hours, one of the fire teams, looping to the front, observed a Viet Cong in an outpost position; moving slowly and carefully, the fire team returned to the platoon command post to report the information. Lieutenant Oakes consolidated his platoon and sent a small reconnaissance patrol forward, the members of which could see a number of camouflaged huts about 100 meters beyond the outpost. After receiving this report, Lieutenant Oakes swiftly dispatched two squads to work their way around to the opposite side of the camp to establish blocking positions.

At 1520 hours, Lieutenant Oakes received word by radio that the blocking squads were in place. He then led the remainder of his platoon forward, squads in column, moving quietly to avoid discovery by the enemy. As they neared the camp, the squads moved on line as much as possible in the thick vegetation and then quickly launched an assault, which succeeded in taking the enemy completely by surprise. Twelve of the fifteen Viet Cong occupying positions near the huts were killed during the assault; three escaped the initial assault but were killed as they tried to move through the squads occupying the blocking positions.

Analysis

Lieutenant Oakes and the members of his platoon had succeeded in surprising and annihilating an enemy unit in the latter's own base area.

His initial formation proved to be effective for achieving surprise—without being surprised—in a dense jungle area. Had a different formation been used, the 3d Platoon might well have been discovered by the VC outpost that had been established for that purpose, and the element of surprise would have passed to the enemy. In that situation, Lieutenant Oakes might have been faced with evacuating his dead and wounded and with the survival of the remnants of his command, rather than with assaulting and overrunning an enemy camp.

Realizing the futility of trying to encircle the camp with his small force, Lieutenant Oakes established blocking positions along the enemy's most likely avenues of withdrawal. By taking this action, he again achieved surprise and was totally successful in annihilating the enemy and destroying his base camp.

Lessons Learned

Surprise, as a principle of war, is not reserved for a particular level of command. Surprise must be employed in the planning and conduct of operations from Army level to squad level if decisive victory is to be achieved. At no time should we give the enemy the advantage of surprise, especially when we fight him in his

own backyard.

For the small unit commander, the principle of surprise is of paramount importance in all operations—the offense, defense, patrols of all types, road and motor marches, ambushes. If he is to attain success in battle comparable to that achieved by this platoon of the 173d Airborne Brigade in War Zone D, he must deny the enemy the advantage of surprise while gaining and maintaining the ability to surprise the enemy.

Mortars
Tactical Employment

COLONEL ROBERT D. SANDER

The tactical employment of mortars and the effects that mortars produce have been documented at our combat training centers (CTCs) and, in simple terms, mortars are not producing the results that their potential promises. Typical observations that support this statement include the following:

- Mortars make no contribution. They are not effective.
- Fire support teams (FISTs) and forward observers (FOs) send all fire missions to the field artillery.
- Mortars are not integrated into the fire support plan.
- The effects of mortars are not assessed realistically by the simulation systems used at the CTCs.
- Mortars do not stay within range and are not available when needed.
- Mortars are inaccurate; they seldom use surveyed positions and do not apply meteorological corrections.
- Staff responsibilities for mortars are not clearly established in doctrine and unit SOPs.

(These employment problems are the focus of a study being conducted by the Infantry School, the Center for Army Lessons Learned (CALL), and the Rand Corporation. Although the results of the study are not yet available, the specific observations noted above reflect valid concerns. Because mortars involve both the fire support and the maneuver arms communities, a combined effort is required if we are going to make substantial progress.)

The allegation that we are failing to use mortars to their full potential is absolutely true, and I believe the principal reasons for this failure lie outside the mortar platoon. We do not use mortars to their full potential because we fail to complete the detailed planning and preparation that is needed, and we fail to support planning with the required training.

PLANNING

There is a fundamental difference between the planning process for field artillery targets and the process for mortar targets. After a field artillery target is planned and approved in the fire support coordination and maneuver command channels, it is passed to the field artillery battalion headquarters where there is a staff available to continue the planning process and to determine such details as required positioning, most effective ammunition, the number of volleys required to achieve the desired effects, and logistical requirements.

The mortar platoon leader has no such subordinate staff or dedicated representative on the battalion staff. While the mortar platoon leader and his platoon sergeant are capable of performing this function, their primary duties are those of combat leaders, and the current operation normally requires their full attention.

The commander and his staff, therefore, must develop a concept that includes consideration of calls for fire or execution responsibilities, communication requirements, positioning and movement, and the terminal effects the mortars are expected to achieve on each target. The missions they assign to their mortars must be defined in terms of targets that are critical to the success of the battalion or task force mission, the effects required on those targets, and the specific time and circumstances in which these fires are required.

The platoon leader's role in the planning process is to take this detailed concept for employment and the accompanying fire plan (which together state *what* is to be done) and continue the planning process to determine *how* it will be done. The mortar platoon leader can then add the resolution required to convert this concept into a detailed plan.

Equally important is the concept of purpose. The platoon leader must understand not only how his fires will support the maneuver elements, but also the role of the other fire support systems so that he can implement any changes that may become necessary on a battlefield peopled with an uncooperative enemy.

Maneuver company commanders and

platoon leaders also play a critical role in planning and executing the mortar fire plan. As the plan for fire support is developed during the top-down fire-planning process, therefore, call for fire or execution responsibility must be established, and observers, both primary and back-up, must be assigned for each target.

Because fire support teams and forward observers work for the company commander or rifle platoon leader they support, responsibilities for calls for fire are established through command channels, not fire support channels. While this requirement is generally understood and accepted, the detailed planning a company commander and his fire support officer must do is frequently overlooked.

For example, they must position observers to observe the targets and the trigger lines, refine the target locations as required, and plan and coordinate fires on additional targets in accordance with the fire support plan. To make sure fires are synchronized with maneuver, the observers must have a complete understanding of their targets and of the timing and control required in calls for fire.

This portion of the company plan has to be coordinated with the staff and the mortar platoon, briefed to the battalion commander by the company commander, and rehearsed. Other details must be addressed and understood by both the observers and the fire direction center—which communications net the observers will use, for example, along with alternate nets, anti-jamming procedures, alternate routing for the call for fire, and alternate means of communication. After all, if the communication plan fails, so does the entire indirect fire support plan.

Before reliable radio communications can be established, the range of and the line-of-sight requirements for the FM radios must be met. While the ranges of the mortar and tactical radios are generally compatible, the observers or fire support officers must also be able to talk to the field artillery fire direction center and the battalion fire support element. The mortars' ability to exploit high angle fires and occupy positions in deep defilade to improve their survivability from counterfire can often contradict the need to maintain line of sight for communications.

The general rule of "supporting to supported" can be applied to the responsibility for establishing communications, but reason and logic must prevail. Retransmission assets are scarce, and mortar platoons can be expected to engage targets called in to them by observers in a variety of locations. In some cases, it may be necessary for company commanders to relocate their observers or adhere to positioning constraints to establish communications.

Line-of-sight problems can be predicted with reasonable accuracy on the basis of a map inspection. This map inspection and the adjustment of mortar or observer locations must be an inherent part of the planning process. Whenever possible, or whenever prudent from an electronic warfare perspective, the communications plan should be tested during the rehearsal process.

CHANGING NETS

The number of times observers are expected to change nets during battle should be kept to a minimum—not because it is a difficult task but because it is one that can easily be overlooked in the heat of battle. Whenever possible, forward observers should be dedicated to the mortars.

The positioning and movement of the mortars require the attention of both the staff and the mortar platoon leader. While it may seem like a cliche to say that everyone must understand the SOP, it is certainly a fact in this case. Doctrine on the specific responsibilities and roles of the S-3, the FSO, and the mortar platoon leader varies from one publication to another. Stated more positively, doctrine actually gives the commander great latitude in determining these procedures.

In any case, the starting point in planning the movement and positioning of mortars will include the targets, the effects desired, the movement time between positions, and the availability and role of other fire support systems.

