

Maintenance



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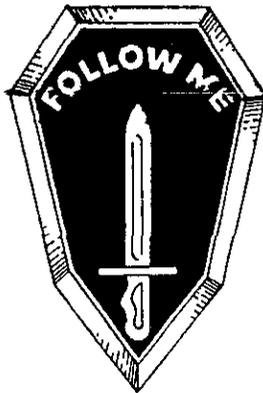
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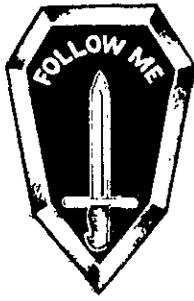
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Commandant's NOTE

MAJOR GENERAL KENNETH C. LEUER *Chief of Infantry*

TRAINING THE FORCE

In August 1987, the Chief of Staff of the Army, General Carl E. Vuono, approved revisions to FM 25-100, *Training the Force*. While the tenets of this field manual are not new, its new focus is worthy of particular note.

In the past, we have concentrated on teaching our doctrine, tactics, techniques, and procedures to our soldiers and leaders in our schools as well as in our units. But we have missed the key element in the process—teaching the trainers how to train to fight the doctrine—and the revisions to FM 25-100 now provide that needed link.

It is widely accepted that the next battlefield will be the most deadly known to man. The worst-case scenario is a NATO war in Europe in which we will fight out-manned and out-equipped. On the other end of the spectrum, the most probable mode of employment will be in extremely complex situations that will de-emphasize the direct application of combat power and stress instead the interaction of the military, political, social, and economic elements of national power.

In preparing to fight in such complex and dangerous environments, our leaders must understand the importance of training as they will fight. That is to say, our training must be doctrinally correct, must be performance oriented, and must have measurable standards. Most significantly, we must put our effort into training to a high standard those critical tasks and skills that will insure victory.

The greatest contribution that FM 25-100 makes is its emphasis on battle focus, which is developed by concentrating on a unit's wartime mission. The analysis of missions or contingency operations and the commander's intent and goals generate a restated mission and a mission essential task list (METL). Thus, the battle focus of a training program must be centered on the most critical battle tasks a unit can expect to be called

on to do.

Knowing *what* to train is only a portion of the road map that leads to a combat ready unit. It is critical also to establish a unit's current training status. The unit proficiency worksheet is a tool for displaying a unit's training status—*trained*, *needs practice*, or *untrained*. The intent is to develop units that operate within a band of excellence that eliminates peaks and valleys in training and ensures a unit's consistent, steady performance of battle-related tasks.

Over the past few years, Fort Benning has produced a large amount of doctrinal and training material. If a unit develops a thorough understanding of these products, it should have little difficulty in establishing a valid training program designed to correct its training deficiencies.

In addition, the Infantry School is now in the process of completing its ARTEP series of publications to give even more definitive guidance. The new ARTEP publications include drill books and mission training plans (MTPs).

Recently, the School published three interim drill books (ARTEP 7-17-10-DRILL, ARTEP 7-247-10-DRILL, and ARTEP 7-247-11-DRILL). Drills are critical to combat survival, are totally or largely independent of METT-T, require little leader action to execute, and are standardized for execution throughout the Army. They serve to bridge the gap between soldier's manual tasks and collective tasks. We are now consolidating these books into one drill manual for the infantry and are putting the non-drill events now found in the drill books into the squad and platoon MTPs.

The ARTEP MTP is a vital link in the training development process that must be fully understood before it can be properly used. These documents list the critical wartime missions or operations, mission outlines for these operations, and training evaluation outlines (TEOs) for the tasks.

Here at Fort Benning, we are completing a front-end analysis that will lead to the standardization throughout the infantry of critical wartime missions and operations. This standardization will permit the consolidation of tasks and will eliminate much of the confusion in the field.

The mission outlines graphically portray how these wartime operations are supported by specific collective tasks that are linked together as situational training exercises (STXs). These short exercises are designed specifically to correct deficiencies found in the evaluations of the critical wartime missions.

Each training evaluation outline is a statement of the task, condition, and standard for a collective task. Additionally, the TEO lays out the sub-tasks that combine to make that particular event a battle task. The other vital element that the TEO provides is guidance to the OPFOR, which will state the task the OPFOR must perform and will give the standard it must meet to ensure good training.

To produce a training program, therefore, a leader needs to select those tasks in which his unit has demonstrated a weakness and then combine them into STXs. An STX sequentially trains the tasks (TEOs) that a unit will do and also lays out the resources needed to make that training meaningful.

Since the major missing element in our institutions has been teaching the trainer how to train, we have begun a process that will integrate the principles of FM 25-100 into all the courses at the Infantry School. This process is best described by using the Infantry Officers Advanced Course (IOAC) as an example.

Early in the course, the students are briefed on the principles and procedures of FM 25-100. From there, the students must construct a mission essential task list for a typical unit. Next, they evaluate the unit's training status, using a simulated unit and unit proficiency worksheets. This METL and the training status are used throughout the course, and are applied during small group tactical instruction so that students can learn tactical fundamentals and principles. At the

conclusion of each phase of the tactics instruction, a student is required to develop a training plan that will correct the deficiencies listed on his unit proficiency worksheet and to accomplish the tactical task that has been taught.

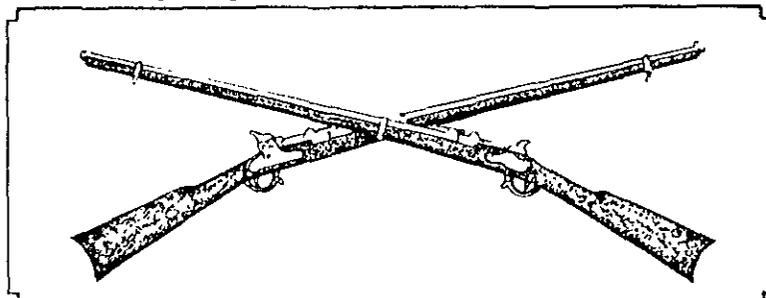
Each student develops an STX that will permit him to train for that task, and he can take that package with him for use at his next unit. This STX includes the task, condition, and standards, OPFOR requirements, and other resource requirements necessary for training.

Each student who attends a course at Fort Benning, from squad leader to battalion commander, will undergo a variation of this model. There is a direct, positive correlation between the model and all the courses taught at the School. In the Pre-Command Course, for instance, a prospective battalion commander analyzes his unit's METL and develops a training plan based on its actual status. The same process, when used for those attending the Light Leaders Course, combines the efforts of the battalion commander, his staff, and the company commander. All other courses also teach the student both to understand the procedure and to train his unit.

Another key aspect of the Infantry School's initiative is the development of standardized training literature throughout the Army. A collective front-end analysis procedure will be used for identifying the tasks that are common to several units, and tasks that are the same will be addressed as being the same for all units. Where there is a difference, we at Fort Benning will determine how it can best be addressed and provide the field with a solution. I must stress, however, that our primary emphasis is being placed on standardizing the doctrine and training literature to provide the best product to the field and to reduce the size and number of publications in circulation.

We at Fort Benning are committed to integrating the training management process into all of our courses and to bringing standardization to the infantry force.

We firmly believe that training is our most important function, and today's emphasis must be on *teaching the trainer how to train*.



INFANTRY LETTERS



BRADLEY COMMENTS

With all the publicity concerning the Bradley infantry fighting vehicle, I thought someone might want to hear the opinion of a Bradley platoon leader in Germany. Having been through two major field exercises and three gunneries, I believe I am qualified to air my views.

First of all, the Bradley is the best armored vehicle around for the purpose of allowing soldiers to fight mounted and for supporting them when they are dismounted. Despite all the negative publicity about the Bradley's survivability, I would never expose my platoon's Bradleys like sitting ducks and expect them to take *direct* hits from T-72s and survive. I know of no armored vehicle in the world that could do that.

The various proposals for improvements to the Bradley that I have read of—adding reactive armor, going from a 25mm to a 30mm main gun, installing a Stinger launcher on the turret, increasing engine horsepower, and improving the TOW system—may be well and good, and if so I heartily embrace them. But there are some common sense additions that I believe would not only increase the survivability of the vehicle and the soldier but would also make the vehicle more combat effective.

To begin with, the vehicle crew—commander, gunner, and driver—ought to be equipped with some type of sidearm, probably the 9mm Baretta. The reason for this is simple. Consider two examples:

Scenario 1: A20 and wingman are in the overwatch position in a clump of trees with a good field of fire covering the bounding element. Abruptly, an enemy soldier with an

RPG pops out of a bush 50 feet away. The Bradley commander cannot swing the turret because of trees on both sides. What does he do? He reaches under his armpit, yanks his pistol out of a shoulder holster, and shoots the enemy soldier.

It is not enough to rely on firing port weapons for this type of situation, especially when fighting mounted. Even if his dismount element is on the ground, the commander has a much better perspective from this position (presumably, the gunner is scanning through his ISU). The commander will have a much better reaction time than he would if he tried to alert someone on the ground who might not be able to see the threat.

Scenario 2: The crew is dismounted in a rear area, the driver is doing PMCS on the trim vane, and the commander and gunner are checking the weapon system. The driver hears a noise, looks up, and sees an enemy soldier with a satchel charge approaching the vehicle. The driver reaches for his 9mm.

Why isn't his M16 handy? It probably is, but it may be slung on his back, in the driver's hatch, or even three feet away on the trim vane. In both of these scenarios, the crew members need a weapon that

will let them respond quickly to any situation that threatens them or their vehicles. The M16 in such situations is not readily available, and it takes too long to engage an enemy with it in a fast reaction, short-range situation.

The second issue concerns the firing port weapons. To begin with, the M231 is a good weapon, and with a little practice a soldier can use it effectively. The problem arises in that every rifle team member ends up being responsible for two weapons—either a SAW, an M203, or an M16A2 in addition to his M231.

The solution to the problem of carrying extra weapons, and therefore adding to the necessary clutter in the hull, is to make the M16A2 adaptable to the firing port, thus eliminating the need for the M231. This M16A3, if you will, would ideally resemble the CAR-15. It would have a collapsible stock with a flange on the end of the barrel so it could be screwed into the port. The front sight would need to be placed to the rear of the flange, but the ribbed handguards could stay. The M203 could even conceivably be adapted in the same manner. The barrel would have to become longer, and the grenade tube would have to be modified. The SAW could also be modified to fit the firing port. (If nothing else, an adapter flange could be developed as a type of clip-on device much like that on the M16 bipod.)

The vehicle crew would still have rifles, of course, and these could be placed in an accessible, but out-of-the-way rack.

The suggestions presented here are not catch-all solutions to problems of Bradley survivability and efficiency. The sidearm issue could

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be handled very easily. The firing port weapon modifications would take some research and development but would be well worth it.

In this era of space age technology and improvements, it is always advisable to remember that in the end it is the combat soldiers who do the groundwork. If the infantryman's job is made simpler, he will be able to perform more efficiently.

STEWART W. BENTLEY, JR.
LT, Infantry
1st Battalion, 30th Infantry

ARTILLERY IN A LIGHT INFANTRY DIVISION

Reference the article "Light Artillery," by Lieutenant Carl R. Moore (INFANTRY, May-June 1987, page 20), the record needs to be set straight.

The 2d Brigade, 10th Mountain Division at Fort Benning, Georgia, is in a unique position in that its supporting artillery battalion has not yet been formed. Because of this—and in order to provide fire support personnel to integrate fire and maneuver and forward observers for the company and battalion mortars—the brigade has chosen to attach its assigned fire support personnel to their supported infantry units. Once the direct support artillery battalion is formed and the 2d Brigade moves to Fort Drum where the rest of the division is stationed, the fire support personnel will be reassigned to the artillery battalion, as is doctrinally done in the other light divisions.

Let me emphasize that the role and organization for combat of the field artillery does not change just because a unit is "light." The organization of the light division still provides a direct support artillery battalion for each brigade. When the 10th Division becomes fully fielded, there will be a direct support artillery battalion for the 2d Brigade. Until such time, one

should not confuse "light artillery" with a lack of artillery.

M.G. MacLAREN
LTC, Field Artillery
6th Infantry Division
Fort Richardson, Alaska

TOWARD EXCELLENCE

The commandant of the Infantry School, Major General Kenneth C. Leuer, in his first Commandant's Note in INFANTRY (July-August 1987, page 1), says, "Training is everything and everything is training." His predecessor, Major General Edwin H. Burba, Jr., in his final Commandant's Note (INFANTRY, May-June 1986, page 3) says, "If we can get the command and staff responsibilities performed in peacetime aligned with those performed during war, we will develop more positive command environments, better combat leaders, and higher unit readiness."

How can we simplify the massively complex task of achieving readiness for war in peacetime operations? The key is the alignment of the command and staff responsibilities of peacetime with those of wartime. We need only to look at the production of orders and guidance to see the solution. In wartime, commanders at every level use the military decision-making process and their battle staffs to produce orders. In peacetime these same people produce training schedules, inspection schedules, training circulars, letters of instruction, and many other well-intended pieces of paper and actions that dilute the commander's intent. In wartime, there are only orders and that "open and frank communication. . . without fear" that General Leuer understands as the "key to success."

General Burba, in his note, contends that the reason officers prefer wartime command to peacetime command is that the roles and missions divisions, brigades, and battalions are designed to perform be-

come blurred. It is an understatement to say that the "roles and missions" become blurred. The entire command environment is blurred by many things:

- The failure of staff members to present to their commanders alternative courses of action for training.
- The failure to consider "everything" as training when producing the yearly or quarterly training plan.
- The failure to synchronize the actions and activities of peacetime operations within the scope of the training plan. (Unity of Effort.)
- The failure to anticipate events or provide warning orders to subordinates.
- The failure of a commander to designate, sustain, and shift the main effort. (Too many priorities.)
- The failure to concentrate activities that distract from training into a precise time block or to combine functional system checks to complement and reinforce one another.
- The failure to understand the effects of over-supervision on soldiers, units, and leaders. (If a commander wants initiative, he and his staff cannot overreact to the failures of their subordinates.)

Commanders at all levels must realize that success comes from writing operations plans and orders and from requiring the same synchronized staff efforts during peacetime that they would require in wartime. They should take a hard look at all the recurring reports and inspections they require; they should make sure their peacetime SOP is in line with their true needs and not with their staff officers' need to look good; they should strive to save resources and simplify guidance with the same spirit they would show in saving lives in combat. Finally, they must be willing to accept risks and directly supervise their main efforts.

JAMES M. HINDMAN
MAJ, Field Artillery
Indianapolis, Indiana

INFANTRY NEWS



THE 1988 INFANTRY Conference is scheduled to be held at Fort Benning, Georgia, 4-7 April 1988. Additional information will be published as it becomes available. Meanwhile, points of contact at the Infantry School are Major Almero or Captain Knutson, Office of the Secretary, AUTOVON 835-5023/3611; commercial (404) 545-5023/3611.

DOCTRINAL MANUALS have been published recently by the Infantry School for light infantry squads/platoons, companies, and battalions.

Since these manuals are new instead of rewrites of existing manuals, they are not on the DA Form 12 used to distribute Army publications. Light infantry units and other users must specifically request them in the desired quantities on DA Form 17 from the U.S. Army Publications and Printing Agency in Baltimore.

The applicable publications are FM 7-70, Light Infantry Squad/Platoon (PIN 060698-000); FM 7-71, Light Infantry Company (PIN 062462-000); and FM 7-72, Light Infantry Battalion (PIN 061593-000).

Mission training plans are also being completed and will soon be available for distribution: Mission Training Plan for the Light Infantry Squad/Platoon (ARTEP 7-17-10-MTP); Mission Training Plan for the Light Infantry Company (ARTEP 7-17-30-MTP); and Mission Training Plan for the Light Infantry Battalion (ARTEP 7-17-MTP).

THE S-1 HANDBOOK—The Adjutant's Call—is scheduled for

distribution this fall. The book, TC 12-17, was written by former adjutants in a frank and honest manner, one captain talking to another, sharing his own experiences.

The book is specifically designed to help an adjutant succeed in his first 60 days on the job, but it will continue to serve as a ready reference throughout his tenure. It contains examples and checklists covering all areas of an adjutant's responsibilities, both in peacetime and in war.

Initial distribution of this training circular will be to each brigade- and battalion-sized organization in the Active Army, Army Reserve, and Army National Guard.

THE NEW COMBAT BOOT is the only one that will be issued to Active Army and Reserve Component personnel beginning 1 January 1988. The U.S. Army Natick



Research, Development and Engineering Center, designed the boot and recommended it for adoption

by the Training and Doctrine Command after testing six candidate boots in a four-month walk-off during 1983. The new boot went on sale in Army Military Clothing Sales Stores in July 1986.

It is a water resistant, black leather boot with a smooth, low gloss finish. Its deep lug tread sole is specially designed to provide superior traction and durability and to resist the accumulation of mud and stones. It features a quick donning speed-lace enclosure, a padded comfort collar, a resilient box toe, and a replaceable heel. The ventilating insole was re-engineered with a new three-layer honeycomb weave for loft and a non-woven nylon blend cover for more comfort.

The new boot fits 90% of all soldiers (male and female) because it is available in 133 sizes, 22 more than the old boot.