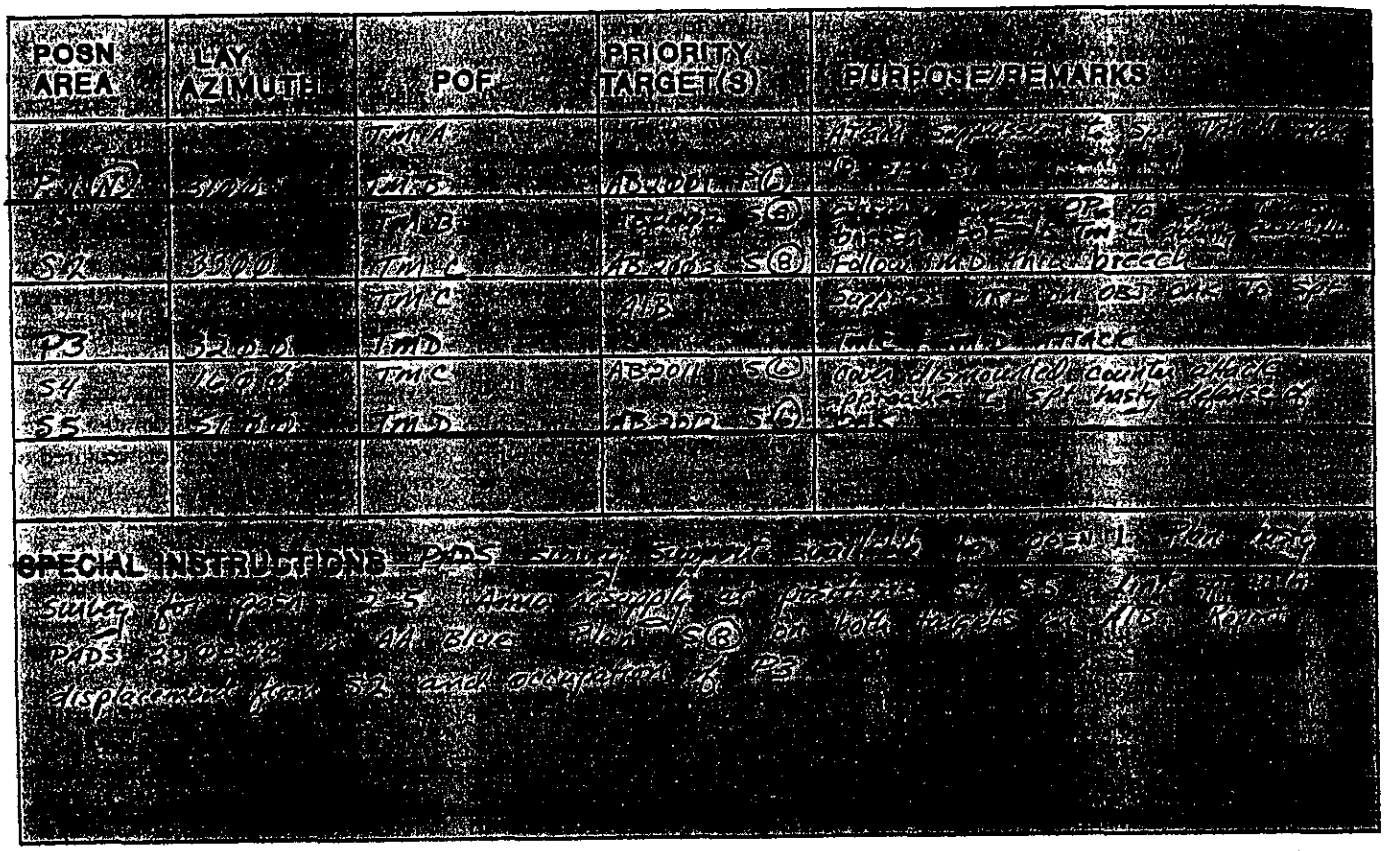
Once the critical mortar engagements have been identified in the planning process, movement to support these engagements must be considered. In restrictive terrain, priority of routes and terrain management may be critical elements of the plan. Obviously, there must be enough movement time, a thorough route reconnaissance, and a movement rehearsal whenever possible. In addition, as in all tactical movements, leaders must consider the ranges to the assigned targets; communications with supported units and observers; security and survivability; flexibility; and future operations. There are two additional considerations—survey support and the effects required on the targets.

Survey support is a critical portion of the plan that is often overlooked. The first misconception that must be corrected is that mortars can get along without surveys because they are area fire weapons and adjustment is expected. The second misconception is that if the field artillery cannot provide survey support, mortar leaders have no other choice but to determine their positions by map spots.

A survey is essential for indirect lay, and indirect lay is rapidly becoming essential for survivability. It is well-documented that self-location by map spot normally involves an error of 400 to 500 meters. In accepting this much error we must also accept loss of surprise, more adjusting rounds, more lost time, more radio transmissions, and greater risk of counterbattery acquisition. It can also lead to a higher risk of fratricide or the discovery at precisely the wrong time that targets that appear to be at the maximum range are, in fact, out of range.

Our doctrine charges the mortar platoon leader with the task of coordinating with the FSO for survey support from the supporting field artillery unit. And obviously, the field artillery unit with its position azimuth determining system (PADS) and organic survey sections is the best remedy until a positive navigation system can be fielded.

PADS and external support, however, are not always available, even for field artillery batteries. The solution then is a hasty survey, and all the equipment required to do one is on hand in the mortar platoon. The only components normally missing are knowledge, training, and prior planning.



Hasty survey procedures are found in Field Manual 23-91 and in the new Field Manual 23-90, which should be in the field later this year. More detailed discussions are in Chapter 5 of Training Circular 6-50. Survey training is not now included in the Infantry Mortar Platoon Course or the Advanced Noncommissioned Officers Course, although projected changes to the course would add this instruction. Training support is available, however, from the direct support field artillery battalion. Within field artillery batteries, hasty survey is practiced routinely, and in many units it is a drill that receives command attention.

A hasty survey works, it is relatively fast (assuming training time is devoted to developing and maintaining proficiency), it is infinitely more accurate than map spotting, and training assistance is available.

As for the terminal effects of mortars, neither fire support officers, commanders, nor mortarmen understand them well. Most seriously underestimate the number of volleys required to achieve a specified level of target coverage. The reason for this is simple: The information is not in our unclassified doctrinal publications. Terminal effects data can be found only in a series of publications referred to as Joint Munitions Effects Manuals (JMEMs), which are classified Confidential.

Within the field artillery system, the process of determining the number of volleys required for a given target normally takes place in the field artillery tactical operation center. The S-3 or fire direction officer makes that decision on the basis of his training and experience. In an automated system, the computer software is programmed with the JMEMs data. Unfortunately, though, there is no such system for mortars. Mortar leaders must rely on "experience," and combat experience in our FDCs has long since faded away. To make better decisions, they are going to have to "hit the books." In this case, the books are:

- For the 60mm mortar—FM 101-60-31, dated 13 October 1988.
- For the 81mm mortar—FM 101-60-1, Revision 2 with Change 1, 17 November 1988.
- For the 107mm mortar—FM 101-60-70, Revision 1 with Change 1, 17 May 1979.

An analysis of the JMEMs data can produce some fundamental conclusions. First, the number of volleys required can significantly affect planning for ammunition resupply actions. Second, depending upon the nature of the targets, the desired effects, and the unit's ammunition haul and resupply capability, the number of targets in the fire plan may have to be reduced. Third, because of the volume of fire or the mass needed to achieve a required effect, deployment and movement by section may not be feasible, and the mortars will have to move and deploy by platoon. In some instances, the requirement for mass and for moving by platoon means that the concept of "continuous fire support" from the mortars may need to be redefined.

The continous support of fast-moving mechanized offensive operations may also call for the piecemeal commitment of the mortars. And there may be some types of targets that are not within the capability of the mortars to attack, regardless of the number of volleys they fire. Again, we must focus the mortar platoon's mission on critical targets that are compatible with its capabilities and then maneuver the platoon into a position to provide these fires at the time and in

the volume needed.

Once the concept of employment has been developed, the next task is to convey this information to the platoon leader in a form that quickly and graphically describes his mission. A matrix is a good technique. The example of a mortar execution matrix shown here represents the minimum detail a battalion commander owes the mortar platoon leader.

The entries across the top of the matrix are the following:

• **Position Area.** An entry under this column means it is the general area the mortars are expected to occupy. The positions are identified by sequential numbers and preceded by either a P, for movement by platoon, or an S, for displacement and occupation by section.

Position 1 in this example is followed by an N to indicate that a night movement and occupation is required. The staff has made certain that use of the terrain has been coordinated and that the mortars will be able to reach the assigned targets from these positions.

• **Lazy Azimuth.** The azimuth is measured from the center of the position area to the center of the area in which mortar coverage is required. This becomes increasingly important when working in non-linear tactical situations or with carrier mounted mortars that have traverse limitations.

• **Priority of Fires (POF).** No change from current doctrine.

• **Priority Targets.** The matrix not only identifies the priority targets that correspond with the task force's forward movement but also indicates the number of volleys that will be required to achieve the desired effect. The letters P or S indicate whether platoon or section volleys are desired, and the number that follows indicates the minimum number of volleys. A review of the total number of volleys provides the basis for initial ammunition resupply considerations.

• **Purpose/Remarks.** A statement of purpose is entered in this column so that the platoon leader can better understand his platoon's role in the coming battle and how his unit is expected to support the commander's intent. Given this information, he can better anticipate the requirements generated by enemy action or by a changing tactical situation.

Admittedly, this approach to mortar fire planning can be said to contradict current doctrine. Some will say that the mortar platoon must be given the entire indirect fire target list and be prepared to fire any or all of those targets. In theory, it is hard to disagree with this view. But this approach sets an unrealistic goal for the mortar platoon to reach and gives the mortar platoon leader a mission he cannot possibly complete. When any system fails as often as our current system (as it is practiced), it is time for a change.

Colonel Robert D. Sander, a Field Artillery officer, is a senior advisor with the 89th Army Reserve Command in Kansas. He previously served in the Combined Arms and Tactics Department of the Infantry School and commanded a Field Artillery battalion in the 1st Infantry Division. As an aviator, he served with the 101st Airborne Division in Vietnam.

Heavy Mortars
New Thoughts on Tactical Employment

LIEUTENANT CHRISTOPHER J. L. ALLEN

The Army's doctrine and methods for employing mechanized infantry have changed radically in the past five years. The introduction of the M1A1 main battle tank and the M2 Bradley fighting vehicle has contributed to the intensity of mechanized warfare. In addition, at the National Training Center (NTC) at Fort Irwin, California, inventive commanders are now pushing their mechanized forces toward deeper and swifter offenses and defenses. The heavy mortar platoons in these units must either adapt to the changes or be relegated to the role of a garrison detail force.

Most mortar platoons are underused and neglected, as numerous rotations to the National Training Center have painfully illustrated. This state of affairs has resulted partly from too much adherence to the doctrine in Field Manual 7-90, Tactical Employment of Mortars, and partly from too few commanders who are willing to "waste time" ensuring that their organic fire support assets are employed effectively.

In some offensive operations, heavy mortar platoons receive few if any calls for fire. In defensive operations, they usually go through the motions of setting up but chiefly to appease an evaluator. Commanders, all too often, seem to expect to receive reports during after action reviews on the way the mortar platoon "messed up."

In light of all this, I believe that some

new thoughts on the tactical employment of heavy mortars are long overdue and offer here some of my own.

The deep attack has become a favorite of battalion and brigade commanders in recent years. By assaulting for distances of up to 20 kilometers, these units can quickly outdistance the 6,840-meter range of the M329A2 107mm round, as well as the mortar sections' ability to maintain continuous and effective fire support. Unfortunately, some mortar platoons are not permitted to operate in split sections, and the intricate fire missions with which they are tasked inevitably force them to fall behind the task force's attack.

Battalion commanders and their fire support officers give little thought to incorporating their mortar platoons into the scheme of maneuver, other than to keep them "out of the way."

There are some simple solutions to these problems. For example, most task forces, when on the offense, currently send a lead element of at least company strength forward with the main body usually following on the same or an alternate route. During this phase, because of the scope and depth of the modern battlefield, heavy mortar platoons should always operate in split sections for tactical effectiveness. To maintain continuous fire support, these mortar sections must be allowed to function as independent tactical formations, although they must always coordinate closely with each other.

Each section should follow closely behind a line company. This does not mean that the mating of a mortar section to a line company will necessarily result in support for that company. It does mean that the company is expected to clear the way and provide security for the mortar section. One mortar section should therefore be mated with the lead or "jump-off" element, while the second section is mated to the main body. This deployment allows the mortar platoon to advance at the forward edge of the battle area (FEBA) and provide continuous fire support beyond the line of departure (LD) deep into enemy territory. If one section should fall slightly behind, it can easily accompany later elements of the main body.

Heavy mortars are too important to be neglected in training exercises.

Although there is a continuing threat of counterbattery fire, each mortar section must make only brief stops and do its best to keep up with the attack. The heavy mortar platoon has tactical superiority because it can provide fire support more rapidly than cumbersome field artillery units. (It can fire a fast suppression "hip shot" in three minutes.) To use this ability to the best advantage, commanders should direct their mortar units to fire suppression or smoke rounds on the offense. The heavy mortar platoon, for instance, is uniquely qualified to deliver a lot of smoke quickly, and smoke is now being used extensively during NTC exercises.

The heavy mortar platoon must pay constant attention to its forward movement. During a fast-paced offensive action, the "hip shot" must become the unit's tactical mainstay, with the field artillery handling the preparatory fires.

By constantly moving forward and firing "hip shots," the mortar platoon can keep up with any task force and can provide continuous fire support to that force. The sections need to keep in constant contact so they can coordinate their movements and pick up missions one or the other section cannot handle. During lulls between fire missions, the sections should move forward simultaneously. Either section can stop if a sudden fire mission is called.

Beyond the LD, the formal forward displacement plan is dead. The mortar sections must still be provided a route forward but they must be flexible and ingenious in their operations. As line units deviate from their routes, as they often will, so must the heavy mortar sections to take advantage of the security the line units provide.

In the defense, the heavy mortar platoon must also be permitted to operate in split sections, with the sections placed to support the two infantry teams of the traditional task force. Again, the teams provide forward security for the mortar sections, while the sections provide final protective fires and obstacle coverage for the teams. With heavy mortars in direct support, the infantry teams gain considerably more firepower.

Commanders must also be flexible and permit a mortar section to fire the missions of any company, so long as these do not interfere with its primary defensive mission.

Heavy mortar teams should confine their fire missions to lightly armed vehicles and infantry, against which mortar fire has the greatest effect. Although mortars can also be fired to suppress advancing tanks, they will not cause much damage. In any case, the amount of ammunition available will undoubtedly dictate target priorities.

Commanders can use mortar smoke to

screen defensive redeployments. Quick smoke of longer durations is most effective in the defense, and this use of mortars has been neglected.

In the defense, too, a more traditional rearward mortar displacement plan is possible. Firing points can be selected and the details calculated ahead of time, but flexibility must still be paramount. While moving to cover the task force, the mortar sections must be prepared to fire hip shots as they move toward the rear.

The possibility that the task force will launch a counterattack also calls for forward-reaching mortar fire. The same precepts used in the offense are therefore applicable in the defense for covering such a move.

Commanders need to be willing to integrate heavy mortars into their fire support plans and to communicate the plans to their field artillery fire support officers (FSOs). Few in the artillery community understand mortars and their comparative effectiveness in terms of time. Mortars are both powerful and fast.

Artillery forward observers (FOs) and company FSOs prefer to use the 155mm and 207mm howitzers, which they believe will give the greatest effect. Experience at the NTC has shown, though, that few artillery battalions can deliver fire on targets in less than 15 minutes from a call for fire, and this is often too late to do much good.

Close cooperation between the battalion FSO and the mortar platoon leader can solve this problem if the commander is supportive. Once the FSO realizes what a strong asset the heavy mortar platoon is, he can assign it missions that require an immediate response. A company FSO must also be convinced of the 107mm mortar's effectiveness.

The mortar platoon leader should actively participate in the battalion FSO's fire support rehearsals so that his unit's role can be discussed and integrated into the overall plan. Once the battalion fire support team and the mortar platoon have worked together several times, the mortars will never lack for missions.

It is also imperative that each mortar section be able to monitor the battalion command net. The information available on this net enables each section to make critical decisions regarding its movement and the urgency of its assigned missions. Again, constant contact between sections is essential.

Our current doctrine states that the mortar platoon leader will succeed the battalion FSO in the event he becomes a casualty, but I believe it should be the senior company FSO who actually takes over that role in battle. Since he has access to a more sophisticated digital message device than the M23 mortar ballistic computer, he is better prepared and situated to interact with field artillery network. Only when the battle is over should the mortar platoon leader assume the duties of the battalion FSO if no replacement is readily available by then.

Finally, the battalion FSO should serve as the clearing house for all calls for fire, because only he can make a full evaluation of the fire support situation, and the mortar sections should receive their calls for fire from him. If necessary, of course, the company FSOs can call for mortar fire directly, but this option should be carefully reviewed during fire support rehearsals.

Heavy mortars are too important to be neglected. If our commanders come to realize how effective they are, and how fast they can be employed, heavy mortars will be allowed to take their appropriate place in any mechanized infantry battle.

Lieutenant Christopher J. L. Allen is a tank company executive officer in the 2d Battalion, 35th Armor, at Fort Carson. He previously led a tank platoon and a mortar platoon. He is a 1986 ROTC graduate of Cornell University.

Mortar Platoon Matrix

LIEUTENANT CRAIG S. LINDERMAN

In a battalion task force equipped with M1 Abrams tanks and M2 Bradley fighting vehicles, there is now a mobility gap between these new vehicles and the less capable M106 mortar carrier. (See also "Improved Mortar Vehicle," by Sergeant Gilbert F. Warner, INFANTRY, July-August 1989, pages 17-19.)

Lessons learned at the National Training Center (NTC) indicate that the 4.2-inch heavy mortar platoon's ability to provide successful close indirect fire support to the task force has become increasingly difficult because of this handicap. The platoon, to accomplish its mission, must acquire greater agility and initiative in the planning and execution phases of an operation. A mortar platoon matrix can help a platoon leader accomplish this goal.

In recent years, the execution matrix technique has become increasingly popular for detailing portions of a field order. The strength of the matrix is its ability to present large amounts of information clearly and concisely. The elements of the operation order that are especially

suited to the matrix format include the scheme of maneuver, the fire support plan, and the obstacle and engineer execution plan.