Unstructured field use tests of first article quantities were conducted at Fort Campbell, Fort Ord, Fort Polk, and Fort Carson in 1986. User surveys indicate this boot is superior to the old boot in comfort, fit, durability, and water resistance. It has met with high acceptance by the soldiers since its introduction in 1986. The price is \$52.57.

A PROTOTYPE ROBOTIC antiarmor system is being built for the Army—the teleoperated mobile antiarmor platform (TMAP). The award of a 14-month contract is part of a program to develop a small, agile antiarmor weapon system that can be remotely controlled by one infantry soldier. The system is lightweight, yet rugged enough to negotiate a battlezone to gain attack position against enemy armor.

TMAP is an earth-hugging, pitch



Artist's Concept of TMAP

articulated vehicle. Smaller than a golf cart, it measures about six feet long by four feet wide by four and one-half feet high. Its sturdy body is mounted on a four-wheeled chassis having an unusual diamond shape—one wheel in the front, one in the rear, and a twin-wheeled middle axle. This configuration and the segmented body let the vehicle maneuver over rough terrain and give the weapon platform stability.

From a remote location, a single soldier, using a portable control unit carried as a backpack, guides TMAP through fiber optics and radio frequency communication links. Once a target is selected, the soldier directs TMAP into position

and launches the attack.

The Infantry School, in conjunction with the Army Development Employment Agency (ADEA), is investigating the use of this system. As part of early user test and evaluation, force development test and evaluation will be conducted on TMAP during the first quarter of Fiscal Year 1988 at Fort Lewis, Washington.

TMAP is designed to employ various weapons and surveillance packages (to be contracted separately), thereby extending the engagement range of these systems while providing greater standoff protection for the operator.

THE NATIONAL INFANTRY Museum has received a diary kept by a United States Army corporal who served with the 339th Infantry in Russia in 1918 and 1919. This gift is especially valued because it gives information about a controversial episode in our military history about which little has been written. The diary begins on 14 July 1918 when the corporal left Camp

Custer and ends on 7 July 1919 with "Got that long looked for discharge paper today. This finishes my soldier days."

The daily entries are brief, but they illustrate the range of a soldier's thoughts and activities in that place and time. He mentions such personal things as letters from home (and lack of letters from home), pay day, YMCA and Red

Cross activities and services, boredom, and rare good baths. He notes days on which his unit was fired upon, casualties, moving to different locations, going to Vicker's machine-gun school, going out on "skees," and the winter snow and ice that closed the rivers until spring. He also copied some of the company songs in the back of the book.

An M16 Multiple Gun Motor Carriage has been transferred to the Museum from the Anniston Army Dcpot and an M9 pistol, one of the Army's newest weapons, from the Rock Island Arsenal. A Model 1917 helmet worn by a member of the 57th Infantry Philippine Scouts who was killed in the Battle of Longoskawayan Point on Bataan (28-31 January 1942) has been donated, as well as an M1 helmet and liner used in the Korean War. Stained glass panels depicting the shoulder patches of the 6th Infantry Division and the 44th Infantry Division have been hung with others already on display. Among other items of interest received recently are an officer's long "Beaver" overcoat and other uniform pieces, photographs, and postcards of Fort Benning in the 1920s, Honduran jump wings, and a number of good books.

In addition to these transfers and donations, the Museum recently purchased a U.S. Army Infantry Rifle Team trophy for 1905. A sterling and brass medallion, it lists the members of that team, the captain of which was Major Zerah W. Torrey of the 24th Infantry Regiment.

The display commemorating the 200th anniversary of the signing of the constitution has been expanded. The art gallery now contains 19 documents that relate problems faced by this country in its early days and the measures taken to overcome them.

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

or \$10.00 for a lifetime membership.

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

THE DIRECTORATE OF COMBAT Developments, U.S. Army Infantry School, has provided the following item:

JANUS. Much of the analysis in the Directorate is done with the aid of a computer simulation called JANUS, which is a high-resolution, interactive, stochastic computer program that simulates battlefield situations and conflicts. The JANUS model is not a training tool but an analysis system for testing the effectiveness of doctrine and tactics, force structure, and weapon systems.

Before JANUS, the Infantry School used three-dimensional terrain boards with the various weapon systems represented by miniatures. An hour of simulated combat could take as long as 60 hours of real time. With JANUS, one hour of simulated combat takes about three hours of real time. This kind of speed allows the study of many different alternatives. Moreover, with JANUS, many different types of terrain can be used.

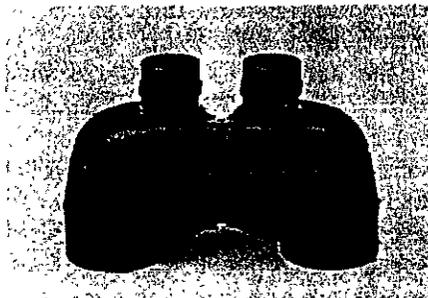
JANUS simulates the fighting of individual soldiers and armored vehicles in units from squad size to brigade. Each system is depicted on a computer graphic display with a specific symbol that denotes what type of system it is. The JANUS model accurately represents mounted and dismounted operations, Field Artillery, Engineer operations, weather, NBC conditions, obscuration, Army Aviation, and U.S. Air Force tactical air support.

Studies conducted on JANUS to date include the BFV (Bradley Fighting Vehicle) Block II COEA (cost and operational effectiveness and analysis), the BFV CV-CPOA

(combat vehicle-combat performance operational assessment), and the UAV O&O (unmanned aerial vehicle operational and organizational) Plan.

Although several other schools and centers have the JANUS model, the Infantry School is the only TRADOC school whose facility has been certified for major studies. The Infantry's ability to simulate how well present systems and tactics work and to evaluate the effectiveness of new systems and tactics give it an advantage in the development of an effective fighting force. (See also JANUS items in INFANTRY, March-April 1985, page 8, and January-February 1986, page 9.)

A U.S. ARMY BINOCULAR contract has been awarded for 72,000 M-22 7 x 50 military binoculars. The M-22 binocular incorporates the latest in optical technol-



M-22 7 x 50 Military Binoculars

ogy, including a target acquisition reticle and laser protection filters.

Deliveries are scheduled to take place between January 1988 and January 1991.

The U.S. ARMY INFANTRY Board has provided the following notes:

Bradley Fighting Vehicle System (BFVS) Advanced Survivability Test Bed (ASTB). Proposed survivability improvements to the Bradley Fighting Vehicle System are designed to counter the proliferation of modern threat weapons and their effect upon the survivability of the vehicle and its crew and squad. Because it

is apparently impossible to prevent all penetration by these threat weapons, survivability improvements are being designed to prevent the catastrophic loss of the BFVS and to provide increased protection for the crew and squad during operations.

During the period 15 June through 15 July 1987, the Board conducted a concept evaluation program (CEP) test of the effects of the BFVS Advanced Survivability Test Bed (ASTB) modification on the operational effectiveness of the BFVS. The ASTB modifications included increased armor protection applied to the hull and turret; a spall liner applied to the interior of the vehicle; restowage of ammunition, BII, and TOE equipment; external stowage compartments for the 25mm ammunition and TOW missiles; external fuel cells; the relocation/redesign of fire suppression handles; and a reduction in the number of firing port weapons from six to five.

Two nine-man Bradley Infantry Fighting Vehicle (BIFV) squads compared the performance of the BFVS ASTB vehicle with that of a standard BIFV during a series of mobility exercises and crew drills. The test examined vehicle performance (acceleration, maximum speed, cross-country speed, hill-climbing ability, obstacle negotiation, and braking distance), the impact of the ASTB modifications on the current logistic support system, the training requirements, the time required to reload weapons, soldier and vehicle interface, and safety. The Infantry School will use the test results in its examination of the feasibility of incorporating BFVS ASTB modification characteristics into future BFV systems and other combat vehicles and the trade-offs necessary to obtain these characteristics.

M249 Machinegun Modifications. Following the fielding of the M249 machinegun in 1984, some units reported problems with the weapon. The problems involved operational performance, reliability, maintaina-

bility, safety, and human factors characteristics. In the summer of 1985 the Army halted production of the M249 until a plan for corrective action could be developed and implemented.

In December 1985 the Board tested and reported on a set of quickly accomplished short-term fixes involving zeroing procedures and minor hardware changes. These short-term fixes have since been adopted and the hardware changes have been made to all the M249s on hand in the Army and the Marine Corps. In July and August 1986 the Board conducted a second test of additional modifications designed and selected by the materiel developer, the combat developer, and the manufacturer. In addition, the manufacturer in Belgium made a technical evaluation of the modifications under the supervision of the Armament Research, Development, and Engineering Center (ARDEC).

In December 1986 ARDEC recommended the adoption of a set of final modifications selected from among those tested by the Board. These modifications were organized into a kit consisting of a buttstock assembly, a barrel assembly, and a snap-on heat shield. Current plans are to incorporate all of the modification kit features into future M249 production. All weapons already in the inventory will be modified with a new buttstock assembly and a snap-on heat shield. Barrel assemblies will be replaced only to the extent that funds permit. The barrels that are not replaced along with the buttstock assembly will be used until they are no longer economically repairable.

To confirm that the fixes and modifications applied to the M249 are sufficient, the Board conducted a concept evaluation program (CEP) test of the modification kit during the period 1 July through 10 August 1987. Gunners from the 82d Airborne Division participated in a series of fire and maneuver exercises, tactical road marches, and airborne operations using three ver-

sions of the M249—newly issued weapons with all the modifications applied; unit weapons with the complete modification kit applied locally; and unit weapons modified only with the buttstock assembly and the snap-on heat shield. Test results will be used to support a decision on the production of the M249 modification kit.

Small Unit Radio (SUR) AN/PRC-126. The fielding of the AN/PRC-68 small unit transceiver (SUT) began in January 1982, but it was terminated in November 1983 because of deficiencies noted in the field.

In May 1985 a decision was made to replace the SUT with a low-cost (nonmilitarized) radio for combat support and combat service support units and a hardened radio for combat units. The Board conducted a customer test of the hardened radio for the Communications and Electronics Command (CECOM) during the period 13 July through 26 August 1987.

The hardened AN/PRC-126 small unit radio (SUR) is a handheld transceiver designed to replace the current AN/PRC-68, AN/PRT-4, and AN/PRR-9. The SUR weighs about 35 ounces, has an internal speaker/microphone, and comes with a handset and two antennas. It is designed to be interoperable with AN/VRC-12 series radios and the AN/PRC-77 radio. It has a capability for more than 2,000 usable externally tuned frequencies and four preset frequencies, and it has a design range of 3,000 meters with its long antenna or 500 meters with the short antenna.

Personnel from two mechanized infantry squads used the SUR while operating over wooded and urban terrain. Performance data was collected regarding transmission range, transmission clarity, frequency interference, presetting and changing frequencies, and human factors. Exercises were conducted that required ground-to-ground, ground-to-air, and air-to-air communications. CECOM will use the test results as

part of the acceptance criteria on the contract for the AN/PRC-126.

Ported-Coax Intrusion Sensor (PINTS). The Joint Service Intrusion Detection System (J-SIDS) was developed to detect theft by breaking and entering and theft of weapons from arms rooms in the continental United States. The Facility Intrusion Device System (FIDS) was a natural outgrowth of J-SIDS and is designed to detect intrusion of the most sophisticated nature in all types of DOD facilities.

In June 1987 the Board conducted a concept evaluation program (CEP) test of the Ported-Coax Interior Sensor (PINTS), a component of FIDS, to assess its operational effectiveness, interoperability, and adequacy of operation.

The PINTS is connected into the FIDS control console for power, command/control functions, and reporting of alarms/status data. PINTS itself consists of a system electronics unit (transmitter, receiver, and processing electronics) and a sensor transducer set (one to four pairs of ported-coax cable). In operation, a radio frequency signal is generated and radiated between one or more pairs of ported-coax cable. If the signal is disturbed, an alarm is sounded at the FIDS console. The detection zone is confined to the region in the immediate vicinity of the coax cables and is defined by their spacing, location, and length.

PINTS was installed as part of the facility intrusion detection system at Eglin Air Force Base, Florida, to protect operational buildings. While skilled and unskilled intruders attempted to enter the buildings protected by PINTS, data was collected on the system's functional performance, human factors, safety, reliability, and operational availability. The Military Police School will use the test results in support of the TRADOC position at the Milestone II In-Process Review.

PROFESSIONAL FORUM



Infantryman's Combat Weapon

CAPTAIN MAX OLIVER

Combat developers, material developers, and operations research specialists working within the Army are endeavoring to focus and define the direction of infantry small arms development. Some of the concepts being explored in the development of the next generation of infantry weapons may some day make possible a battle scene similar to the following:

Private Orloff struggled to regain his breath from the recent exertion of getting to his concealed position. He was a seasoned veteran of combat, having survived a year in the frontier regions of Afghanistan back in the 1980s and now the first four days of this conflict in the rolling hills of Europe. He had not felt the fear that today caused his heart to pound so hard since the first few days of active campaigning against outnumbered and overmatched rebel forces in that other faraway country. There he had quickly learned that death rarely came from rebel rifle and machinegun fire.

As he peered through the brush and trees, straining to see the enemy's positions, he reflected on his training. He had been taught that he was superior to any soldier he would have to face. He was an excellent marksman, one of the best in his regiment.

He had been taught how to maintain and use the AK-74 he now cradled in his arms. He could hit a target at 400 meters almost without fail. But he knew that in combat targets were never furnished for him. Only fleeting glimpses of enemy soldiers revealed their presence, and there was never enough time to get off an aimed shot. He also knew that an unaimed shot might cause the enemy to duck but that would be all.

Orloff really had come to fear only the crunch of heavy artillery rounds and the thump of the armored vehicles' heavy guns. The vast majority of his comrades sent home for long stays in hospitals, or for burial, had been torn ragged by shell fragments. Even when locked in very close fighting, throwing hand grenades seemed more effective than trying to shoot an unseen target.

Here on this close-in battlefield, he was expected to drive the enemy infantry from their positions so the armored column five kilometers behind his unit could advance. So what caused him to react with a gut-wrenching fear now? He was straining to hear, and desperately hoping not to hear, a new sound on the battlefield—a pop followed by a small thump that more often than not meant a casualty in the vicinity

of the explosion. This pop-thump was all over the lines and was rapidly changing the way he and his comrades fought.

But enough reflection. His buddies and superiors were counting on him and on each other. He had to advance to another position to get ready to assault the enemy's position. Running low and hard, he rushed forward for only three seconds, cutting and darting behind a tree and a bush. As he dove to the ground, he heard the crack of an enemy squad automatic weapon as it sprayed his trail with fire. Nothing to fear from those bullets shot too late and too far off the mark, Orloff told himself. But even so, for the first time since childhood, he muttered a prayer to the god he was told didn't exist.

It didn't help him. He had been spotted and located. Private Orloff did not hear the several pops or see, or even really feel, the explosions of the small explosive shells, some as much as ten feet away, which took his life.

On the other side, Specialist Four Forman was tired and really in wretched shape. For nearly five days he had been in and out of heavy fighting. And for several days before that he had gone with little sleep, preparing for the nightmare he and

his unit knew was coming. He and his foxhole buddy had spent nearly six hours preparing the position they were now staring out of. He had some avenues of observation out to 800 meters, but most of the area to his front and flanks allowed him to see out to only 500 meters. He knew the enemy force was getting close, because the artillery barrage had lifted just a few minutes earlier, a sure sign that Ivan was on the way. He could hear the whoosh of long-range antiarmor weapons from around him and the occasional thump of 25mm guns from the overwatch positions to his rear. The first glimpses of dismounted infantry to his front alerted him, and he began to choose targets.

About 400 meters slightly to his right, he saw an enemy soldier make a classic rush to a new position. The SAW gunner to his left also noticed this move and fired a burst at the fleeting target, driving it to cover. Specialist Forman did not even try to get off a hurried shot, although he could have if the enemy had been close and very threatening. He remained calm and, without thinking about it, raised his weapon, placed the hollow dot of the sight on the spot where he knew the enemy had gone to ground, and quickly fired a round from his five-round magazine. He then immediately fired a second round a few feet in front of the en-

emy soldier's last known location in case the soldier was crawling to another position. One of his squad mates to his right had done about the same thing, and the four closely spaced explosions ended forever the threat from that enemy.

Sergeant First Class Stevens grunted a little as he settled himself and about 45 pounds of gear into his fighting position overseeing his platoon's prepared defense. Sergeant Stevens was a soldier's soldier. As a young private he had participated in some of the last fighting by Americans in Vietnam and had led his platoon in combat on the island of Grenada. He knew how to train, take care of, and discipline the varied assortment of men the Army had given him.

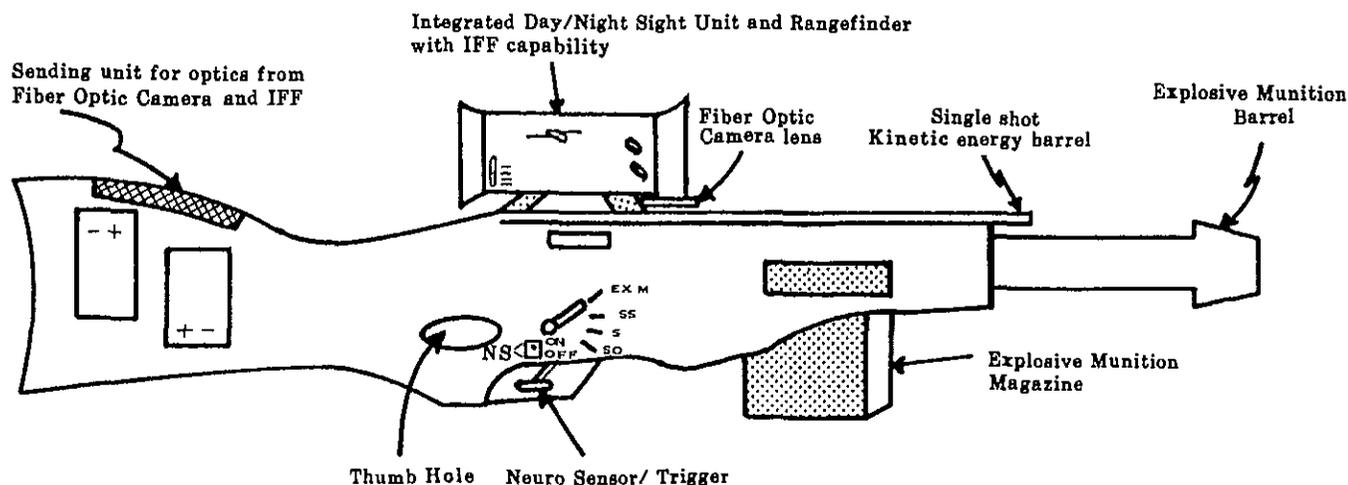
Some years earlier, before this war began, he would relax with his Army buddies and, among the war stories and lies, wonder out loud about the weapons the infantry was going to fight with in the future. He knew that Specialist Forman, right below him, probably had never given the subject much thought, having been in the Army only about 18 months. Forman had been issued a brand new multi-shot, magazine-fed, grenade-firing Infantry Combat Weapon the day he reported for infantry training. He had never touched the venerable M16. But Sergeant Stevens had. He had truly loved the weapon. He had car-

ried it in slightly different variations for many years and had trusted and relied upon it.

Even so, he had often wondered why there wasn't a better weapon for his soldiers to use. After all, the Army had spent so much money on other items in getting a unit ready for combat. As the supply sergeant reminded him every time he updated his hand receipt, his present platoon was worth a lot. For example, the platoon-leader carried a location system worth more than \$40,000; the platoon was covered with sophisticated night vision goggles and sights costing \$2,000 to \$8,000 each; the clothing each man wore cost over \$500; and the helicopter they flew in cost millions. Yet, as recently as two years ago, the rifles they carried—the main piece of equipment meant to actually destroy the enemy—had cost the Army less than \$500 each.

Then, to the chagrin of many oldtimers, and amid a lot of skepticism, the Army began equipping its infantry soldiers with new weapons that weren't even called rifles and machineguns. These weapons fired small bursting projectiles—20mm for the light individual weapon and 30mm for the medium crew-served weapon.

Now, when Stevens' platoon fixed an enemy unit with fire and maneuvered in for the close assault, the fire from these weapons caused tremen-



dous casualties before hand-grenade range was reached. His soldiers did not have to try to hit a moving target; they used automatic range-compensating, micro-computer-controlled sights attached to weapons that were designed around target-destroying munitions. The only throwback to the old days was the weapon system used by the snipers attached to his platoon. But even their weapons were somewhat different from those of the past, as they were 300 Magnums with sophisticated ranging sights. These weapons gave the commander discriminate long-range point-type weapons to complement the other fires of the platoon.

In combat, Sergeant Stevens had seen soldiers on both sides fire thousands of bullets at each other, with only an occasional hit. His platoon

was now successfully fighting greatly outnumbered, in part because of the advanced weapon systems they carried. As he surveyed his platoon again, Sergeant Stevens knew that the battle was won. They had outmatched the enemy's range and killing power. This time, however, it was not just the big guys who had the technological advantage; the grunt who took and held ground was also ahead of his grunt adversary.

This success story, although quite fictional, could be true in a future conflict. The challenge to making it a success is for combat developers and industry to pull together and exploit known, already proven technology and make it happen. Some of the very first studies conducted by operations research specialists for the Army, and many more stud-

ies since, have clearly shown that infantry soldiers have rarely inflicted casualties with their individual small arms.

It is clearly time to take a new approach to the problem of arming the United States Infantryman. If we block the word "rifle" out of our vocabulary and think instead of a "weapon system," new approaches become possible. This kind of thinking has been written into our Small Arms Master Plan, which is still in its staffing stages.

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Ammunition Dummy, Inert, and Simulated

CAPTAIN DEREK A.N. SORIANO

The daily business of soldiers in peacetime is to train for war, and their training should be as realistic as possible. With ammunition resource constraints, however, the planning, coordination, issue, and resupply of ammunition in peacetime training is often no more than a paper drill. Soldiers and leaders are denied actual hands-on experience and are left with a false sense of security that ammunition will be readily available in wartime when and where they need it—and that it will not greatly affect the loads they must carry.

To educate future battlefield leaders on the importance of planning for, distributing, and carrying ammunition and other munitions, the

U.S. Army Infantry School is now integrating the use of dummy, inert, and simulated (fabricated) ammunition into all the tactical training exercises in certain leader courses—Infantry Officer Basic, Advanced Noncommissioned Officer, Officer Candidate, and Ranger. Emphasis is placed on ammunition considerations from planning to actually carrying the necessary items and replacing them at the objective. The intent of this initiative is to make training as realistic as possible to ensure that leaders are trained to consider all of the factors involved in accomplishing a mission.

Each of these courses has a prescribed load of individual and squad munitions that is to be carried, ac-

ording to the mission, on all appropriate field training exercises. (The fighting load ammunition for IOBC is shown here as an example.) Live or blank ammunition

IOBC FIGHTING LOAD AMMUNITION	
PER MAN	
5.56mm magazines	7 (5 inert, 2 blank)
Grenades	2 (w/expended fuses)
PER SQUAD	
7.62mm (100-rd boxes)	11 (8 inert, 3 blank)
40mm	44
LAWs	4
Claymores	4

items are used when they are appropriate; otherwise, dummy, inert, and simulated items (items fabricated by the Training Support Center—TSC) are substituted to complete the prescribed or required load.

This practice indoctrinates students in the leadership thought processes involved—what munitions are required for a mission, how much these items weigh, how bulky they are, how much each man can carry and still function in his primary mission role, what non-essential items may be in the loads, and what trade-offs can be made. Thus, each leader-trainee learns to weigh anticipated mission needs against the availability of munitions and the unit's ability to transport and employ these munitions if required.

This same principle is applicable to troop units as well. In many units, there is little realism when it comes to ammunition. They go to the field with a couple of boxes of blank M16 rounds per man, no M203 rounds for the M203 gunners, several inert LAW tubes, and a few boxes of blank ammunition for each M60 machinegun.

When logistic actions such as resupply are included in an exercise, blank ammunition is usually redistributed instead of being replenished through the complete battalion, brigade, or division logistical process. Commanders and S-3s merely report ammunition shortages during exercises and seldom plan for and actually conduct resupply missions. Units are forced to exist on the remaining blank ammunition that was forecast for that particular exercise.

Units should use METT-T (mission, enemy, terrain, troops, and time available) in planning, coordinating for, and resourcing ammunition to accomplish their missions, just as they would have to do in wartime. During the resource phase of the training management cycle, they should also consider training needs, goals that are important to their mission, resource constraints,

and directed events so that training ammunition requirements can be forecast, identified, resourced, and obtained.

The use of dummy, inert, and simulated ammunition when live or blank ammunition is not available can reduce the cost of ammunition while maintaining a high degree of realism. At the same time, it can help commanders do a better job of assessing their units' ability to accomplish training objectives under realistic tasks, conditions, and standards.

An important part of this effort is the effect of realistic ammunition planning on the soldier's load. The



planning and distribution of the minimum load configuration should be considered. (See "Soldier Load: When Technology Fails," by Major Richard J. Vogel, Major James E. Wright, and Lieutenant Colonel George Curtis, *INFANTRY*, March-April 1987, pages 9-11.)

Simulated weight is sometimes added to soldiers' loads in the form of sandbags, but soldiers often discard this extra weight, especially since it has no other training value. With dummy, inert, or simulated ammunition, however, the soldiers must account for what they are issued and are therefore less likely to discard it. In addition, they know they will use many of these items once they reach their objective. This sustains training and gives soldiers a better appreciation for having car-

ried the load.

Sustainment training, such as emplacing a claymore mine or priming a demolition charge, can be emphasized through the use of dummy, inert, and simulated ammunition, especially when live or blank ammunition, pyrotechnics, and simulators are also incorporated. Training exercises or day-to-day mission accomplishment can reinforce the tasks that involve ammunition and require sustainment training.

Complementing blank ammunition with dummy, inert, and simulated ammunition also allows units to reestablish full mission loads for the next mission. Logistical play can be exercised by collecting the dummy, inert, and simulated ammunition and routing it back through the system so that it can be resupplied to the soldiers.

Some of the ammunition shortfalls and lack of realism during training in the past can be attributed to such problems as ammunition constraints, under-forecasting requirements, and lack of planning and coordination between S-3s and S-4s. But the biggest obstacle has probably been the difficulty in obtaining dummy, inert, and simulated ammunition to mirror mission loads. Fortunately, the U.S. Army Infantry School and Center has recently overcome this obstacle to training in its courses and can now help units in the field obtain such items as well.

The Training Ammunition Management System (TAMS) produces dummy ammunition (items that are usually metal replicas of actual items, such as 5.56mm ammunition) and inert ammunition items (items that are expended residue, such as inert light antitank weapons—LAWs). Because of low user demand, however, many needed items have not been produced in sufficient quantities, and many of the items that have been made are not of the same weight as the real ones. In addition, because these dummy TAMS rounds are accountable in



Training ammunition devices

the same manner as live rounds, units tend to avoid using them. For these reasons, the best source of training ammunition devices is local TSCs.

The Infantry School currently uses some items that are available through TAMS, such as practice grenade bodies and fuzes, but also relies heavily on fabricated items that the Fort Benning TSC has designed.

Some of these items are:

- **M203 Round.** This simulated round is made of polyurethane and is the actual shape and weight (one-half pound) of a live M203 HE round. (To carry these rounds, Infantry School leader courses are using the M203 vest, which can be procured through supply channels.)

- **5.56mm 30-Round Magazine.** This simulated magazine, also made of polyurethane, is the actual shape and very close to the actual weight of a fully loaded 30-round magazine. It does not rust as an actual magazine does, nor does it need servicing and maintenance. During live fire or field exercises, actual magazines with live or blank ammunition are used along with these solid plastic ones. For the most part, these simulated magazines are carried in rucksacks and ammunition pouches.

- **LAW.** Inert LAWS are obtained from the Ammunition Supply Installation (ASI) and properly marked and drilled by the TSC and then weighted with wood. Modifica-

tions are made so that the LAW can still be extended. These modified LAWS weigh five pounds each as opposed to an actual LAW, which weighs 5.2 pounds.

- **7.62mm M60 Box.** A solid block of polyurethane is molded to meet the actual dimensions and weight (6.5 pounds) of a box of live M60 ammunition. Bandoleers and 7.62mm ammunition cans are obtained from ASI residue and marked for training.

- **TNT Sticks.** These one-quarter-pound sticks are made of wood to resemble actual TNT sticks. A hole is drilled in each to accommodate an inert blasting cap, which can be obtained through TAMS.

- **C-4 Blocks.** One-quarter-pound rubber blocks are produced to resemble the size and weight of actual C-4 blocks. In addition, one-and-one-quarter-pound clay blocks are locally purchased and packaged. These blocks are made of blue modeling clay and have the same malleability as actual white C-4 blocks.

- **Bangalore Torpedo Kit.** The 14.5-pound bangalore torpedo kit is the same size and weight as the live kit, and the sections can be assembled in the same way.

- **Claymore Mine.** This simulated mine is the same size and weight (3.51 pounds) as an actual claymore. In addition, Fort Benning's TSC has modified it to accept a flashbulb, which can be set off by the actual electrical primer, or

clacker, providing instant feedback to soldiers who have to emplace the mine properly. Claymore accessories are obtained from ASI residue and properly marked, and flashbulbs are obtained through supply channels.

(All of these items are marked as prescribed by appropriate regulations and are further identified as training, or simulated, munitions by one or more one-inch bands of infantry blue paint or adhesive material of similar color.)

This list includes only the items that are currently being used in the Infantry School's leader training. Other items such as plastic M16 rifles (reinforced with lead pipe), which are used for bayonet practice to prevent wear and tear on real M16s, are also fabricated at Fort Benning. As the demand arises, other items such as mortar ammunition will also be produced.

Units must forecast and obtain available dummy and inert ammunition items through their division or installation ammunition channels. CTA 50-909, Field and Garrison Furnishings and Equipment, must be updated by the installation logistics offices for additional authorizations of dummy and inert ammunition. Once the forecast quantities of items arrive at servicing ASIs or ASPs, DA Forms 581 must be completed to obtain them.

For simulated ammunition items, units must submit work-order requests through their servicing TSCs. If the items they need are not available, units should ask their TSCs to contact the Fort Benning TSC at the following address: Commander, U.S. Army Infantry Center and Fort Benning, ATTN: ATZB-DPT-TSC, Fort Benning, GA 31905-5273; AUTOVON 835-2132/4595, or commercial (404) 545-2132/4595.

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Soldier Readiness

Some Thoughts on Leadership

LIEUTENANT COLONEL GEOFFREY G. PROSCH

Although leadership is normally viewed as an art, there is sufficient latitude for individual development. With the right motivation, good common sense, and total dedication, a solid leadership style is within the grasp of anyone. The main job of infantry soldiers is to be prepared to deploy and fight a war tomorrow. It is up to us as leaders to see that they are prepared.

Four important factors must be considered when shaping up combat readiness—soldier confidence, cohesion, motivation, and pride. The thoughts on leadership issues that are presented here are workable and have been tested over a period of time in various types of infantry units.

Confidence. Winners have a certain way about them that is infectious and exciting. Everyone likes this feeling, and it is one that can be planted, nurtured, and harvested in a unit through a variety of programs designed to increase each soldier's confidence and help him develop an inner belief in his own potential.

Personal and unit physical fitness programs are an excellent beginning point. Physical fitness is too important to be an after-duty individual option, because there is a correlation between physical toughness and mental toughness. The "right" standard is some type of daily physical training. It is important that leaders participate in this training along with their soldiers, because this

demonstrates a willingness to share their hardships.

Another important part of instilling confidence is training our troops to man their increasingly sophisticated weapons and training our small unit leaders to employ them. In fact, this is where our soldiers have their greatest opportunity to gain confidence—with their weapons, as members of a winning team, and under conditions closely approximating battle. Night firing of individual and crew-served weapons and night operations (mounted and dismounted) under combat-related conditions are tremendous confidence builders. Individual and crew or squad battle drills that are conducted over and over until correct execution is a habit or a reflex also build the soldiers' confidence in their equipment and their leaders. (The Infantry School has provided outstanding battle drill "playbooks" for the squad leader to use in training his unit.)

CORNERSTONE

Individual training is the cornerstone of our combat readiness. Our soldiers deserve good coaching in the Basic Skills Education Program (BSEP) and the Skill Qualification Test (SQT) program. In addition, there is a direct relationship between individual soldier tasks and unit collective tasks, because the individual soldiers must reach a certain level of proficiency in the fun-

damentals before a unit can make progress with collective training.

Senior leaders must have enough confidence in their junior leaders to decentralize responsibility down to the lowest level leader who is able to handle it. If a leader habitually bypasses his chain of command and belittles the importance of his subordinate leaders, they will fail him in a critical situation. But if he uses and trusts those leaders he will add to their prestige and confidence, and they will not fail him.

A well-known aspect of leadership is taking care of the personal problems soldiers cannot solve themselves, such as mail, pay, and hot rations. But a less well-known aspect is making soldiers live up to their potential. When a road march is tough and they want to quit, it is up to their leaders to make them take that one more step. When the day ends, they can look back and recognize that they are better soldiers than they had ever thought possible and had overcome obstacles they previously had considered insurmountable. And when a soldier has done well, he should be praised, preferably in front of his peers.

Cohesion. The *purpose* of leadership—which is to accomplish a given task—has been called its very essence. It involves putting people, things, time, and effort together to accomplish that task. Army leadership is different from other kinds, in the final analysis, in

that the front line leader must be prepared some day, some place, to lead his soldiers to accomplish tasks *no one else wants to do—including killing and dying.* This, then, is the essence of "service" as well, and the foundation of the whole idea of military "duty."

The essence of leadership, service, and duty all come together when the chain of command calls for these ultimate tasks and says, "Attack." The artillery shifts, small arms crack, soldiers tremble, and the platoon tenses for the final assault. The leader gives a signal and they go.

Various studies on the human element of successful combat leaders and what causes soldiers to fight well in combat have revealed that much of it has to do with unit cohesion: A soldier knows his buddies are counting on him to do his job; he has learned that his leaders know the right thing to do; following orders and squad battle drill have become automatic; he knows his unit will never leave dead or wounded behind; he knows his family will be taken care of if he is killed; he has confidence in his individual weapon and his squad crew-served weapons; he and his fellow platoon members are in top physical condition; his platoon leader has said, "Follow me. When you reach the top of the hill, I will be there—up front."