Although this technique is most often used at company team level and above, a heavy mortar platoon leader will also find the matrix format ideal for presenting his own concept of operation to supplement his platoon order and guide in its execution.

A mortar platoon execution matrix should include the scheme of maneuver and the fire support plan at least, and should be readily applicable to both offensive and defensive situations. In addition, it should be event-driven so that planned platoon actions are clearly linked to the evolving task force plan.

The mortar platoon execution matrix that I propose meets all of these requirements and also includes a plan for controlling emergency administrative and logistical operations within the platoon.

This mortar platoon matrix consists of five rows labeled (from top to bottom) Section A, Section B, Priority of Fires, Priority Targets, and Checkpoints in Effect, as shown on the accompanying sample matrix. The first two rows refer to the platoon's individual gun sections and cover the planned scheme of maneuver for each. The third and fourth rows refer to the platoon's fire support plan. The last row establishes various checkpoints to be used for any emergency administrative or logistical activities that must be conducted.

The columns of the matrix are used to reflect different phases of the operation in sequence from start to finish. For simplicity, I define these phases by using established graphic control measures (phase lines, objectives, assembly areas, lines of departure, and the like). The number of columns therefore depends upon the number of graphic control measures defined in the task force operation order. (If necessary, the platoon leader may designate supplementary control measures to add greater detail to his platoon plan.)

The first two rows of the matrix, Sections A and B, detail the platoon leader's scheme of maneuver for the two gun sections as they progress through the operation. Information that is relevant to this portion of the concept of operation includes each planned firing position and the associated direction of fire. The firing positions are recorded in the upper left corner of each box. These locations can be noted as actual grid coordinates or can refer to symbols found on the operation overlay. For example, FP 1-1 would refer to Firing Position 1-1, which is marked by the heavy mortar symbol on the overlay. The planned direction of fire is recorded in the lower right corner of each box and separated from the firing position location by a diagonal line.

	AA TO LD	LD TO PHASELINE 1	PHASELINE 1 TO PHASELINE 2	PHASELINE 2 TO PHASELINE 3	PHASELINE 3 TO OBJ. RED	OBJECTIVE RED	BEYOND PHASELINE 4
A SECTION	FP1-1 / 5000	FP 1-2 / 4400	FP 1-2 / 4400	FP1-3 / 5000	FP 1-3 / 5000	FP 1-3 / 5000	FP 1-3 / 5000
B SECTION	FP 2-1 / 5100	FP 2-1 / 5100	FP 2-2 / 5600	FP 2-2 / 5600	FP 2-3 / 6200	FP 2-3 / 6200	FP 2-4 / 6200
PRIORITY OF FIRES A / B	Co A / Co A	Co A / Co A	Co A / TmD	TmC / TmC	Co B / TmD	Co B / TmD	Co B / TmD
PRIORITY TARGETS A / B	AB1002 / AB1001	AB1002 (1) / AB1001	AB1003 (2) (3) / AB1004	AB1006 / AB1005	AB1008 / AB1007	AB1008 / AB1007	AB1009 / AB1010
CHECKPOINTS IN EFFECT	1 / 1	2 / 1	2 / 3	4 / 3	4 / 5	4 / 5	4 / 6

NOTES:
(1) POSSIBLE ENEMY COUNTERATTACK ROUTE
(2) KNOWN ENEMY COMBAT OP
(3) PLANNED OBSTACLE BREACH SITE

HE/WP IN EFFECT
HE DELAY IN EFFECT
400M SMOKE SCREEN 20-MINUTE DURATION

The third and fourth rows of the matrix —Priority of Fires and Priority Targets— refer to the platoon fire support plan. Like the scheme of maneuver, the fire support plan must be made to reflect the evolving nature of the task force plan as it progresses. Normally, in a heavy platoon with two fire direction centers, each gun section can be allocated one priority fire assignment and one priority target mission. (In defensive operations, priority targets also include final protective fire missions.) Each box in these rows is divided by a diagonal line. The assignments and missions for Gun Section A are recorded in the upper left corner of the box while the assignments and missions of Gun Section B are shown in the lower right corner.

The last row, Checkpoints in Effect, is used to define checkpoint locations for emergency resupply, friendly unit coordination, casualty evacuation, prisoner evacuation, and damaged vehicle collection within the platoon. In the event split section operations require the establishment of separate checkpoints, each box can be subdivided by a diagonal line similar to that in the boxes in the rows above.

The offensive execution matrix included here illustrates how a matrix of this kind is prepared. Because the offensive overlay includes tentative mortar firing positions identified along the unit's axis of advance, the mortar platoon execution matrix must support this plan.

The columns along the top of the matrix refer to the movement of friendly forces through the attack in relation to the established control measures. The actions of the mortar platoon—that is, displacement criteria and fire support requirements—are therefore driven by the actions of the task force.

For example, as the lead element of the task force crosses Phase Line 2, Gun Section A will reposition to FP 1-3 and shift

priority fires to Team C while Gun Section B will continue to fire from FP 2-2 and will shift priority fire to Team C as well. Both sections shift priority targets to AB 1006 and AB 1005 respectively. Finally, Section A would establish CP 4 as its new checkpoint in effect.

A defensive execution matrix would also reflect the plan as shown on the defensive overlay, but the displacement criteria and fire support requirements would now be driven by the actions of the enemy forces and not by those of the friendly forces.

It is important to note that this matrix format is flexible and can be used in circumstances other than purely offensive and defensive situations. An offensive execution matrix, for example, can be modified and used in planning for the possibility of a meeting engagement or an enemy counterattack. Likewise, a defensive execution matrix can be modified to account for a planned friendly counterattack. For greater detail on the platoon leader's plan, notes referring to different portions of the matrix can be added in the margin.

In a combat environment dominated by the fast pace of mechanized warfare, the mission of the heavy mortar platoon has become increasingly complex. This mortar platoon execution matrix will enable a platoon leader to make the most of his *planning time* and help him execute the platoon plan in battle.

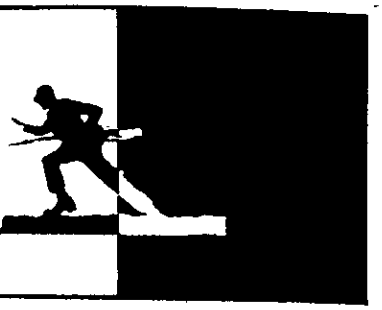
My experience with this matrix has demonstrated that it not only saves valuable time but also helps greatly during the oral presentation of the order to subordinates. A gun section leader who has a copy of the task force graphics, a target list, and a completed mortar platoon execution matrix has everything he needs to execute his mission of providing close indirect fire support to the unit. This is especially critical when his communications go bad and he must make decisions based on incomplete information.

A heavy mortar platoon leader who uses this matrix in his orders process is better able to plan and prepare for his mission. In addition, it will be valuable to his subordinates in executing these plans and will greatly contribute to the overall success of the platoon's mission in combat.

Lieutenant Craig S. Linderman is an infantryman assigned to the 3d Battalion, 69th Armor, 24th Infantry Division. He has led Bradley, tank, and heavy mortar platoons and is now leading a support platoon. He is a 1986 ROTC graduate of Syracuse University.

SWAP SHOP

ENLISTED CAREER NOTES



11M SOLDIERS TO KOREA

The Infantry/Armor Branch of PERSCOM is looking for volunteers in MOS 11M who want assignments to Korea as members of the two new Bradley fighting vehicle battalions that are scheduled to be fielded in Fiscal Year 1991. These 11M assignments to Korea will begin with a report month of December 1990.

The Army plans to issue the M2A2 Bradley fighting vehicle to the two mechanized infantry battalions now serving in the 2d Infantry Division. This fielding will be a transitional program in which all the soldiers in the two battalions will be MOS-qualified 11Ms before the battalions receive the new Bradleys.

Once each battalion receives the new vehicles, the soldiers will go through a 22-day mini-New Equipment Training (NET) (currently referred to as M2A2 Bradley rollover). Upon completion of this training, the MOS 11M soldiers will have the skills necessary to maintain, operate, and fight the new Bradley.

MOS 11M soldiers in the ranks of private through master sergeant who are currently in the continental United States and would like to volunteer for an assignment to one of these battalions may do so by submitting a DA Form 4187, Personnel Action, and DA Forms 2A and 2-1, Personnel Qualification Record, as enclosures through their personnel service centers to Commander, PERSCOM, ATTN: TAPC-EPK-I, 2461 Eisenhower Avenue, Alexandria, VA 22331-0452.

Any 11M soldiers now serving in Europe who would like follow-on assignments to Korea may submit a DA Form 4187 and DA Forms 2A and 2-1, requesting inter-theater transfers to Korea, through their PSCs to the 1st Personnel Command. PMOS 11M NCOs in the ranks of sergeant through master sergeant will be eligible to participate in the Homebase and Advanced Assignment Program in accordance with Army Regulation 614-200, Enlisted Personnel Management System.

Soldiers who have questions concerning this program may contact Infantry /Armor Branch, SFC Williams or MSG Crivello at AUTOVON 221-8056 or commercial (703) 325-8056.

RECLASSIFY TO 11M FOR ASSIGNMENTS IN EUROPE

Soldiers who hold Primary Military Occupational Specialty (PMOS) 11B, Infantryman, can increase their chances of being assigned to Europe by reclassifying to PMOS 11M, Fighting Vehicle Infantryman.

Soldiers who reclassify will attend a six-week Bradley Fighting Vehicle Course at Fort Benning. This course is designed for soldiers on orders to a unit equipped with infantry fighting vehicles (IFVs) but who have not yet received IFV-related training.

The only overseas areas an 11M NCO can be assigned to are Germany and Korea. Currently, 11M NCOs returning from overseas may be assigned to Fort Benning and Fort Stewart, Georgia; Fort Hood, Texas; Fort Irwin, California; and Fort Riley, Kansas. In the future, 11M NCOs will also be assigned to Fort Carson, Colorado, and Fort Polk, Louisiana.

Eventually, all Active Army mechanized infantry units will be equipped with Bradley infantry fighting vehicles.

PMOS 11B soldiers will be assigned primarily to light infantry divisions.

For additional information, interested NCOs may contact the U.S. Total Army Personnel Command's Infantry Branch at AUTOVON 221-8056 or commercial (703) 325-8056.

DRILL SERGEANT PROGRAM

A drill sergeant who is considering extending for a third year after serving for two years in that duty should be sure he understands, before he makes the commitment, what that added year of service means in terms of his future assignments.

Army Regulation 614-200, Selection of Enlisted Soldiers for Training and Assignment, paragraph 8-21c states: "Active Army soldiers who extend their 24-month tour of drill sergeant duty for an additional 12 months will, on completion of a 36-month tour of drill sergeant duty, be reassigned to the overseas location of their choice provided a requirement exists at such location. Actual reassignment date is subject to current PCS criteria."

When a drill sergeant requests an extension for a third year, he should list on a DA Form 4187, Personnel Action, his three overseas locations of preference. Once the form arrives at PERSCOM, it will become a permanent part of the *NCO's Career Management Information* File, which is used for future assignment considerations.

BIFV MASTER GUNNERS NEEDED

The Infantry/Armor Branch at PERSCOM is seeking qualified MOS 11M NCOs who want to attend the Bradley Infantry Fighting Vehicle (BIFV) Master Gunner Course at Fort Benning on temporary duty enroute to their next duty station.

NCOs who attend this course will receive instruction on the Army maintenance management system, turret operations and maintenance, weapon system training, preliminary gunnery, and target engagement. Also included in the pro-

the file, or none at all, some of the more common problems with photographs are the following:

- Uniform wrinkled or ill-fitted. (Watch those trouser creases.)
- Moustaches that appear too long or wide. (Three out of four photos of soldiers with moustaches fit in this category.)
- Ribbons or badges improperly placed or missing (marksmanship badge, in particular).
- Incorrect number of service stripes.
- Infantry cord and blue disks (not to be worn).
- Trouser and sleeve length.
- Edges of soles of low-quarter shoes scuffed or scarred.

After you have had a new photograph taken, look at it carefully before submitting it. Does the person in it look like a professional who cares about his career? Even if your answer is "yes," get a second opinion, preferably from your next senior NCO.

PROMOTIONS—BE ALL YOU CAN BE

There has been much talk recently about force reductions and how young soldiers in particular may become discouraged about their chances of being selected for promotion to sergeant. Even during these austere times, however, there is hope.

The specialists and corporals now on promotion lists, and those who will be considered by future boards, for example, actually control more than 500 promotion points out of the maximum 1,000 points that can be awarded to them in accordance with DA Form 3355, Promotion Point Worksheet.

If you are in this category, the following are the areas you may want to work on:

- **Skill Qualification Test.** You can be awarded up to 200 promotion points by scoring 100 percent on your MOS SQT. To do this, you will probably have to spend some off-duty hours studying the Soldier's Manual for your particular MOS, but this will undoubtedly pay dividends.
- **Military Education.** You can be awarded up to 150 promotion points in this area. Points are awarded for successful completion of NCO courses such as the Primary Leadership Development Course (PLDC) and the Basic Noncomissioned Officer Course (BNCOC). You can also earn points for successfully completing other Army courses of one week duration or longer. The most lucrative course of all is the Army Correspondence Course program through which you will earn one point for every five credit hours you complete. These courses are free of charge.
- **Civilian Education.** You can be awarded up to 100 promotion points in this area. Points are awarded for business, trade school, or college courses at the rate of one point for each semester hour earned.
- **Military Training.** You can be awarded up to 100 promotion points in this area—50 points for your most recent Expert qualification score with your assigned individual weapon, and 50 points for scoring 300 points on your most recent Army Physical Fitness Test (APFT).

If you take advantage of the opportunities offered you in the areas over which you have direct influence, you can greatly reduce the time you spend on the promotion list waiting for promotion to sergeant.

PROFESSIONAL DEVELOPMENT AND CAREER MANAGEMENT

The role of an Infantry Career Advisor is two-fold. Primarily, he is responsible for the professional development of each infantry noncommissioned officer (NCO). But he is also responsible for managing those NCOs' careers as well as numerous other duties that affect the total force.

For instance, career advisors nominate NCOs for duty as recruiters, drill sergeants, observer-controllers, ROTC instructors, and other special management assignments. In addition, they act as consultants to the civilian assignment manager and are instrumental in the final preparation of each and every NCO assignment.

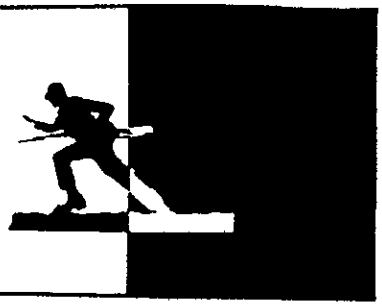
Career advisors assure the professional development of their NCOs by seeing to it that they receive varied assignments and increased responsibility. They also identify NCOs who require special training for their next assignments and ensure that those NCOs receive that training, usually on a TDY enroute basis. Some of the more common of these are the Infantry Mortar Platoon course, the TOW Trainer Course, the Joint Firepower Control Course, and the Bradley Master Gunner Course.

A career advisor has two ways of establishing an accurate picture of an NCO's qualifications and career progression. One is from the Enlisted Master File (EMF), the other from the Career Management Information File (CMIF). If the NCO's CMIF contains DA Forms 2A and 2-1, Personnel Qualification Record (PQR), an updated official photograph, and correct copies of the most current DA Form 2166-7, NCO Evaluation Report, the advisor can obtain a true assessment of the NCO's career. As a result, the NCO will be more competitive for nominative assignments or school selections.

It is the soldier's responsibility to make sure the information on his PQR is correct during the annual records update conducted by his local personnel service center. Although career management is the responsibility of the career advisors at PERSCOM, career development begins with the individual soldier.

Infantry NCOs who have questions about how their career advisors can help them with their next assignments may call Infantry/Armor Branch at AUTOVON 221-8056/9399 or commercial (703) 325-8056/9399. The mailing address is Commander, PERSCOM, ATTN: TAPC-EPK-I, 2461 Eisenhower Avenue, Alexandria, VA 22331-0452.

OFFICERS CAREER NOTES



ARMY ACQUISITION CORPS

The Army Acquisition Corps (AAC) offers a unique opportunity for officers to obtain fully funded master's degrees with follow-on tours in acquisition management.

Officers in Year Group (YG) 1984 will be considered for integration into the AAC by a PERSCOM board scheduled to convene 16 October 1990. Any officer in that year group who wants to be considered should contact Infantry Branch immediately for details.

In addition, there are still openings in the AAC for officers in Year Groups 1980 through 1983. Officers who were not previously considered for AAC will also be considered by the October board. Any officer in these year groups who wants to be considered should call Captain Jim McNulty at AUTOVON 221-5520; commercial (703) 325-5520.

ADVANCED CIVIL SCHOOLING

Each year during September and October, assignment officers screen the officers in a year group for advanced civil schooling (ACS). Candidates are selected on the basis of their duty performance and their academic background, discipline, and grades. Year Group 1984 officers will be considered this fall for ACS programs that begin in 1991.

Officers are selected for ACS to support Army requirements in specific functional areas, the U.S. Military Academy instructor program, and other programs that require advanced degrees.

Officers who are not in YG 84 will not be routinely considered. Nevertheless, any officer who is available and has enough time to complete an 18-to-24-month advanced civil schooling program and a 3-to-4-year utilization tour is encouraged to contact his assignment officer.

Officers who are interested in ACS should make sure copies of their undergraduate transcripts are on file at Infantry Branch and that they take the Graduate Record Examination early enough for the results to be available when their files are screened.

Further guidance regarding advanced civil schooling is available in DA Pamphlet 600-3 and Army Regulation 621-1, or from Captain McNulty at AUTOVON 221-5520, commercial (703) 325-5520.