Historically, we find the American soldier, when he believes in his unit and his leaders, follows his leader any time, any place, even to almost certain death. Cohesion is therefore too closely related to unit performance to be ignored when shaping up unit readiness. This is why COHORT companies have become the new method of overseas replacement for combat arms soldiers.

Maintaining unit integrity during such activities as guard duty, support details, and sports competition helps build unit cohesion. When support tasks are assigned to squads and platoons as missions, support jobs gain training value instead of

being merely chores. Really good squads and platoons are those that work training into their support periods.

Unit sports programs make the most of participation and teamwork (platoon size teams are best). At the end of pushball, basketball, volleyball, and flag football seasons, the best platoon teams—not composite teams—should be sent to represent the company and the battalion.

Leaders must also fight to keep their talented athletes in the unit. Having outstanding soldier athletes on special duty attached to a community staff (having a winning post team) may be good for the military commander's ego, but it erodes cohesion in the squad that must pull the absent athlete's share of the work.

BENEFITS

Dismounted drill periods also foster unit cohesion, and they have spin-off benefits of unit order and discipline and of leader confidence and command presence. A squad's prompt reaction to the leader's command of "Right face" correlates to the squad's reaction to that same steady voice saying "Move out" while under enemy fire.

Small unit field training develops teamwork. A unit placed in an X-period of training (prime time/mission related training) should schedule frequent field training. Small unit leaders should be given time during each X-cycle to train their squads and platoons as they see fit. Our leaders have been taught how to use the Battalion Training Management System (BTMS) and how to develop a training and evaluation plan for field training exercises. It is important, too, that they be allowed to road march (mounted or dismounted) out the back gate on their own. The strength of the U.S. Army has always been the wealth of imagination and talent it has in its junior leaders. Whenever possible, the "how" must be left up to them.

Decentralized training is not an abdication of a leader's responsibility. For there are a lot of coaching, planning, pre-briefings, and pre-execution checks he must accomplish before he can send a squad or a platoon on an independent mission.

Finally, loyalty is the cement that holds a unit together—a soldier's loyalty to those above, below, on the right and left, and lastly, to himself.

Motivation. The 1979 Army Commanders Conference—in attempting to find the answer to the question, How does the presence or absence of motivation affect the peacetime performance of individual and collective skills?—developed the following formula: Performance equals knowledge times motivation.

Thus, no matter how much effort we put into the training of a soldier, if he is not properly motivated the result will always be low performance.

Soldiers are motivated when they perceive that they have an important job to do; feel that they are doing that job well; and receive recognition for their efforts.

In building motivation, therefore, we must start by focusing on developing our junior NCOs and officers. The Army NCO corps was in jeopardy during the latter stages of the Vietnam war. Experienced World War II and Korean war veterans were retiring, many lieutenants were doing sergeants' jobs, and personnel turbulence was great. Fortunately, this has changed, largely because of the NCO Education System (NCOES). Slowly, painfully, over the years, with the help of the "Old Sergeants" who remembered how a good Army was put together, the young NCOs learned leadership skills.

This is vital, because our entire system of training, from the Skill Qualification Test to the Army Training and Evaluation Program, is useless if the NCO corps does not take the responsibility for hard, repetitive training. We must energize and train our junior leaders, coun-

sel the good ones—let them know we appreciate their efforts—and cause them to want to stay on the Army Team.

In fact, performance counselling is something we owe to all our soldiers—on-the-spot corrections while they are performing a task and critiques immediately afterward. When a soldier fails to perform to standard (whether it is in personal appearance, on a firing range, or during a field training exercise), he usually knows he is wrong and will respect his leaders more if they correct him. When he performs to standard and receives recognition for his efforts, he will feel like a winner.

When counselling our soldiers we should remember the words of Command Sergeant Major Ted G. Arthurs (who during his 13 years as a first sergeant gave many lieutenants their postgraduate education in soldiering):

Don't destroy a soldier's self respect. Always leave a man you have counselled with the feeling that although he has done wrong, you really think he is a good man at heart and has the potential to do much better. If you make him seem like a complete dud, that is what he will become.

We should also take General

Bruce C. Clarke's advice:

The first step in motivating soldiers is to tell them the reason why. All your men want to do what you want done. When they do not, you have failed to instruct and motivate them. Awards that motivate only the top men are of little value in raising the ability of a unit. A unit is measured by the ability of the lower third personnel in it to carry their part of the load.

Two good ways for leaders to communicate what they want done is to involve their NCOs in the weekly platoon, company, and battalion level training meetings and to publish company training schedules several weeks in advance. Company commanders and platoon leaders should address their units daily. And the best possible way for leaders to assess the training and motivation of their units is to inspect personally.

Pride. We must nurture within our infantry soldiers a pride in their units and in the jobs they do. The infantryman has more different types of equipment and systems to master than soldiers in any other arm, and he has the additional responsibility for correctly integrating his own systems with those of the rest of the combined arms team. Cleanliness, neatness, and orderli-

ness within vehicles and motor pools are evidence of individual and unit pride, and proud units are good units.

We must also pass on to our soldiers the traditions and the history of our units and our profession. Infantrymen have borne the brunt of our Nation's battles. They have suffered greater extremes of discomfort and fatigue than the other arms, and their casualties were heavier. The other arms and services have done their part, of course, but our infantry soldiers are special, and we've got to make them believe it!

Former Army Chief of Staff Edward Meyer once said, "Commanders must be able to juggle a lot of balls, but four of them are glass balls: maintenance, training, war plans, and people." The linch-pin of this big four is people. When our soldiers are confident, cohesive, motivated, and proud, they maintain their equipment, train hard, and are always ready to carry out the war plan.

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Reporting

Ground Order of Battle Information

MASTER SERGEANT DAVID A. PILS

The missions of the Army's new long-range surveillance units (LRSUs) are similar to those of their predecessors, the long-range

reconnaissance patrol (LRRP) units. Their operational techniques in any war will be different, however, according to the demands of their

operational environments in terms of METT-T (mission, enemy, terrain, troops, and time available).

The LRRP units that operated in

SAV SUP Series	MESSAGE FORMATS	118
Ground OB Report (WESAW)		
a. General.—The Ground OB Report will be used to transmit ground order of battle information between the outstations and the Base.		
b. Format:		
Proword: WESAW		
Paragraph:		
A. Date/time group (when).		
B. Location (where).		
C. Activity (what).		
D. Nationality (who).		
E. Medium tanks.		
F. Light tanks.		
MESSAGE FORMATS	156 of 158	118

SAV SUP Series	MESSAGE FORMATS	118
G. Tracked ACV/AICV/APC/ACRVs.		
H. Wheeled ACV/APCs.		
I. SSM Launchers.		
J. Artillery.		
K. AAM/SAM Launchers.		
L. Bridging/Ferries		
M. Additional Information.		
c. Example: (WESAW)		
Message number 12		
Paragraph:		
AAA 162400Z AUG		
BBB BRAVO TANGO 763814		
CCC MOVING SOUTHWEST		
DDD SOVIET		
EEE 40 EMBER		
MESSAGE FORMATS	157 of 158	118

SAV SUP Series	MESSAGE FORMATS	118
FFF Omitted		
GGG 121 GRUNT 13 GIZMO		
HHH 10 HORDE		
III OMITTED		
JJJ 18 JOKER		
KKK 4 KINGS 4 KLUTZ		
LLL 5 LAKER		
MMM GUARDS		
Message Prepared for Encryption:		
ONE TWO WESAW XX AAA ONE SIX TWO FOUR ZERO		
ZERO ZULU AUGUST BBB BRAVO TANGO SEVE SIX		
THREE EIGHT ONE FOUR CCC MOVING SOUTHWEST DDD		
SOVIET EEE FOUR ZERO EMBER GGG ONE TWO ONE		
GRUNT ONE THREE GIZMO HHH ONE ZERO HORDE JJJ		
ONE EIGHT JOKER KKK FOUR KINGS FOUR KLUTZ LLL		
FIVE LAKER MMM GUARDS		
MESSAGE FORMATS	158 of 158	118

Figure 1. Ground Order of Battle Report (WESAW)

Vietnam, for example, did so against an enemy composed primarily of tactically dispersed dismounted infantry units. The enemy's organization was simple, and for the most part LRRP units reported intelligence—for example, "A company-size element. . ."

By contrast, LRSUs are designed to operate in mid- and high-intensity conflict environments against technologically sophisticated enemies. It would therefore be a formidable task to train LRSU soldiers to recognize the TOE patterns of their potential enemies. These TOE patterns might not always be discernible to LRSUs in any case because of the lateral dispersion of mechanized formations. LRSUs, therefore, should be prepared to transmit order of battle information instead of intelligence.

This does not mean, of course, that to report order of battle information

LRSU soldiers must learn to recognize all of an enemy's vehicles. Not all of the many vehicles that equip a Soviet tank division, for example, are significant indicators of that division's nationality, composition, disposition, and strength, but a selection of items can be targeted for recognition. To reduce vulnerability to analytic error and deliberate deception, this selection should focus primarily on items that represent the combat strength of major units, and secondarily on items by which major units can be differentiated.

The Ground OB (Order of Battle) Report (WESAW) is a message format that has been designed to facilitate the transmission of ground order of battle information. This format, ideal for use by LRSUs and patterned after the Special Forces CEOI Supplemental Instructions (SAV SER SUP 3), is

shown in Figure 1:

Paragraph AAA, Date-Time Group, can indicate either the time of an observation or the completion of a fixed observation period—24 hours, for example.

Paragraph BBB, Location, can be identified either by map coordinates or by code name.

Paragraph CCC, Activity, can reflect either an activity, such as laagering, or a direction of travel.

Paragraph DDD, Nationality, is used to identify the nationality of the items observed when items of more than one nationality are likely to be observed—for example, those of the German Democratic Republic and the Soviet Union. This paragraph can be omitted by convention, however, when the nationality is understood.

Paragraphs EEE to LLL indicate the number of qualifying items observed in each category. A unit re-

SAV SUP Series	BREVITY CODES	119
k. Ground OB List and Brevity Codes.—This Code will be used to supplement the Ground OB Report (WESAW), and lists items to be reported in paragraphs EEE to LLL.		
Code Word	Item	
ELBOW	Med Tank, T-54/55/62	
EMBER	Med Tank, T-64/72/80	
FLOOD	Lt Amphib Tank, PT-76	
PLUKE	SP Assault Gun, ASU-85	
GIZMO	ACV/APC, BTR-50/OT-62	
GIZMO	ACV/APC, MT-LB	
GIZMO	ACRV, M1974	
BREVITY CODES	32 of 34	119

SAV SUP Series	BREVITY CODES	119
Code Word	Item	
GRUNT	ACV/ACRV/AICV, BMP/BMP-1	
GOOSE	ACV/AICV, BMD/BMD-1979	
HORDE	ACV/APC, BTR-60/70/80	
HYDRA	ACV/APC, OT-64	
IDIOT	SSM Lehr, FROG-3/5/7	
INGOT	SSM Lehr, SS-21	
IRISH	SSM Lehr, SS-1c (SCUD-B)	
JACKS	Towed How/Gun, D30/D20/M46	
JOKER	SP How, 2S1/2S3	
JUICE	Towed Gun, M1976/SP Gun 2S5	
JUMBO	MRLS, BM-21/BM-27/RM-70	
BREVITY CODES	33 of 34	119

SAV SUP Series	BREVITY CODES	119
Code Word	Item	
KAZOO	Towed AA Gun, 2U-23-2	
KINGS	SP AA Gun, 2U-23-4	
KIOSK	Towed AA Gun, S-60	
KLUTZ	SAM Lehr, SA-9 GASKIN/13 GOPHER	
KNAVE	SAM Lehr, SA-8 GECKO	
KORAN	SAM Lehr, SA-6 GAINFUL	
KRYPT	SAM Lehr, SA-4 GANEP	
LAKER	Bridge, MTU/TMM	
LIBRA	Bridge, PMP	
LOUSE	Ferry, GSP/K-61/PTS-H	
BREVITY CODES	34 of 34	119

Figure 2. Ground Order of Battle List and Brevity Codes.

fers to a supplementary document, Ground OB List and Brevity Codes, for a listing of qualifying items to be targeted for observation and reporting. (The list used in preparing the message in Figure 1 is shown in Figure 2.) Brevity code words can be used in conjunction with paragraphs EEE to LLL to report in detail which qualifying items have been observed. If qualifying items of any category have not been observed, the corresponding paragraph is omitted.

Paragraph KKK, Additional Information, might be used to report distinctive markings observed—Soviet Guards insignia, for instance.

Each LRSU's parent Military Intelligence unit would develop a Ground OB List and Brevity Code document to reflect its specific priority information requirements (PIRs) and the enemy's ground order of battle. If a LRSU's surveillance area is in North Africa, for example, items of U.S., British, French, Italian, and Brazilian manufacture, as well as items of Soviet and Czech manufacture, might be listed.

A significant advantage of this system is that it makes training and employment easier: To use it, LRSU personnel do not have to be trained to recognize TOE patterns or to distinguish between items that appear similar. They only have to be able to report the total items observed by category, which is a realistic day or night task.

Brevity code words can be used in

conjunction with this format to report totals of specific types of items whenever they can be visually differentiated. Detailed reporting of enemy air defense weapon systems, for example, are of significant value to friendly close air support units. The differentiation of specific items or equipment also helps to identify enemy units.

Another advantage of this system is that it is particularly efficient in regard to the amount of information conveyed in each message transmission. If necessary, the passage of an entire army can be accurately reported using this system without exceeding the transmit-message capacity of the digital message device group (DMDG).

The ground order of battle information collected can then be analyzed by the LRSUs' parent Military Intelligence units. In such an analysis, the information reported by multiple surveillance teams is templated on a stacked bar chart with the eight equipment categories along the x-axis. When this data is compared to known, templated order of battle intelligence, the totals can be expressed in three ways:

- By total items per equipment category. For example, the total number of medium tanks (EEE) observed by four surveillance teams.

- By percentage observed of total items in the category. For example, the total number of medium tanks (EEE) observed by four surveillance teams represents 65 percent of the total number of medium tanks in

the TOE of the enemy unit engaged.

- By units. For example, the total number of medium tanks (EEE) observed by four surveillance teams represents a certain number of medium tank battalions.

When ground order of battle information is analyzed on a strategic scale, multiple-regression, an elaborate mathematical process, can be employed to suggest the specific types of units that have been observed. For example, the total number of medium tanks (EEE), tracked ACV/AICV/APC/ACRVS (GGG), and wheeled ACV/APCs (HHH) observed can be compared with the total number of such items in BTR regiments (MRD), BMP regiments (MRD/TD), tank regiments (MRD), and tank regiments (TD). The resulting possible combinations of units are then compared to the order of battle intelligence to determine which combination is most probably correct. This becomes possible only on a strategic scale when a large data base is available.

Effective, highly efficient message formats such as the Ground OB Report (WESAW) make brief radio transmissions easier, thereby increasing a LRSU's survivability and mission accomplishment.

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Exercise Celtic Cross IV

EDITOR'S NOTE: This article was prepared by various offices within the Infantry School.

A part of the conversion to the Army of Excellence Tables of Or-

ganization and Equipment (TOEs) has been the creation of five divisions (four Active Army and one Reserve Component) under the Infantry Division Light—ID(L)—organization. These base-L divisions

differ radically in concept and design from the H-series TOE units that preceded them.

To ensure that the new doctrine, equipment, and organization would work as envisioned, the Army, be-

ginning in May 1984 subjected the operational concept and design to an intense certification process. This process culminated in the field exercise Celtic Cross IV in the summer of 1986, and the final concept and design were approved in February 1987.

To begin the overall certification process, the proponent schools analyzed their branch components of the light infantry division and used this analysis to write the initial tactical doctrine and to propose certification issues. From this process, 91 issues were identified, and these formed the basis of the independent evaluation plan (IEP). Each of these issues was investigated by a variety of methods. Thirty-eight of them were resolved by historical literature searches, studies, tests, and wargames, and the rest by the field certification process.

The objective of field certification was to assess the combat, combat support, and combat service support functions of the light infantry division in a tactical scenario. As the first unit to make the transition to the new design, the 7th Infantry Division at Fort Ord, California, was used for field certification. (This process was not designed to evaluate the readiness of the 7th Division's units and their state of training but to allow subject matter experts to evaluate the concept, doctrine, organization, and equipment of the light infantry division.)

The field certification methods were controlled by these principles:

- Capitalize on previous tests, studies, and analyses.
- Conduct essential testing only.
- Make maximum use of the division's internal evaluations (ARTEPs).
- Focus on combat support and combat service support.
- Evaluate, fix, evaluate.

Concurrent with the 7th Division's normal training schedule, the TRADOC (Training and Doctrine Command) Combined Arms Test Activity (TCATA) used squad-through-battalion ARTE evaluations and

brigade and division FTXs and CPXs for certification.

The final field certification event, Celtic Cross IV, focused on the ability of the division, as part of a corps, to deploy from home station and operate for an extended period of time. By that time, the Infantry School was confident that the previous certification process had revealed and fixed any problems in concept, doctrine, or design with the infantry battalion and brigade. What remained to be seen was whether or not the division concept, on which so much else depended, would work.