SHORT TERM EXTENSIONS

Year Group (YG) 1988 officers with one year on active duty will be considered by the 1990 Conditional Voluntary Indefinite (CVI) and Regular Army probationary board, which is tentatively scheduled for February 1991.

In preparation for this board, all U.S. Army Reserve officers in YG 88 with dates of rank of 1 October 1987 through 30 September 1988 who have separation dates of 1 October 1990 through 30 July 1991 have been given short-term extensions by the Department of the Army until 31 July 1991.

An officer who wishes to remain on active duty past his obligation date to be seen by this board does not need to submit any letters, documents, or other correspondence. His new expiration date has already been revised in the Officer Master File at PERSCOM.

An officer who *does not* want to extend but wants to separate on his original separation date must decline in writing through his chain of command to PERSCOM and his declination must be approved. An officer should thoroughly consider a decision to decline the extension, because a later reapplication is not likely to be approved.

Local MILPOs will provide the first colonel in the chain of command a roster of all the officers covered by this program so that he may request the removal of any officer he feels does not warrant extension because of substandard performance or misconduct.

The appeal authority for an officer is the first general officer in his chain of command. Both the removal recommendation and the completed appeal, if the officer requests one, will be forwarded to Commander, PERSCOM, ATTN: TAPC-OPE-I.

First lieutenants are also reminded of their obligation to submit DA photos within 60 days of their promotion dates.

ASSIGNMENT OPPORTUNITIES

Infantry Branch at PERSCOM has several assignment opportunities for branch qualified captains beginning in March or April 1991. The locations of these assignments include St. Albans, West Virginia; Fort Collins, Colorado; Los Angeles, California; Grand Rapids, Michigan; Lexington, Virginia; and Nashville, Tennessee.

Additionally, there are several personnel exchange program (PEP) positions in South and Central America beginning in the summer of 1991. The positions require officers with a minimum proficiency of 2-2 in Spanish. Language training programs are available before those dates for officers who do not meet the language proficiency requirements.

For more information, anyone who is interested may contact Captain McNulty at AUTOVON 221-5520; commercial (703) 325-5520.

FY 90 MAJORS BOARD

The convening date for the Fiscal Year 1990 majors promotion board, Army competitive category, has been changed to 16 October 1990. Zones of consideration for this board are as follows:

- Above the Zone—1 June 1984 and earlier.
- Promotion Zone—2 June 1984 through 1 May 1985.
- Below the Zone—2 May 1985 through 1 September 1986.

Officers are reminded that they should make sure their officer record briefs (ORBs) are properly updated through their local military personnel offices. Officer Evaluation Reports (OERs) that are received before 9 October 1990 and that are error free will be made available to the selection board. The "through" dates for promotion OERs will be 10 August 1990.

Memorandum communications to the board will be accepted from all officers in the zone of consideration who want to submit correspondence to the president of the board. They should be addressed to President, Major Army Competitive Category, Promotion Selection Board, ATTN: TAPC-MSB, 200 Stovall Street, Alexandria, VA 22332-0441. They must arrive before the board's convening date and must be free of errors. Memorandums should include only matters that are deemed necessary for the board to know in considering an officer's record.

Memorandums that the board considers will become matters of record for the board only and will not be filed as an official part of an officer's Official Military Personnel File.

BRANCH QUALIFIED MAJORS

The Army's requirements for branch-qualified Infantry majors have increased to the point that they exceed the number of officers who have finished 48-month tours.

"Branch qualification" at the rank of major is defined as having served at least 12 months as either a brigade or a battalion S-3 or a battalion executive officer, and having completed senior service college level schooling either in residence or by correspondence.

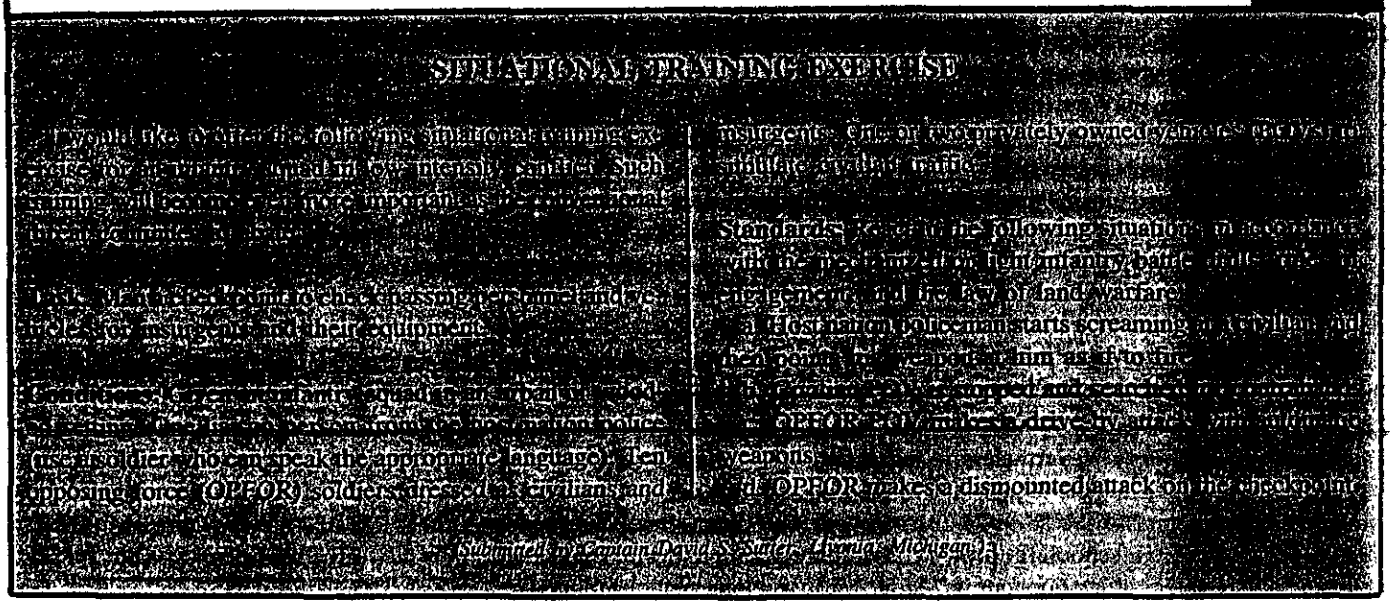
Most of the high-priority assignments are now on the Department of the Army staff and at the National Training Center (Fort Irwin, California) or the Joint Readiness Training Center (Fort Chaffee, Arkansas).

The average amount of time an officer remains at a troop location is between 24 and 36 months in the continental United States (CONUS) and between 30 and 36 months outside CONUS.

This increased movement of Infantry officers before they complete their stabilized tours has been a matter of concern to individual officers and their commanders. The most common concern is that a major who serves only 12 to 18 months in a branch-qualifying position will be at a disadvantage when it comes time for his records to appear before a battalion command selection board. An analysis of the most recent battalion command board showed that the board selected officers on the basis of their performance while assigned to S-3 or XO positions and that the length of time spent in a position was a lesser factor.

Because of the demand for officers of proven ability to fill "away from troops" assignments, detailed screening and staffing must be conducted to locate officers with potential for promotion and command. Officers who perform well in these duty positions will improve their chances of being selected for promotion to lieutenant colonel or for battalion command.

SWAP SHOP



Submitted by Captain David S. Slater, Howell, Michigan

Corps' defensive line and then rolled up the 8th Army's right flank.

(2) He notes that S.L.A. Marshall's book, THE RIVER AND THE GAUNTLET, contains a number of major errors. He corrects them, and warns that Marshall's book should be used "always with discretion."

(3) He believes the near destruction of the 2d U.S. Infantry Division during its withdrawal from Kunu-ri to Sunchon on 29 and 30 November 1950 need not have happened if the U.S. IX Corps and 8th Army commanders and staff officers had been on top of the situation. He also believes the 2d Division commander, Major General Laurence B. Keiser, was made the scapegoat for what did happen.

(4) He feels the 8th Army's withdrawal from North Korea was more a "big bugout" than a "skillful retreat," and holds the higher commanders in Korea directly responsible for the 8th Army's sorry performance during that withdrawal.

This is not an easy book to read. It is filled with tactical details but lacks the maps needed to understand them. But it is definitely worth the effort and all Infantrymen can learn much from it. This is generally true of all of Appleman's histories, even if he seems to favor (or find fault with) certain units and commanders.