Celtic Cross IV, conducted on the rugged terrain of Fort Hunter Liggett, California, included soldiers from the 7th Infantry Division, the 9th Infantry Division (Motorized), the 10th Mountain Division (Light Infantry), the 101st Airborne Division (Air Assault), the 1st and 5th Special Forces Groups, I Corps, and the 2d Battalion, 75th Ranger Regiment. It was controlled down to platoon level by controllers from the 9th Division. A total of 99 subject matter experts from TRADOC schools and centers evaluated the certification issues. More than 21,000 soldiers, airmen, and Marines from Active, Reserve, and National Guard units participated.

The 17-day exercise was conducted in four phases—deployment, initial employment, sustained operations, and redeployment. During the

OPFOR CONVENTIONAL FORCE

Headquarters and Headquarters Company, 2d Brigade, 10th Mountain Division (Light Infantry)
 2d Battalion, 14th Infantry
 1st Battalion, 327th Infantry
 2d Battalion, 77th Armor
 5th Battalion, 15th Field Artillery
 Company A, 1st Battalion, 67th Air Defense Artillery
 63d Combat Aviation Battalion
 Company B, 14th Engineer Battalion
 1st Platoon, Company C, 109th Military Intelligence Battalion
 4th Platoon, Company B, 9th Signal Battalion
 363d Squadron (Medium Helicopters), U.S. Marine Corps
 2d Forward Support Battalion

deployment phase, the 7th Division—or Army Force (ARFOR)—received the mission to deploy by air to a simulated allied nation where it would assist that nation in counterinsurgency operations, deter a neighboring hostile nation from invading, and be prepared to destroy any forces that might cross the border. The division deployed one brigade and the division assault command post by air from Fort Ord. The remainder of the division followed the normal readiness standing operating procedures (RSOPs) for alert, preparation for overseas movement (POM), load-out and manifest, but simulated the air movement by proceeding in convoy to the arrival airfield.

The deployment phase included flying into intermediate staging bases and constructing and using assault airstrips. Once on the ground, the division established and secured a lodgement area and coordinated with host nation and country team representatives.

INITIAL EMPLOYMENT

The initial employment phase in the area of operations began with a parachute assault by elements of the 2d Ranger Battalion, an insertion of the divisional long-range surveillance detachment (LRSD), and an air assault by a rifle battalion to link up with the Ranger battalion. It continued as elements of the division infiltrated by foot or air-assaulted into their respective areas of operation. One brigade moved into position near the border to deter a conventional invasion while the other two brigades conducted counterinsurgency operations.

The opposing force (OPFOR) consisted of both guerrilla and conventional forces. The guerrillas were 250 soldiers from the Ranger battalion and the 3d Battalion, 5th Special Forces. The conventional force was organized into a composite task force (see box).

During the initial employment

phase, the guerrilla OPFOR conducted operations against the lodgement area, the lines of communication, and other soft targets. The conventional OPFOR portrayed a two-division combined arms force moving into forward assembly areas and staging cross-border mounted and aerial reconnaissance activities.

During the sustained operations phase, the guerrilla OPFOR activity continued while the conventional OPFOR attacked along two axes with both light and mechanized forces. For about two and one-half days the battle was fought back and forth in a single brigade sector. In some places the OPFOR thrusts were bogged down by a series of ARFOR ambushes and counterattacks. In other sectors, at different times, mechanized OPFOR forces on the valley floor cooperating with light OPFOR units on the ridgelines were able to breach ARFOR obstacles and either penetrate or envelop the static ARFOR defenses that were overwatching the obstacles. The OPFOR units that did penetrate the ARFOR lines were engaged by attack helicopters, A-10 aircraft, and FASCAM (family of scatterable mines). Bypassed ARFOR units remained in place and mounted local counterattacks and ambushes against the OPFOR's follow-on echelons.

Controller assessments indicated that at the end of three days the OPFOR was able to interdict the ARFOR supply routes for limited periods and to seize control of one province but that the initial attacks had been contained by elements from the division's other two brigades.

The OPFOR countered by sending its mechanized forces on a wide envelopment to strike the ARFOR at the boundary between one of the forward brigades and a brigade that was positioned in depth. The attack was defeated by a combination of obstacles, attack helicopters, and mines. Later in the day, a similar attack succeeded in penetrating the ARFOR flanks, but the play of the

scenario did not allow a full exploitation of the initial success.

The ARFOR responded with brigade counterattacks into the OPFOR's forward positions. OPFOR armor units that were forced out of these positions were engaged by ambush over the next two days as they withdrew back



across the international border. Although the counterattack was successful, heavy casualties were assessed against the ARFOR units because they had been picked up by the OPFOR's thermal night sights as they tried to infiltrate into position. Subsequent air assault counterattacks by the ARFOR into the OPFOR rear areas and guerrilla base camps, however, were completely successful.

A number of major observations can be made as a result of Celtic Cross IV and the entire light divi-

sion certification process. These observations fall into two general categories—first, the focus of the scenario and, second, the tactical lessons learned.

The scenario of Celtic Cross IV focused on the combat and combat service support needed to support operations against a combined arms enemy. Since most combat issues had been thoroughly evaluated and resolved earlier, this exercise focused on stretching the division's combat and combat service support system to the breaking point through a realistic tactical scenario. This focus placed less emphasis on the guerrilla and counterinsurgency scenario and the more esoteric aspects of counterinsurgency warfare.

The primary tactical finding that came out of the exercise is that our light infantry will have to continue to refine the tactics that capitalize on its unique characteristics. This tends to confirm the operational concept and doctrine as written and amended on the basis of the previous certification exercises. Three areas in particular deserve attention—the defense, the use of combat support assets, and the use of terrain.

The proper defensive tactics for light infantry to adopt are ambush, counterattack, and (when fighting armor) cooperation with divisional and corps antiarmor units. Medium and light antiarmor weapons should be used in ambushes to engage OPFOR armored fighting vehicles in order to destroy selected elements, to delay the OPFOR's advance, or to separate the OPFOR echelons. Once OPFOR armored units have penetrated a given sector, light infantry must endeavor to interdict their lines of communication by ambush and counterattack. TOW light antitank (TLAT) units, attack helicopters, and close air support aircraft can engage and destroy advancing OPFOR armored forces with concentrated fires.

Attempts to use fixed positions to halt an OPFOR armored advance will rarely be effective. Antiarmor

obstacles require massive effort to build and are breached quickly. If large fixed concentrations of infantry forces are positioned to cover the obstacles by fire, they can delay the armor, but they will soon be suppressed by long range direct and indirect fire. If, instead, infantry forces are positioned in static, dispersed, mutually supporting positions, they will soon be bypassed, isolated, and destroyed.

Tanks and armored vehicles can usually penetrate light infantry positions, but the light forces can remain combat effective, unless they are cleared out. The armor, in turn, is vulnerable to ARFOR divisional and corps assets such as attack helicopters, CAS, and TLAT. The OPFOR's lines of communication are also vulnerable to attack by the light infantry.

This does not mean light infantry units should entirely forego dug-in fighting positions or specific static positions. Dug-in fighting positions provide protection for key weapons, ambush teams, and elements supporting raids or counterattacks by fire. Fixed defensive positions should be used to retain key or decisive terrain, to protect antiarmor assets from dismounted assaults, or to serve as a patrol base or assembly area from which a unit can stage raids and ambushes and to which it can retreat if pursued by a larger force.

When this is done, however, units should keep in mind the following:

- Front slope positions are quickly engaged, suppressed, and destroyed.

- Camouflage and deception are as important as cover.

- Mutual support between and within units is essential.

- Multiple firing positions are important for all weapons.

- Reverse slope positions that give antiarmor and crew-served weapons oblique defilade shots are most effective.

- The use of dug-in positions or static parts of the defense must not make the whole defense static or

passive.

Engineers, attack helicopters, Dragons, and TOWs are not effective in ones and twos. This does not mean that they should be positioned in a cluster but that their effects should be concentrated to accomplish a single task in support of the main effort. Units should avoid the temptation to adopt a "fair share" approach to combat support or combat service support assets.

AVENUES

Heavily compartmented terrain, ridgelines, fingers, and streambeds are the light infantry unit's avenues of approach. Hilltops where ridgelines intersect become as important as crossroads. In some cases, OPFOR units in Celtic Cross IV gave up the high ground in order to defend the roads and trails. This left them vulnerable to ARFOR light infantry maneuvering along the ridges. Because of limited maneuver space on ridges, relatively small forces can effectively block a ridge-line for a short time. Mortars and machineguns on ridges and hills can normally provide mutual support both to antiarmor ambushes and to the blocking forces on the ridges.

A light division can maneuver its brigades and battalions in cooperation with each other, but it takes time. In most terrain, light units cannot outrun mechanized or motorized forces, either in the offense or in the defense. Helicopters, when available, can provide additional mobility and flexibility, but the division must rely for the most part on superior intelligence to allow enough time to react to the enemy, and on camouflage and deception to prevent enemy interference with friendly maneuver. Planners must anticipate the time necessary to move units by thinking far enough into the future so that their orders and objectives are not overcome by events.

On the basis of the certification

findings, numerous changes have been made to the division's organization, equipment, and doctrine. Some of the more important changes to infantry units are the following:

- Scout platoons will exchange their PRC-68 radios for PRC-77s.

- A new soldier's load doctrine has been written that decentralizes load configuration to the lowest practical level (based on the estimate of the situation), fixes responsibility for the echeloning of loads, and gives guidelines for load weights.

- High-mobility multipurpose wheeled vehicles (HMMWVs) will be redistributed within the infantry battalions—the battalion mortar platoon will lose two HMMWVs with one going to the battalion executive officer and the other to the support platoon.

- Four three-quarter-ton trailers will be added to the support platoon.

Additionally, CSS and CS units will receive more M203s and squad automatic weapons to increase their local defense capability; the signal and maintenance battalions are to be reorganized; and doctrine has been refined to reflect lessons learned and to fill gaps uncovered during certification.

TCATA's overall assessment was that "the organization design and operational concept of the Infantry Division (Light) is basically sound" but emphasized that "certification should not be construed as a guarantee that the ID(L) will be able to perform all missions in all type terrain, weather conditions, or scenarios" and that the division "must be doctrinally employed" with "a detailed METT-T analysis. . . to ensure that [it] is properly augmented for each particular area of employment."



Lightening The Load

On the Commander

LIEUTENANT COLONEL MICHAEL J. BAYER

Recently, the Infantry has developed a renewed, healthy interest in lightening the infantryman's load. To that end, much time has been spent calculating the precise weight and value of each item the infantryman might carry into battle. The results have caused us to reconsider the policies that have driven these loads up to the point of impairing the fighting ability of our infantrymen.

The time is right to think about another type of load that may affect the fighting ability of even more soldiers, and more units, by impeding training and readiness. This load is the burden we place upon our company commanders in the form of regulations, reporting requirements, and administrative procedures.

The company commander has always been asked to do a great deal, and the administrative workload on him has increased dramatically since the end of World War II. A company commander in 1987 has the same amount of time he had in 1946, of course, but he is being asked to do too many things, things he simply cannot do in the time available. This forces him either to ignore requirements or to falsely report his compliance.

Instead of arguing conclusions—too many demands or, in the context of time and mission, improper demands—we need to work through this problem the way we are working through the fighting load problem. We should first measure the total administrative load to determine the precise nature of the

problem, then go for a solution.

We could begin with the company commander's "administrative TA-50," otherwise defined as all of the regulations that apply to company operations and activities. Every policy, procedure, or regulation that reads, "A company commander will" needs to be identified and the time necessary to do that task calculated to the nearest tenth of an hour.

Once that has been done at the Department of the Army level, all other requirements should be calculated down through the chain of command to the battalion level to pick up each additional responsibility. The time necessary to do these tasks should then be added to arrive at a grand total. Only then will we get a sense of how heavy a load the commander carries into training, administration, and tactical exercises, and ultimately into combat.

The next step would be to establish a regulatory budget or "a company commander's load plan." The writers of regulations and procedures (who don't have to pay the costs of compliance by actually doing the work) have a great incentive to levy endless, detailed requirements that will make their own lives easier but ignore the trade-offs caused by time constraints on the commander. It takes only a few minutes to write a requirement for a company commander to do something, but the day-to-day, month-to-month implementation of that one requirement may take hours, accumulating into days.

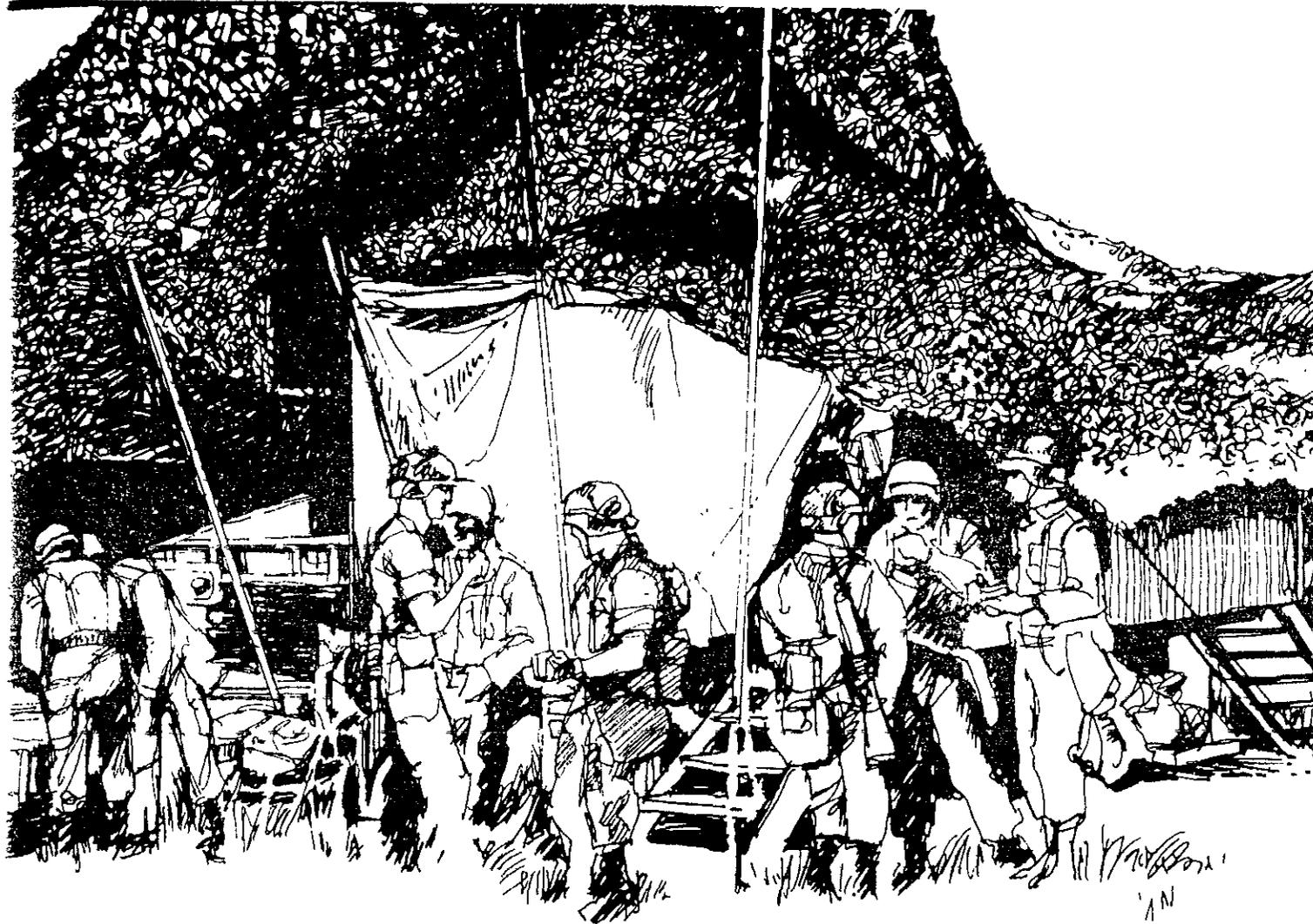
Then we should establish branch level allocations of the commander's

time for major functions at the company level, such as training, security, mess, and the like. It would then be up to the proponent agencies to justify their individual current time demands against these allocations. Once time allocations had been made by branch, additional requirements within a functional area would have to be compared with the previously allocated time. Thus, an existing lower priority requirement would have to be deleted before a new one could be added.

In summary, this program would add up existing requirements; it would establish an overall allocation of responsibility for time management within each functional area; it would mandate a zero-based time budget by functional area; it would cause everyone who generated a requirement to justify the benefits against the cost of executing that requirement; and it would force an equal reduction of existing requirements before any new ones were initiated.

We frequently give future company commanders an in-box drill to test their ability to set priorities. This program would put requirement writers in the same position and would ensure that commanders have time to do the things that truly count in preparation for future battles.

Lieutenant Colonel Michael J. Bayer is Deputy Inspector General, District of Columbia National Guard. He has also served on active duty and with the Ohio Army National Guard. He is a graduate of Ohio State University and holds a law degree from the District of Columbia Law School.



IMPROVING CP SURVIVABILITY

Lieutenant Colonel Jack Silva

There is little doubt that battalion command posts (CPs) generate too many signatures for an enemy seeking them. CP vehicles are generally different from other vehicles in a unit (the M577, for example, has a profile different from that of the M113 or the Bradley, and the profile of the 5-ton is different from that of other trucks). Generators make noise and heat. Lots of people come and go, creating a discernible traffic pattern. And radios create an electronic signature that virtually begs for enemy counteraction.

The problem of signatures, especially electronic and thermal, is made more difficult by the requirement to position a CP where it can maintain reliable FM radio communication. Generally, such positions are on or near high ground, which increases a CP's chance of detection. It also eases the enemy's workload if he is smart enough to use our templating techniques against us before or during a battle. Since we are creatures of habit, we are also predictable.

Moving a CP frequently is one way to increase its survivability—and a good way to reduce the effective-

ness of the staff and the commander. But there is a way to “move” the CP electronically while keeping it physically stationary for longer periods.

This technique uses currently available radio equipment and requires little local fabrication. It does, however, depend entirely on training and maintenance and is not a substitute for radio net discipline and short transmissions. This technique by itself, of course, will not make a CP invulnerable; it must be used as part of a comprehensive system of operations security.

Figure 1 illustrates the basic concept, which is called REBRO (for re-broadcast). It allows a CP to hide electronically by giving the appearance of almost constant, or at least frequent, movement. REBRO makes templating CP locations more difficult by eliminating the need to use communications-friendly (and, therefore, obvious) terrain for CP sites. It provides more physical protection from enemy fires by allowing a CP to go into relatively harder-to-hit positions such as in a village located in a valley or at the base of a steep hill.

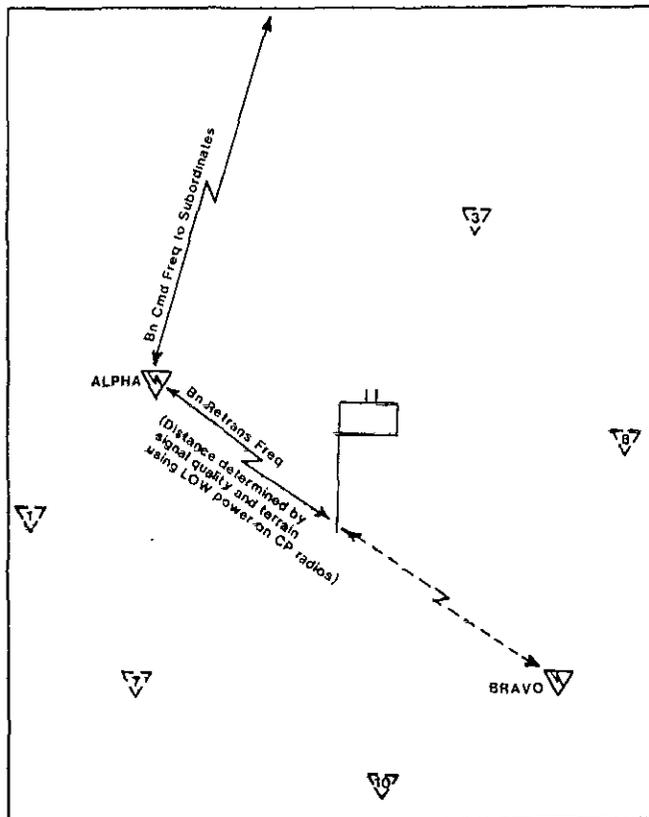


Figure 1. Basic REBRO concept.

REBRO will draw an enemy's attention away from a CP itself, and will allow a CP to occupy any protected position longer, because the enemy will be targeting highly mobile and frequently moved radio retransmission vehicles rather than the CP itself.

Keeping a CP in one position for longer periods of time reduces the disruption to staff work that results from more frequent moves. The retransmission (retrans) vehicles are physically smaller, easier to set in motion, and more mobile than armored CP vehicles. If moved judiciously, the retrans units should have at least as good a chance of survival as CPs have with the current methods.

Conceptually, REBRO resembles a planet (the CP) with two moons (retrans units) in orbit around it. Procedurally, the CP communicates with subordinates through one retrans (active) while the other retrans (dormant) monitors and provides a back-up at another position. The CP alternates the retrans units between their active and dormant roles, ordering the last active retrans to go dormant and displace when it orders the dormant retrans to go active.

Although REBRO is obviously appropriate to defensive operations, especially in a deep sector, with practice and refinement it offers good possibilities for offensive applications as well. In the attack there would be less emphasis on the deception and survival aspects of REBRO and more emphasis on the retrans units' more traditional role of extending the range of FM communications.

In the basic REBRO concept, the CP is put in the

most protected position available in the sector or zone. This position should be "in a hole"—not communications-friendly and therefore an unlikely place for the enemy to look. The CP site should provide physical protection and terrain masking, and it may be farther from the line of contact than we are accustomed to now. Other CP site considerations as outlined in FC 71-6, such as space, access, drainage, and hard stand, apply equally here.

The two retrans units are offset on communications-friendly terrain as far from the CP as possible so long as the CP can still use low power to reach a retrans reliably. Retrans units can be positioned forward of the CP, laterally, or even behind it in some cases.

In a battalion, the companies are kept on the command frequency so the battalion commander, the S-3, and the second-in-command (2IC) can communicate directly with them when not in the CP. The CP uses the retrans frequency to send to the retrans units on low power and the retrans units use high or low power to retransmit to the companies.

Numerous retrans sites should be planned and the retrans units moved often, or a racetrack-type circuit route should be planned for the retrans units to use on the move. Communications must be good over most of the racetrack (Figures 2 and 3).

Some situations or positions may allow the CP to connect a GRA-39 remote set by wire to the retrans radios (offset at least one kilometer) and to avoid using the CP radios entirely. On order, the retrans disconnects the WD-1 wire and drives away to another retrans position, while the CP crew reels in the wire (new, well-spliced WD-1 should be used so that it will reel easily without snagging). This may be a good method to use during lulls and battle preparation, but

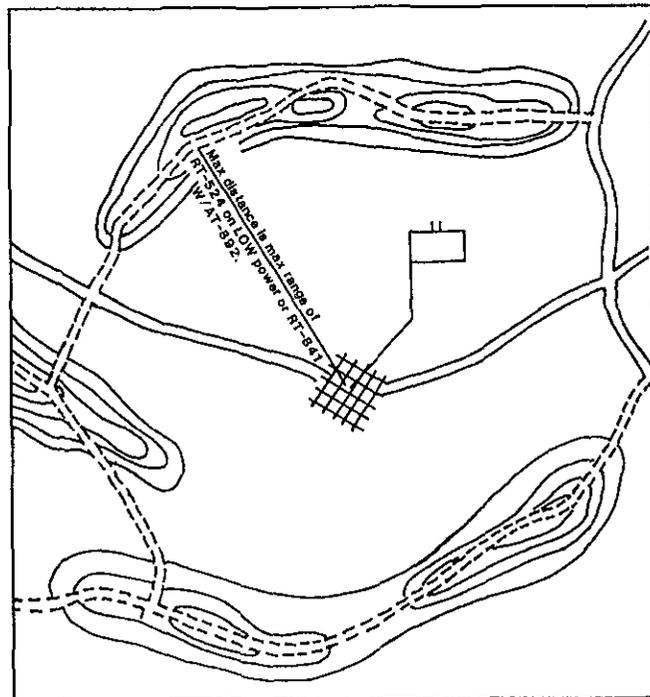


Figure 2. Basic racetrack circuit.

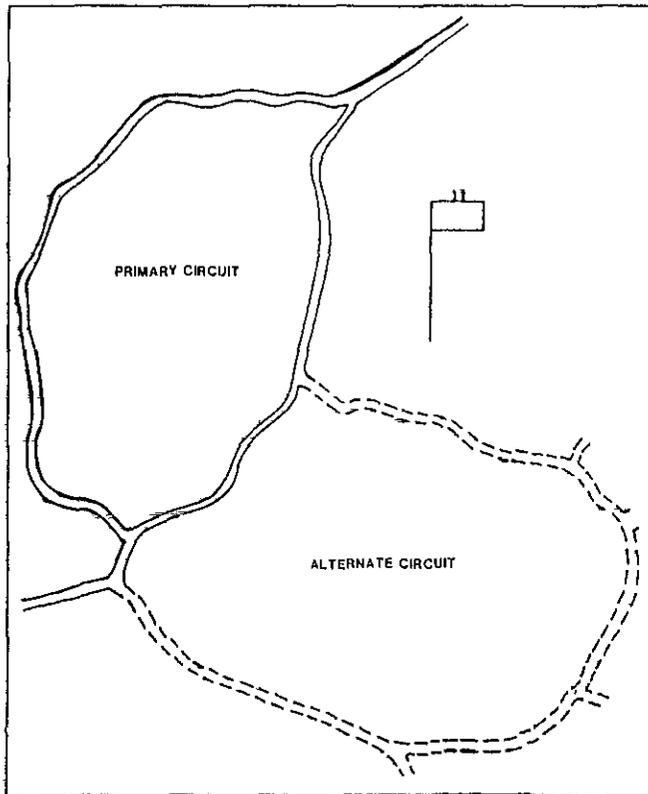


Figure 3. Second racetrack circuit.

not for actual combat because of the relatively short distances over which the wire can be used.

A well-trained retrans crew of three men will give the unit a better sustained operations capability and will make set-up and take-down faster. The retrans can probably get by most of the time with the vehicle's normal whip antenna (AS-1729), but it should also have an OE-254 or an RC-292, especially if used between the battalion and brigade CPs. Each retrans vehicle should have a short (two-to-three-foot) length of ordinary water pipe (about three inches inside diameter), U-clamped on a bracket and bolted vertically on the vehicle as an RC-292/OE-254 mast support and a base for rapid set-up and take-down. When the mast is set up only high enough to communicate, such a bracket eliminates the use of guy lines for erecting it, and if the full mast is used, the bracket allows the crew to use only one set of guy lines. At least one, and probably two, of the guy lines can be secured quickly to the vehicle itself (opposite the bracket).

The battalion CP can put an auxiliary receiver (R-442) on the battalion command frequency to monitor whatever signals it can receive while in a hole.

On the battalion command net this system can be used with VINSON speech secure equipment, or it can be used in the clear if one or more stations have equipment problems. Although using the retrans units will not improve the security of communications, it should improve the security and survivability of the whole communications system.

Once a battalion is confident that such a system works, the RT-524 radios in its CP can be replaced

with RT-841 radios (RT-524s are VRC-46 sets, and RT-841s are PRC-77 sets). The low power of RT-524 sets is 8 watts while the maximum power of RT-841 sets is 2 watts. The RT-524 has four times the power (and twice the chance of enemy detection) of the RT-841. (I personally believe the RT-841 is more reliable than the RT-524.) If the CP uses RT-841 sets, all stations with RT-524s must be set in the new SQUELCH/OFF position.

The battalion signal officer may be able to further reduce the CP's electronic signature by replacing some of the vehicular long whip antennas (AS-1729) with locally fabricated short whip antennas and mounts from the PRC-77 radios (AT-892).

If the brigade commander, his 2IC, and his S-3 know the system, they can gain an extra entry point to a battalion commander, to his 2IC, and to his S-3 by changing to the battalion or brigade retrans frequency.

Figures 2 and 3 illustrate variations on the basic REBRO technique. When establishing a racetrack as in Figure 2, the farthest point on the circuit should ideally still allow uninterrupted communication. The retrans unit on the circuit can continue driving slowly around the track, or it can stop for short periods at

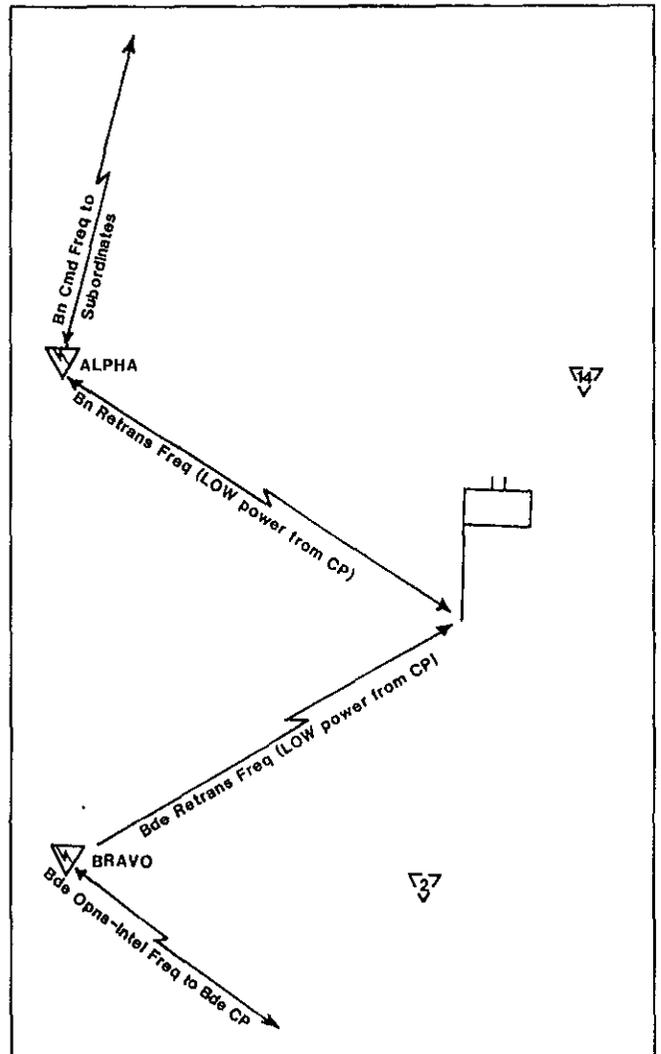


Figure 4. Retrans on two nets.

different locations that offer the best signal quality.

As an alternative, one vehicle can operate this way while the second one stays on high ground to ensure communications integrity. (This may require two retrans frequencies.)

A racetrack with the CP located outside the circuit (Figure 3) is probably a more secure technique, because the center of the circuit may draw fire if the enemy is able to confirm through photo or radar reconnaissance that what electronically appears to be a moving CP is really a single light vehicle. In this arrangement, one retrans unit travels the primary circuit while the second is halted and dormant on the alternate circuit.

MORE CONSIDERATIONS

Some additional considerations will help give REBRO a better chance of succeeding in continuous operations:

- By SOP, retrans units should be given position priority over everything in the battalion's sector or zone except short-range air defense weapons.

- By SOP, retrans units should have a maintenance priority equal to that of the commanders' vehicles. A failed radio means no retransmission, and immobility offers a retrans unit up to sacrificial destruction.

- Imagination and innovation, tempered by prudent experimentation, will soon lead to improvements in the basic system outlined here.

- The CP and both retrans units must train and practice together so that they can set up, take down, and displace smoothly with the least possible disruption of communication. The retrans units use a modified "Set-Move" drill to displace with minimum radio traffic among them, and the retrans units use crew drill techniques for set-up and take-down. All of these can be performed as a tactical exercise without troops (TEWT).

- Unit organization days are perfect times for a retrans unit crew drill competition and can highlight the crews' place in the organization.

- The AM/RTT (AN/GRC-142) should be used for all bulky periodic reports such as the commander's intelligence summaries, situation reports, logistics reports, and fire support target lists and reports. The AM/RTT should be an operator's tool and its crew should be kept busy. The AM/RTT vehicle should be offset from the CP and the two linked together with WD-1 and telephones to reduce the use of runners. The AM/RTT must use *only* a directional antenna from a masked position.

- The S-4 must have equal access to the AM/RTT for his reports or he will find FM too convenient to ignore. He is, after all, as mission-oriented as anyone else.

- Commanders must personally discipline their nets. A 45-second break between the multiple 30-second

transmissions of a lengthy message invites other stations to interfere unless they all know through experience that everyone else will give them the same courtesy. An enlisted radio operator will find it difficult to control or discipline a net in which most of the other stations are operated by officers, and this is an unfair position to put an RTO in.

- The retrans crews must receive high priority for the delivery of hot meals and mail. Since it will seldom be possible to bring them in for maintenance or rest, they merit a good degree of attention while deployed.

- During lulls and battle preparations, when retrans units are most likely to be stationary for relatively longer periods, they should conduct as complete a PMCS (preventive maintenance checks and services) as possible and should be visited by a contact team that is capable of detecting probable future mechanical failure. Retrans crews should try to see that at least two of the crewmen get as much sleep as possible during these periods.

- Each retrans unit should carry a spare RT-524 with cables and a VINSON secure set so it can relay messages if the retransmission control box (C-2299) fails. The retrans unit's basic on-board load should also include a spare vehicle engine alternator and the tools required to change it while deployed on site.

OTHER METHODS

In conjunction with REBRO, other methods can be used to help secure and keep communications, including the following:

- Radios should be used only to give orders or render reports. Detailed coordination or explanation on FM voice radio will get troops killed and CPs destroyed. Routine formatted reports should go by messenger or AM/RTT. FM radios between battalion and brigade should be used only for time-sensitive information that either affects the fight or results from it.

- Transmissions must be kept short—between 30 and 45 seconds with breaks of 45 to 60 seconds of silence between transmissions. The proword "Message Follows" should be used to alert the intended recipient to be prepared to copy, and the proword "Break" should be used at the end of each 30-to-45-second transmission until the message is completed (proword "Message Ends—Out").