• THE HOLLOW ARMY: HOW THE U.S. ARMY IS OVERSOLD AND UNDERMANNED. By William Darryl Henderson. Contributions in Military Studies Number 93 (Greenwood Press, 1990. 184 Pages. $39.95). The author, a retired U.S. Army officer, does not believe today's Army, because of its enlisted component, is a quality one. He feels, rather, that the Army "has, in fact, not risen above mediocre performance levels" particularly in the combat arms. He offers several reasons: There are too few combat arms soldiers overall and certainly too few in the higher mental categories; the enlisted personnel management system seemingly penalizes the combat arms NCOs while rewarding those in the administrative MOSs; the creation of "staff NCOs" has reduced the number of good NCOs available for troop duty; and the present centralized and bureaucratic personnel system has not only drawn away even more NCOs from troop duty, it has almost totally destroyed a small unit commander's prerogatives. This has prevented the Army from forming cohesive, properly trained and led units, and has caused unnecessary personnel turbulence. He offers a number of solutions, some of which can be guessed at from reading the above. But read the book and see what you think of his arguments.

Finally, we offer you our thoughts on several recently published books outside the field of U.S. military history:

• THE BATTLE OF BRITAIN. By Richard Townshend Bickers, *et.al.* (Prentice Hall, 1990. 208 Pages. $29.95). This year marks the 50th anniversary of the Battle of Britain, the great aerial contest between Great Britain's Royal Air Force and Germany's Luftwaffe between 8 August 1940 and 31 October 1940. (Some British historians gives 10 July 1940 as the start date, while the Luftwaffe considered 11 May 1941 the end date.)

This book is a glowing tribute to those who took part in this epic battle regardless of job or position. The greatest emphasis is on the RAF and its fighting squadrons. It is filled with photographs, drawings, reproductions, tables, and maps. Post-war investigations proved that the RAF suffered 915 losses, the Luftwaffe, 1,733.

• STRATEGIC SURVEY, 1989-1990. Published by Brassey's for the International Institute for Strategic Studies, London (Brassey's, 1990. 240 Pages. $21.95, Softbound). The information described and analyzed in this fine publication was current as of late March 1990. Accordingly, some of the material has been overtaken by events. But there is no better source of information on the major world happenings in 1989, which, of course, were dominated by the events in Eastern Europe and the Soviet Union. To the editors of this volume, one of the most serious problems facing the world is the veritable flood of refugees that has washed over many countries and that now "has become a major consideration in the security affairs of all states."

• STRATEGIC ATLAS: A COMPARATIVE GEOPOLITICS OF THE WORLD'S POWERS. A Revised and Updated Edition. By Gerard Chaliand and Jean-Pierre Rageau. Translated from the French by Tony Berrett. Maps by Catherine Petit (Harper and Row, 1990. Perennial Library. 224 Pages. $17.95, Softbound). This atlas, different in many respects from others, is an outstanding one. It can be used as a perfect complement to the strategic survey mentioned above, or it can easily be used alone. It presents basically the same material, but in an entirely different format. The maps, drawn from various projections, show graphically the importance of the world's oceans, something usually overlooked by soldiers. Overall, the atlas is valuable for the information it contains on such subjects as the geopoliticians and their theories, economic data and population factors, and the military balance. It is an outstanding piece of work that all Infantrymen should know about.

• UNITED STATES MILITARY FORCES AND INSTALLATIONS IN EUROPE. By Simon Duke. Published for the Stockholm International Peace Research Institute (Oxford University Press, 1989. 435 Pages. $68.00). It is difficult to realize just how extensive the U.S. military presence is in Europe. This book provides the background for understanding the scope of that presence by tracing the history of the bases in each of the 14 European countries that host various kinds of U.S. facilities. It also provides, where possible, the U.S.-host nation basing agreements for each country. In several annexes, the author offers statistics on the U.S. forces now in Europe, discusses the organization of the U.S. Army and U.S. Air Forces in Europe, outlines the major weapon systems used by U.S. forces in Europe, and provides a brief bibliographical note. This is an outstanding reference work, one that will prove as valuable to the future historian as it is to today's.

• WEAPON SYSTEMS, 1990: UNITED STATES ARMY (USGPO S/N 008-020-01199-1. 1990. 188 Pages. $13.00, Softbound). This is the Army's annual review of its major weapon systems, many of which are now in production, while others are in different stages of development. The systems are arranged according to specific Army mission areas such as close combat, air defense, fire support, combat support, and the like. Each system is described by its mission, characteristics, and program status; where appropriate, any Soviet counterparts are also described.

Now here are a number of our longer reviews:

INTERVENTION IN THE CARIBBEAN: THE DOMINICAN CRISIS OF 1965. By General Bruce Palmer, Jr. (University Press of Kentucky, 1989. 226 Pages. $23.00.

MILITARY CRISIS MANAGEMENT: U.S. INTERVENTION IN THE DOMINICAN REPUBLIC, 1965. By Herbert G. Schoonmaker. Contributions in Military Studies Number 95 (Greenwood Press, 1990. 152 Pages. $37.95). Both books reviewed by Colonel James G. McConaughy, United States Army Retired.

According to Herbert Schoonmaker, President Lyndon Johnson told the then chairman of the Joint Chiefs of Staff, General Earl Wheeler, to send "the best general in the Pentagon" to Santo Domingo when the 1965 revolution, with possible communist overtones, threatened U.S. lives and political interests. General Wheeler picked Lieutenant General Bruce Palmer, then Army Deputy

Chief of Staff for Operations, and the XVIII Airborne Corps for the operation.

These two books describe the problems facing what became the DOMREP peacekeeping mission and the solutions it and its umbrella Inter-American Peace Force achieved.

Schoonmaker has produced a work worthy of the Harvard Business School. He divides the events into component parts and than dissects each with a sharp knife, all the while maintaining a narrative theme.

General Palmer, on the other hand, paints his portrait of the affair with lights and shadows—warts and all—as befits his part in it. And he alone possessed a research treasure, although he does not mention it in his book: the taped record of each day's events in DOMREP that he had dictated each night before he retired.

A reader of either book comes away impressed with the military services' organizational functions and the political and diplomatic supervision provided. Despite an initial uncertainty of the exact mission or its political dimensions, the controls and resource allocations provide the focus for Schoonmaker's study. Both books do note two glaring deficiencies that existed at the beginning of the operation: poor intelligence and less-than-good communications.

Thus, the operations plan placed the 82d Airborne Division's night drop zone on a coral reef. Obviously our military attaches had not inspected the area before designating it. Disaster was avoided when the arriving planes were directed to land their troops and equipment at the San Isidro airfield, which had recently been secured by friendly Dominican Army forces.

In addition, our top military advisory group officers were absent—they were attending a conference in Panama— when the coup began.

The available intelligence that was developed suffered from reporting delays because of defective communications. Person-to-person helicopter flights were used in place of absent radio equipment, although this defect was soon corrected by teams from the CIA, FBI, and Army Special Forces. These teams were able to confirm that the only insurgency was in the city of Santo Domingo itself.

Both authors pay deserved tribute to the Organization of American States, which assumed overall responsibility for the effort. This led to the establishment of a provisional government, followed by the OAS-monitored presidential election of 1966. But praise should also be given to the humanitarian efforts exerted by the men of the airborne division.

General Palmer's last chapter on Caribbean realities facing the United States is thoughtful, but it predates our Panama intervention and the Nicaraguan election.

Since the demise of the Warsaw Pact, these books have become more relevant as our military and diplomatic energies now center on long range hemispheric planning. Schoonmaker's book provides the broader base as the ultimate generic after action report. Its disciplined categories comprise the crisis management implications of almost any military operation. But Palmer's book is more fun to read.

STORMTROOP TACTICS: INNOVATION IN THE GERMAN ARMY, 1914-1918. By Bruce I. Gudmundsson (Praeger, 1989. 210 Pages. $39.95). Reviewed by Colonel David A. Rolston, United States Army.

The author's main point is a simple one: Germany's blitzkrieg tactics at the beginning of World War II should not have surprised the military leaders of the other European countries. He believes that the "new" German tactics were not developed overnight but were, in fact, the result of an evolution that had begun during World War I. He also argues that these tactics did not result from doctrinal developments at high levels within the German Army command but evolved from the bottom up as small unit commanders sought innovative ways of overcoming the stalemate of trench warefare.

As a result, new equipment and organizations—the stormtroops and the modified jaeger battalions—came into being. As the new tactical innovations were refined, the organizations were modified as necessary. A key role in their success was the elevation of the noncommissioned officers to new positions of importance. They now became true leaders who led from the front and had individual missions to plan and execute.

The author does a good job of explaining the evolution of stormtroop tactics—they did not first appear in 1918, as many writers claim—as well as the development and employment of the weapons that were used. His book gives a better understanding of how tactics and doctrine evolve and an appreciation of the benefits of an open-minded approach to solving a tactical problem. It is recommended reading for all military professionals.

STRANGE GROUND: AMERICANS IN VIETNAM, 1945-1973, AN ORAL HISTORY. By Harry Maurer (Henry Holt, 1989. 633 Pages. $29.95). Reviewed by Doctor Joe P. Dunn, Converse College.

This book can be added to the growing list of oral histories by such individuals as Al Santoli, Joe Klein, Mark Baker, Wallace Terry, Kathryn Marshall, Myra MacPherson, and others. Although it claims to be the "first complete Vietnam story" from the end of World War II through the end of the long war, it is neither better nor worse than most of the others.