- Operational terms should be used. FC 71-6 is a good start, but Appendix L can be easily expanded so long as all the terms and codewords are fully understood throughout a division. Long lists of operational terms become second nature if they are used habitually in daily face-to-face and telephone conversations. Brevity on the telephone should also be practiced in garrison.

- Operators should avoid radio checks and should not ask recipients if they are prepared to copy or if

they have a good copy. Two well-spaced squelch breaks can be used to "Roger" a transmission.

- Every omnidirectional antenna should be masked as much as possible, with something high and solid between it and the enemy.

- Vehicular radio operators should all use headsets and low volume settings. Headsets improve the quality of reception and focus the operator's attention while low volume settings reduce feedback (shriek or squeal) and create a better working environment for other personnel.

- Radio headsets and handsets should be disconnected during periods of imposed radio-listening silence. This is a good opportunity to clean the connector terminals and replace missing "O" rings.

- Three or four self-authentication sets should be written on the call-sign/frequency board so that they are easily available. Authentication should be practiced using CEOI extracts on the telephone in garrison.

- The retrans units should displace using one of two criteria: the length of time in a given location or the number and length of transmissions from a given location. Retrans units should move after two to four hours (but never after a fixed period) when things are relatively quiet and more frequently when there is more traffic. During periods of silence, they may stay in one location longer than four hours. Alternatively, in periods of high radio usage, retrans units should be moved after 10 or 12 transmissions of 30 to 35 seconds each.

This REBRO technique can be used on only one FM frequency, a limitation imposed by the number of retrans units in a battalion and by the need to alternate between retrans units, especially during battle. One alternative method is to use both retrans units simultaneously on two different frequencies or nets (command and administrative-logistical, for example, or command and operations-intelligence, or battalion command and brigade command). Although such a refinement is possible, everything always has to work properly; it therefore places a premium on maintenance, site selection, and frequency management.

Once the basic REBRO configuration has proved reliable, one retrans can be used on the battalion command net and the second on the brigade operations-intelligence net (Figure 4). There are two reasons for this: First, the brigade commander is normally forward in a position where he can use his vehicular radio to talk directly to the battalion commander on his vehicular radio (assuming that both commanders fight the battle from observation posts and not from CPs or tactical operations centers). Second, because the command nets are for commanders and S-3s, the high volume traffic net between CPs is most likely to be the operations-intelligence net and not the command net. (The retrans units may operate on the move while displacing to alternate sites; signal

quality may suffer marginally.)

If the battalion and brigade 2ICs take the AM/RTT equipment from the S-4s, this equipment can be used for the high volume battalion-to-brigade formatted report traffic. Using the AM/RTT for lengthy, periodic formatted reports has worked well in some brigades in Europe.

The REBRO technique does not offer much help for the fire support officer (FSO) unless he can maintain FM communication directly with the direct support battalion or battery fire direction centers (FDCs) from his forward position. This may be possible because there are four entry points for his traffic—the battalion FDC and three battery FDCs—plus the FDCs of reinforcing units in some cases. Until additional equipment is available, the FSO may be limited to monitoring in the CP and may have to send his vehicle some distance from the CP to transmit to artillery units, or remote using his wheeled vehicle and AN/GRA-39, unless his section fabricates directional antennas (see FM 24-18, Chapter 3).

This is a harsh judgment that artillerymen won't like (nor should they), but the cold facts are that once the REBRO system is established it makes no sense to give the game away by coordinating fire support on an omnidirectional antenna using high power, especially since a nuclear-capable unit's fire control net is probably a higher priority target than any maneuver battalion's command net.

A final note to commanders, staff officers, and radio operators: REBRO requires patience if it is to function properly and provide good communications and greater survivability. The technical characteristics of the retrans equipment will cause some delay in radio transmissions, so it is unrealistic to expect an immediate response unless the retrans is bypassed by direct communications (commander-to-commander from their OPs). Commanders, S-3s, and signal officers will have to pay more attention to training their retrans crews in troubleshooting, field expedient maintenance, and land navigation. This is a time-consuming redirection of resources, and progress in the effort won't be as fast as may be desired.

REBRO can meet the demands of electronically intensive contemporary combat operations and give commanders increased survivability and better working conditions in their CPs. The quality of its function depends fully on the quality of its preparation, but it is something we have and can use now. We don't have to wait for the development of some future device that will remote the antenna away from the radio and the operator.

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AUFTRAGSTAKTIK

By Captain Frank A. Kerkemeyer

The AirLand Battle of the future will be characterized by high mobility, high lethality, and nonlinear operations. As the fog of war sets in and communications fail, success will depend to a large extent upon the ability of junior leaders to take the initiative, fight the battle, and exploit opportunities.

If we are to train as we will fight, then our command climate needs to embrace a system or concept that will develop these abilities in our junior leaders. Such a concept is the German *Auftragstaktik*, which is basically a command and control procedure. This concept, well proved in peace and war, is now used by the Bundeswehr (the Army of the Federal Republic of Germany), along with a command climate that promotes its use.

From the German point of view there are only two command and control procedures—mission-oriented and order-oriented. To understand the mission-oriented, we must first look at the concept known as *Auftragstaktik*.

This concept is part of a larger picture that encompasses the ideas of mission-oriented orders and *Fuehren durch Auftrage* (leading by missions). In its

simplest form, *Auftragstaktik* can be described as a process in which the superior assigns his subordinate mission without providing him the step-by-step "how-to's," which then become the subordinate's responsibility.

Thus, the subordinate is allowed to develop a variety of solutions to a single problem and, after evaluating them, to choose the best one and supervise the execution of it. The manner in which a mission should be performed always depends upon the tactical situation and the status of a unit's personnel and equipment. The subordinate who has full knowledge of these factors therefore is able to take the initiative and make on-the-spot decisions, within the commander's intent. This does not dispense with objective-oriented supervision, but the superior intervenes only if the manner of execution endangers his intentions.

In a broader view, the concept is characterized by a distinct relationship between the superior and the subordinate. The superior determines the objective to be achieved and assigns a clearly defined mission. He makes sure the subordinate has available to him the forces, the resources, and the authority he will need to

accomplish the mission. Additionally, the superior provides information concerning his own superior's concept of the operation and lays down details only to the extent necessary for coordination within a broad scope. This need for coordination particularly applies to interaction with forces that are not subordinate to the commander executing the mission or to resources that are not immediately available to him.

The subordinate is given considerable latitude in the way he executes the mission. He uses his own initiative to develop his operation plan and determines the necessary details. Whatever he may do, he remains committed to the substance of his mission and to the concept of operation of the higher level of command. (As said in German, "The mission is sacred to him.") He combines obedience with thinking in broader terms and with a willingness to assume responsibility. Great demands are made on his leadership ability, his initiative, his power of enforcement, and his professional qualifications.

At the same time and in view of the number of people involved and their relatively unfettered freedom of action, the superior can expect mistakes to happen. Mistakes are looked at as learning tools to develop subordinates without destroying them.

When using order-oriented tactics (*Befehlstaktik*), on the other hand, the accomplishment of an assigned mission is ordered down to the last detail. This does indeed increase the uniformity of action for the accomplishment of certain missions, but it also restricts the subordinate's initiative and freedom of action and reduces flexibility. Above all, it does not meet the requirements of fluid situations that develop during operations, particularly when major mechanized forces are involved.

Order-oriented tactics also try to adopt a continuously centralized method of command and control that, because of the detailed orders, also requires a centralized mode of supervision. Because of modern information and communication systems, there is a constant danger that orders and requests for information may bypass intermediate levels in the chain of command.

DISASTER

The Bundeswehr believes that *failing* to use the concept of *Auftragstaktik* is a recipe for disaster, and feels that history has often borne out this idea.

Today, *Auftragstaktik* works for the Bundeswehr because of a combination of certain characteristics of its personnel and training systems, coupled with a command climate in its schools and units that reinforces it.

To begin with, the Bundeswehr is a conscript Army. All new recruits for a company report in on the same day and, depending on the type of unit, are discharged on the same day 15 months later. The officers

and NCOs serve as cadre and have longer tours and enlistments. For instance, a typical company command tour is four years, which limits personnel turbulence among leaders.

Another important consideration is that all officers were first NCOs, have had the same training courses as their NCOs, and have served, to a limited extent, in NCO duty positions. This provides for a better understanding of the roles, responsibilities, and general experience of leaders at each level.

Finally, the Bundeswehr has a common training plan (*Gemeinsamer Ausbildung Plan*, or GAP), which quarterly outlines the training requirements by topic and hours of instruction for each type of unit but allows a commander and his subordinate leaders significant flexibility in the way they go about accomplishing the training.

There is no doubt that this stability and common training background contribute to success. The primary reason for that success, however, is the climate within both the school and the units that allows a philosophy such as *Auftragstaktik* to be taught and practiced.

RED FLAG

Auftragstaktik is a red flag that runs through all Bundeswehr doctrine down to the lowest level, including branch specific manuals. It has its origin in the Bundeswehr's HDv 100/200 Army Command and Control System, which states that the mission should leave the subordinate commander as much freedom of execution as possible.

The German Army believes that *Auftragstaktik* must be related to an overall training concept. For it to work, it must be a philosophy that is ingrained in all leaders from the beginning and must be based on a uniform Army-wide understanding of doctrine and specific tactical techniques and methods (the way to cross a river, for example). The school and unit training system is oriented toward providing this level of common understanding. As a result, one will usually hear the same approach articulated by commanders of various units on such generic subjects as creating a defensive position or reducing an obstacle.

Beginning with the instruction in the branch schools, soldiers are indoctrinated in the concept of *Auftragstaktik*, and it is practiced continually. This is true in all the schools, beginning with the NCO candidates, who are taught to understand the commander's intent. In fact, the soldiers' training relies heavily on their reacting to given situations without the benefit of detailed "how-to" instructions. They are taught the four principles of dealing with any situation: Estimate the situation; plan possible courses of action within the commander's intent and choose the best one; issue orders; and supervise the execution.

This basic concept is then reinforced through the rest of the NCO's development in both garrison and

field situations. For example, at the Supplemental NCO Course, soldiers equivalent in rank to our corporals and sergeants are given a variety of garrison situational exercises to play out, such as a Charge of Quarters handling a drunken soldier. An NCO is given complete latitude in developing his solution. The exercises are videotaped, and then the soldier is critiqued by his peers and the instructor on his employment of the four principles in dealing with the situation.

The method of tactical instruction used in the branch schools also reflects a concern for *Auftragstaktik*. Most of the instruction is done by the students in the course, and the students rotate through the leadership position the course is designed to train. For example, all students attending a squad leader's course hold the position of squad leader for a squad of their fellow students one or more times during the course.

While holding this position, a student is given tasks to teach the others and has access to classrooms, training aids and, if needed, vehicles and a training area. He is not given specific details or a lesson plan on what to teach. The course monitor allows the student the freedom to teach the tasks as he sees fit. The course monitor serves only as a mentor to the student leader, advising him at various points on what he did well and what he could have done better. During the training, the student-instructor also acts as mentor for his fellow students.

The idea of always giving the leader the flexibility to devise his own solution is seen in tactical training in schools, because this training does not generally include maneuver drills (as defined by the U.S. Army). Bundeswehr leaders seem hesitant to use tactical battle or maneuver drills, because they feel a drill, once it is initiated, leaves little control to the squad leader. They believe that, during World War II, German Army squad leaders, because of drill training, too often acted out of instinct, and with disastrous results. Bundeswehr NCOs today are therefore taught to use only common sense and initiative in formulating a solution and then acting upon it.

The concept of *Auftragstaktik* continues up through the officer courses. In the German school system, an officer is first taught to develop a logical thought process for solving tactical problems through the use of the estimate of the situation.

Next, he is trained to conduct tactical operations by using only short, concise orders. He receives orders that address only the forces available, the space he can use and the time for the mission to begin. This allows him maximum flexibility in the performance of his

mission within the intent of the next higher commander. As long as he stays within the bounds of his intent, there is no "school solution." The emphasis is on orders that address the essence of the requirement.

Unit training also reflects a focus on *Auftragstaktik*. At the unit, training requirements and taskings take the form of mission-type orders, and leaders develop their own solutions to them. For example, the GAP might indicate there is to be four hours of map reading in accordance with Regulation X. A company commander blocks out an appropriate amount of time on his unit training schedule and designates an instructor. The instructor, knowing the needs of his soldiers, writes the lesson plan; chooses the necessary training aids and the training area; selects an evaluation method; and conducts the training.

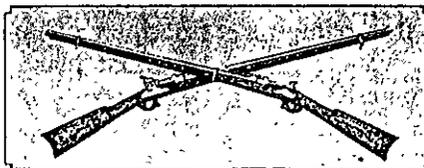
Auftragstaktik is also seen in the routine day-to-day operations of a unit. The company cook who has the mission to prepare the noon meal, for example, has his meal plan and recipe book to serve as a guide, but these are not considered concrete instructions. He may put an additional spice in the recipe for flavor or buy a seasonal fruit or vegetable to substitute for another, if it is more cost effective.

The climate of the Bundeswehr is one in which this concept of *Auftragstaktik* can be found in any part of the garrison training or field exercises. Overall, it works very well, because it is taught and practiced throughout.

The U.S. Army, by contrast, espouses the idea of *Auftragstaktik* but in practice does not seem to encourage its use. The result is junior leaders who are not encouraged to act on their own initiative. If our Army wants leaders who will take the initiative, fight the battle, and exploit opportunities, it will need to establish a climate that supports these desires, much as the German Army has done.

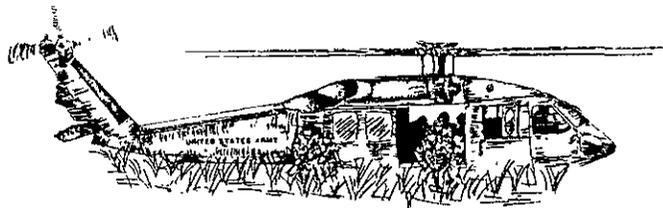
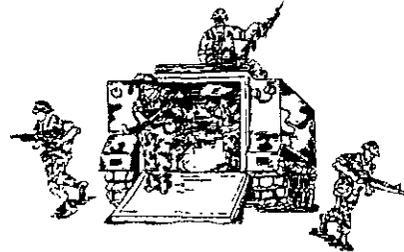
We first need to determine what must be done to incorporate a concept such as this into unit level operations—specifically, a command climate that fosters it and a unit training program that practices it. Then we should embed it into the school environment so as to produce leaders for the field who will practice it routinely. Only then will efforts in these areas develop the type of leaders needed for the future AirLand Battle.

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COUNTERING TERRORISM IN THE TRENCHES

Lieutenant Forrest L. Davis



Self-preservation is a certain, unchanging, inalienable right. Commanders demonstrate this right when they approve security plans.

And yet, too often today a U.S. battalion task force deployed alone to a terrorist environment continues to be a muscle-bound giant pitted against a much smaller and more agile enemy.

In planning for security against an unconventional threat, our task forces typically go with what they know—the *last war*. They build fighting positions, plan interlocking fields of fire, and design elaborate alert plans around 360-degree perimeters. In effect, the “Vietnam base camp” syndrome returns, and full alert contingency plans are developed, complete with wailing sirens.

If, however, at 0200 hours on any night, four unidentified personnel are detected within our perimeter, do we want our entire battalion’s soldiers running to fighting positions in partial uniform and without the facts? Do we want 20 minutes of chaos? Or do we simply want to contain and neutralize the threat?

The basic problem is that our current antiterrorism doctrine does not reach to the lowest levels in telling a task force commander how to organize, prepare, and employ his organic forces toward meeting every potential “special threat situation.” Publications such as FC 100-37-1, Unit Terrorism Counteraction, do include suggestions that help the infantry commander plan for specific operations—that is, convoy security, deployment, and the like. By themselves, these measures are excellent. But they are designed only to deter attack and, therefore, are defensive (or proactive) security

measures. If an infantry battalion commander is going to fully meet his security responsibility to his soldiers, he needs an offensive (or reactive) capability as well.

TC 19-16, Countering Terrorism on U.S. Army Installations, and FM 34-60, Counterintelligence, explain in some detail how an installation or post-level commander can organize his command to counter the full range of terrorist attack options. Thus, he can organize both a threat management force and a crisis management team and make them responsible for controlling and executing the antiterrorist plans. With imagination and special training, the guidance offered in those publications can be applied to an infantry battalion task force as well.

In 1986 the 2d Battalion, 504th Parachute Infantry, 82d Airborne Division, deployed to the Sinai Desert in the Middle East to continue the U.S. commitment to the Multinational Force and Observers (MFO) mission. This battalion task force decided to use the post-level guidance for its security planning.

The limitations under which the task force had to operate were similar to those any U.S. unit could expect to meet elsewhere.

First, the task force was the guest of a host country, in this case Egypt. Understandably, the worse public relations action the battalion could possibly take would be the inadvertent shooting of an innocent, or even criminal, local citizen. One accident or mistake and the task force could expect to be the target of popular, local criticism and, conceivably, of independent zealous action.