The interviews with 67 individuals cover the requisite types who experienced the war—grunts, generals, protesters, policymakers, prisoners of war, women, civilians, and many others. The interviews are longer than those in some of the other books.

As with many who undertake such projects, the author was an anti-war protester and is now trying to understand the war and those who engaged in it. The selection is reasonably balanced.

Oral histories are fascinating and valuable sources for understanding the Vietnam war. I encourage reading as many of them as one can, and this is as good a place to start as any other.

HOW THE NORTH WON: A MILITARY HISTORY OF THE CIVIL WAR. By Herman Hattaway and Archer Jones (University of Illinois Press, 1983. 762 Pages. $24.95). Reviewed by Major Don Rightmyer, United States Air Force.

This is the type of book that should make readers stop and take notice. Its size alone makes it a bargain at the quoted price, but its real value is in its breadth and quality. It is also a book that should take its place in the curriculum of military academies, war colleges, and the personal libraries of all military professionals.

The authors are both noted Civil War historians. In this book they look not only at the obvious elements that one would expect from such a history but also at some of the less glamorous but equally vital issues such as logistics, combat effectiveness, and high command organization. A special appendix titled "An Introduction to the Study of Military Operations" should give even the novice military historian a better grasp of all that went on during the various military campaigns

Unlike many military histories, this one has numerous well drawn maps for virtually every battle, and these are most welcome additions to the fine narrative. The final plus of this volume is a complete bibliography that readily serves as an aid to those who wish to

pursue their reading and study on the Civil War.

The book reflects a vast amount of work and is a most welcome contribution to Civil War literature.

NAPOLEON'S MILITARY MACHINE. By Philip J. Haythornthwaite (Hippocrene Books, 1988. 200 Pages. $35.00). Reviewed by Colonel John C. Spence III, United States Army Reserve.

The author, a military historian with an interest in 19th Century Europe, has compiled a short but informative overview of Napoleon's military organizations, strategy, tactics, and important campaigns. Perhaps the glamor of this book makes it more appropriate for display on a coffee table. It is, nevertheless, a valuable addition to the extensive literature on 19th Century warfare.

The author provides ample space for his analyses of Napoleon's major campaigns and writes convincingly of Napoleon's adherence to the principle of unity of command. The student of military science and tactics will readily understand the organizational philosophy Napoleon adopted in creating units ranging from battalions to his grand army.

The book is replete with impressive and colorful artwork, and these alone almost justify the cost of the book.

LIC 2010: SPECIAL OPERATIONS AND UNCONVENTIONAL WARFARE IN THE NEXT CENTURY. By Rod Pascall (Pergamon-Brassey's Future Warfare Series. Published with the Institute of Land Warfare, Association of the United States Army. 1990. 166 Pages. $23.00). Reviewed by Colonel James B. Motley, United States Army Retired.

This book, arranged in nine chapters, is about low intensity conflict (LIC), a form of warfare, and special operations forces (SOF), a type of military organization, and how they will appear in the year 2010. The author, a retired U.S. Army officer and a former commander of the Delta Force, is well qualified to write on both subjects.

In his initial chapter, Pascall discusses a number of words and phrases commonly used in any discussion of LIC and SOF. (His definition of LIC is; "armed conflict for political purposes short of combat between organized forces.") He also describes the general structure of U.S., British, and Soviet SOF and contends that in the period 1990 to 2010 "the least amount of change will probably be seen in the British model."

He uses his succeeding chapters to discuss coming global changes, certain technological trends, special operations in high- and mid-intensity conflicts, and LIC from the perspective of terrorism and counter-terrorism, insurgency and counterinsurgency, and peacemaking and peacekeeping.

Pascall believes that the "expanding roles" for SOF "are not in low-intensity conflict" but "are to be found on the higher end of the conflict spectrum" and specifically in the realm of "war deterrence." However, he does foresee "an increasing incidence rate of low-intensity conflict." In some respects, he sends mixed signals.

The book's major shortcoming is the author's failure to acknowledge the precise role that SOF, especially SOF mobile training teams, and civil affairs units can play in Third World nation-building efforts.

Overall, the book will appeal to the specialist rather than to the general reader.

ONE DAY IN A LONG WAR. By Jeffrey Ethell and Alfred Price (Random House, 1989. 217 Pages. $18.95). Reviewed by Lieutenant Colonel Jack Mudie, United States Air Force Retired.

On 30 March 1972 the North Vietnamese Army began a massive attack by 12 divisions against the South Vietnamese military forces—the Easter Offensive. President Richard Nixon realized this was a desperate attempt by the North to discredit his Vietnamization program and apply political pressure in the forthcoming U.S. presidential campaign.

Four years earlier, President Lyndon Johnson had ordered a halt to the bombing of North Vietnam hoping that U.S. restraint would bring a negotiated peace. With the initial success of their newest offensive, however, the North Vietnamese leaders had no intention of continuing the talks or making any concessions. Despite the internal political pressures and an imminent meeting with Soviet Premier Leonid Brezhnev, President Nixon ordered that a new air campaign, named Linebacker, begin.

This book is a well-written description of the first day of the Linebacker operation—10 May 1972. The authors have done an excellent job of describing the tremendous amount of coordination necessary to carry out successfully an air attack that employed different types of aircraft from different services—the Air Force and the Navy—with different missions.

The importance of SAM (surface-to-air missile) suppression, early warning, search-and-rescue, airborne command and control, signal intelligence gathering, and aerial refueling are all covered. But the authors excel in their description of air-to-air combat between F-4s and MiGs and successful attacks with "smart" bombs.

Although Linebacker succeeded in returning the North Vietnamese to the Paris talks, within a few months they had regressed to their previous intransigent ways. President Nixon then ordered Linebacker II, the so-called Christmas bombing campaign that included attacks by B-52s against Hanoi and Haiphong for the first time. Less than a month later, the North Vietnamese finally signed the peace accords.

Neither author is a fighter pilot, but both are experienced fliers with an understanding of the highly technical requirements of modern air-to-air combat. As such they are able to describe quite clearly what happened without resorting to an excessive use of that unique fighter pilot lingo that often leaves readers impressed, but confused.

For that reason alone, it is a useful book for infantrymen who desire a better understanding of the other elements of tactical air warfare that occur beyond their immediate surroundings.

RECENT AND RECOMMENDED

1991 WARFARE WARRIORS CALENDAR: MILITARY HISTORY FROM 1776 TO THE PRESENT. By Raymond R. Lyman. Paladin Press (P.O. Box 1307, Boulder, CO 80306), 1990. $9.95, Softbound.

ANZIO BEACHHEAD, 22 JANUARY-25 MAY 1944. CMH Publication 100-10. First printed for the American Forces in Action Series in 1948. USGPO S/N 008-029-00199-3. 1990. 122 Pages. $11.00, Softbound.

THE STORY OF THE NONCOMMISSIONED OFFICER CORPS: THE BACKBONE OF THE ARMY. General Editors: Arnold G. Fisch, Jr. and Robert K. Wright, Jr. CMH Publication 70-38. USGPO S/N 008-029-00191-8. 1989. 236 Pages. $21.00, Softbound.

FIGHTING WORDS FROM WAR, REBELLION, AND OTHER COMBATIVE CAPERS. By Christine Ammer. Paragon House, 1989. 266 Pages. $10.95, Softbound.

DESERT WARFARE: FROM ITS ROMAN ORIGINS TO THE GULF CONFLICT. By Bryan Perrett. Sterling, 1988. 224 Pages. $24.95.

THE CHAIRMEN OF THE JOINT CHIEFS OF STAFF. By Willard J. Webb and Ronald H. Cole. Historical Division, Joint Chiefs of Staff. USGPO S/N 008-000-00541-9. 1989. 159 Pages. $16.00.

FIELD ARTILLERY AND FIREPOWER. By J.B.A. Bailey. The Military Press, Oxford. Combined Arms Library, Volume 1. 1989. 385 Pages. $29.50, Softbound.

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From The Editor

UNIT MAILING LIST

In the months and years ahead, a number of the units on our appropriated fund (free distribution) mailing list will be either deactivated or redesignated as other than Infantry units. This will be true in both the Active Army and the Reserve Components.

Therefore, if your unit is scheduled for deactivation, reorganization, or rebranching in the near future, or will move to another installation or armory, please let us know as soon as you can. In that way, we will not waste a lot of the Government's money in our attempts to find you.

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We are still seriously concerned with the dwindling number of paid subscribers, so much so that we are considering doing away with our subscription service fund. During the past four years, for example, we have lost approximately 800 paid subscribers, and we really cannot offer a good reason to explain that huge loss.

We ask our INFANTRY readers to urge their associates to subscribe to their professional publication. We have many fine articles on hand, and know that each and every one will contain lessons of value to all professional Infantrymen.

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