Second, the host country considered itself respon-

XO

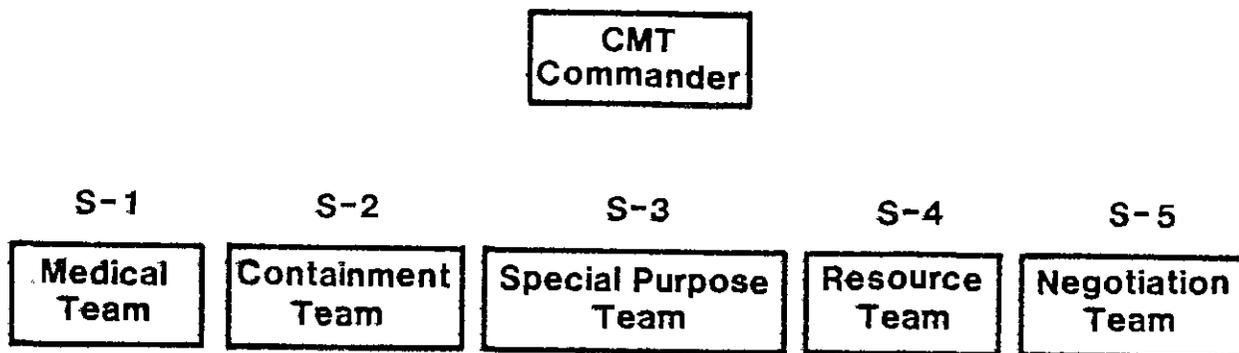


Figure 1. Organization of the crisis management team (CMT).

sible for the battalion's security because the battalion was on its soil. Although this was comforting, it in no way diminished the commander's security responsibility. In the event of a special situation that seriously threatened the lives of his men, was the commander to wait for the host country's response? Quite rationally, the commander had to plan as if the host country would be incapable of responding.

Third, the security mission against a potential terrorist threat, the only reasonable one, had to be planned using organic equipment and, most significant, conventional soldiers.

The crisis management team (CMT) concept was successfully applied, with each staff section being made responsible for special teams (see Figure 1). The application was consistent with normal operations and, in most cases, the sections merely had to reorient their perspectives and priorities.

The S-1 section assumed responsibility for the medical team. Deployed in anticipation of one casualty or multiple casualties, the team prepared for either event through mass casualty exercises. Since this team would have existed regardless of the commander's application of the CMT concept, its creation was essentially administrative.

The containment team, an S-2 section responsibility, was a platoon-size element responsible for sealing off or containing any area in which potentially hostile elements were known to be. In essence, the team would surround the enemy. This team was responsible for the inner security perimeter and cooperated closely with the task force Military Police element, which assumed responsibility for the outer perimeter. No one was permitted to pass through either perimeter without CMT approval. Together, these security rings allowed the task force to literally seize control of a designated area and with it, the tactical initiative.

The only tactical strike element within the CMT was the special purpose team (SPT). Employed by the S-3,

this team consisted of sniper and security elements that could mutually support each other in clearing buildings or conducting other military operations on urban terrain (MOU).

The resource team (S-4) was charged with providing any special supplies needed by other teams—anything from hot chow to 7.62 match ammunition. Special contingency items were set aside and held in reserve.

Interrogators serving as linguists, along with an attached civil affairs officer (S-5), made up the negotiation team. When used, the team had two basic objectives—to calm the threat and to gather information. (The concept of employment of all these teams is shown in Figure 2.)

PLANNING

In the Middle East, the typical terrorist target is not power stations and resupply lines. The target is people, often Americans. During the battalion's predeployment planning stage, therefore, the threat and the most likely methods of countering that threat were considered, and counteractions in the form of contingency plans were developed. For the most part, the proactive security measures that were adopted were deemed sufficient to prevent unnecessary vulnerability. For two unlikely yet potential scenarios, however, such measures were clearly not enough.

These two scenarios included, first, a terrorist breach of the base camp perimeter in order perhaps to plant satchel charges around the personnel billets. This was labeled the "detected intrusion" scenario. The second scenario was, of course, a hostage situation.

In both events, a reactive capability was needed. And in each, the special limitations requiring no mistakes, unilateral response, and the use of organic assets were considered.

Detected Intrusion. This contingency plan had as its

objective the containment (not engagement) of any suspicious elements located within the base camp, because, according to one qualified estimate, sapper teams could quickly place enough charges within the facility to kill 100-120 people. Modeled along the CMT concept, the plan envisioned the use of as many as four of the five crisis management teams.

Three active security elements operated within the base camp—an interior guard force, the Military Police, and the containment team. These three elements worked together to execute what were called “emergency actions.” For example, when a suspicious activity was recognized by any of the three elements, the other elements were notified immediately on an emergency radio frequency, and all of them essentially “stood on their toes.”

Thus, the guard force recalled enough men to post additional guards around the billet areas. The containment team prepared for deployment, and the Military Police dispatched a patrol to investigate.

When he arrived at the scene, the Military Policeman was asked to make an assessment. Is there activity? Is it criminal (burglary) or terrorist (are there personnel with weapons or has there been an explosion)? And finally, are the people responsible still in the vicinity? If so, the MP would fix their location and transmit this information to the containment team.

The containment team consisted of one platoon of two squads, and through rehearsals it was found that a single squad was enough to contain any major area within the base camp. When the signal to execute was given by the officer in charge of the tactical operations center (who was also on the emergency net), the team deployed, contained the identified area, and relieved the MP element. In moving into place, they allowed themselves to be seen, but their movement was quick

and always covered by overwatch fires. During numerous alerts, the containment team was on the scene within four or five minutes of the MP request for support.

Following the containment of an actual threat, the security posture of the base area would be improved. Movement would be kept to an absolute minimum and, through the linguist personnel or negotiation team, the host country would be invited to assume control over the situation. Assuming no unique need existed that would necessitate the employment of the medical, resource, or special purpose teams, the detected intrusion scenario and the security of U.S. forces would be complete.

Hostage Scenario. In the development stages, the hostage scenario was virtually identical to the detected intrusion scenario. An identified terrorist element would be contained in a specific structure or location, and freedom of movement within the area would now be a U.S. prerogative. The difference, of course, was that the terrorists would be holding U.S. personnel as hostages.

After identifying the terrorist element and confirming the presence of U.S. hostages, higher headquarters would be immediately notified and the negotiation team would be deployed to collect information and calm the situation. Assuming there was no imminent threat to the hostages, the activities of the crisis management teams would still be defensive. If the threat should change, however, and if relief by higher headquarters teams could not be expected, the special purpose teams would be deployed to assault and neutralize the situation.

A special purpose team was organized consistent with the battalion’s sniper team concept. Thus, since two snipers were normally supported by a security

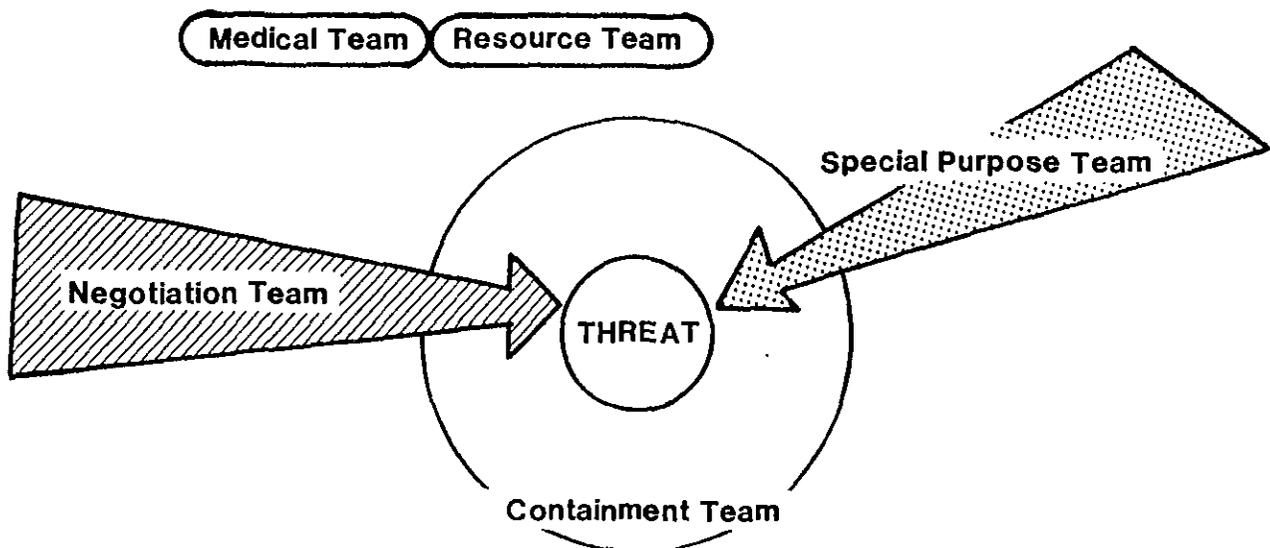


Figure 2. Concept of employment.

team of three, the five-man team was left intact but, instead of the security team supporting a sniper team, the two-man sniper team supported a three-man "building clearing team." We found we could organize two, or as many as four, special purpose teams from a pool of selected personnel from the battalion's scout platoon.

It must be emphasized that the employment of a special purpose team was to be considered the last of possible last resorts. The soldiers who made up the team were not special operation candidates, nor had they received intensive, antiterrorism training under uniquely developed conditions. They were, however, the products of a discriminating, inter-battalion selection process. They were snipers and scouts, and were well rehearsed in MOUT tactics—the best the battalion had to offer.

EFFECTIVE COUNTER

With the exception of the hostage scenario, the organization and system used by the Sinai task force proved an effective and potent counter to all terrorist threats. The counterterrorism organization allowed the unit to isolate any recognized elements within its area of operations for subsequent transfer to local national authorities. The system also achieved a balance between the task force's security needs and the political requirements of its non-combat mission. But it could have been better. Indeed, with additional specialized training, the task force could conceivably have countered all terrorist threats.

If we are going to be serious about securing ourselves from terrorism in every aspect, making it better means, first, considering this or a similar organization as a single component within the entire framework of the counterterrorism structure. Ideally, any organization adopted for use by an infantry battalion should complement the unit's existing structure. Second, clear doctrine should be developed and disseminated that outlines the crucial training tasks in developing a battalion-level CMT. This is no simple task, but considering the possibility of increased U.S. involvement in low-level instead of mid- or high-intensity operations, the doctrinal focus is warranted.

Developed in accordance with TC 19-16, a battalion level counterterrorism force could complement other crisis management systems and contribute to a smooth transition in jurisdiction from one headquarters to another. For example, if a deployed task force should find itself in the midst of a special threat situation, a relief in place by a higher headquarters would be simplified because each echelon would consist of common organizations employing similar terms. In effect, the establishment of like organizations as an Army-wide standard would simplify communication, coordination, and (in situations in which time was critical) unity of action.

The Sinai task force demonstrated that an infantry combat-oriented unit can be trained to respond appropriately in politically sensitive environments, but not without certain trials in training.

Two training concepts dominated the preparedness of our CMT. The first was containment, which required reorienting our soldiers' perspectives. The second was the training of the negotiation and special purpose teams.

Clearly, infantry soldiers are geared toward moving, shooting, and communicating, with particular emphasis on shooting. They are not sensitized to giving a potential perpetrator every benefit of the doubt, such as would be necessary in the establishment of a containment perimeter.

During our early training exercises, for example, the task force's training scenario described "two individuals, possibly armed, seen moving in the shadows near the storage building." In one instance, the containment team squad leader simply ordered his squad to assume battle formation, conducted an assault, and accomplished the "5-S's" (search, silence, segregate, safeguard, and speed to rear) on the two individuals.

On another occasion, the MP reaction team reported that the containment team should "secure" a particular area within the motor pool. The containment team did—by establishing *defensive* instead of *containment* positions around the location of the threat. In other words, their weapons were pointing in the wrong direction. The problem was terminology: The message said "secure," not "contain."

LESSONS LEARNED

In time the lessons learned were accumulated and the containment team showed an ability to deploy rapidly and contain a possible threat element with little exposure to potential fire. Indeed, there was a certain shock effect to its deployment when the soldiers jumped from their two-and-a-half-ton trucks and ran to establish the positions pointed out by their squad leader. Anyone who found himself a target of the team would have had to conclude that he was surrounded by a very professional and well organized force.

The steps we followed in training our soldiers in the defensive, yet non-combat, mission of containment should be studied by other units. The combined lessons learned should then be compiled with a view to filling a definite doctrinal need.

The training of the negotiation team and the special purpose team is an issue of paramount importance. Consistent with the available experience and equipment, we prepared these elements to handle potential hostage scenarios. The negotiation team's linguists were coupled with a mental health specialist and would have been employed primarily as interpreters. The special purpose team concentrated on coordinat-

ing sniper fire with building assaults by security teams. These elements were not what they could have been with more intensive training, and some argued that their actual employment would have been disastrous. But in the opinion of the command, they were better than no capability at all.

U.S. Army interrogators are taught how to penetrate human defenses and procure information. They know how to manipulate human emotions and, in peacetime, are quite often used as linguists. If these people can be trained to interrogate, is it unreasonable to assume that they can also be trained to negotiate? If not all interrogators, at least a representative number might receive additional training that would give a battalion task force this capability.

Finally, if the number of independent task forces presently being deployed does not justify the expenditure of funds for training large numbers of interrogator personnel, then selected individuals should be trained before the deployment of a designated task force. The training programs exist. We simply need to secure the school quotas.

As with the negotiation team, the special purpose team must have unique skills if it is to be of any real tactical value during a special threat situation. The team must be familiar with typical terrorist ruses and must be capable of entering a building quickly and neutralizing the threat. The members must be flexible, able to work under considerable stress, and expert with the .45 or 9mm pistol. They must be a real team, each member with intimate knowledge of the others' capabilities and weaknesses.

Attaining the skills needed to employ the techniques of neutralization is a demanding task and certainly not within every soldier's reach. But every infantry battalion has some special soldiers with the necessary mental and physical prerequisites. Training for these select people might begin at the Military Police School with a two-week introduction to special purpose team tactics. As with the training for the negotiators, we just

need to get the training slots.

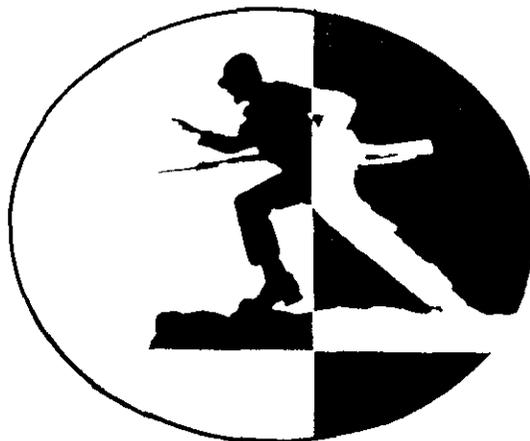
To maintain these perishable skills, generic scenarios could be packaged for training use in a unit. During ARTEPs, for instance, terrorist situations could be included and certification by competent authority obtained.

The possibility of continued and even increased deployments of virtually independent task forces to terrorist threat areas is almost certain. With these deployments, the right of TF commanders to ensure the security of their personnel is also certain. But single-source doctrinal guidance has yet to be developed for the lone infantry battalion.

The Sinai task force, on the leading edge of this doctrinal need, demonstrated that the crisis management team concept employed by installation commanders could be tailored to meet its commander's needs. Working under restrictions—no mistakes, potential unilateral response, and the use of organic assets only—the task force was able to counter all but one threat scenario. And that one, the hostage threat, is also within the reach of an infantry battalion.

A clear, organizational model sanctioned by doctrine and training guidance detailing the steps toward preparation are two areas worthy of greater attention. Overall, developing a capability to respond will not be cheap and, to some, a "part-time" counterterrorism team may seem like the proverbial "bull in a china shop." But few situations are more damaging to unit esprit de corps, deployment effectiveness, and national prestige than one in which an inferior force holds an infinitely superior force at bay. An infantry battalion commander has a right to respond. He has a duty to respond.

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TRAINING NOTES



Strength Training

LIEUTENANT COLONEL ROBERT M. HENSLER

Today's light infantrymen need a robustness of character, both physical and mental, that will enable their units to deal routinely with stress and the unexpected. A high-intensity strength training program, as part of a unit's overall physical training (PT) program, can contribute a unique blend of physical and mental conditioning to significantly aid in developing this robustness.

In the 1st Battalion, 22d Infantry, 10th Mountain Division (Light Infantry) at Fort Drum, high-intensity strength training has, in fact, provided a combat multiplier for the battalion in terms of both physical and mental conditioning. Other units may find the battalion's strength training program helpful in implementing similar programs.

This program is specifically designed to achieve the following goals:

- Develop and maintain an acceptable level of muscular strength for the accomplishment of light infantry missions.
- Train the chain of command on how to organize and conduct unit strength training programs in both garrison and field environments.
- Instill discipline, self reliance, and mental toughness in all soldiers.
- Hasten the return of injured

soldiers to full duty status through a program of strength reconditioning coordinated by the battalion's physician assistant.

The battalion S-3 schedules the use of the weight room (affectionately called "The Sweatbox") so that each platoon-sized element in the battalion can conduct strength training twice a week during duty hours.

The battalion can be broken down for scheduling into 19 platoon-sized elements as follows:

- Nine rifle platoons.
- Three rifle company headquarters sections.
- Scout platoon.
- 81mm mortar platoon.
- TOW platoon.

- Communications platoon.
- S-4 section and support platoon.
- Staff (S-1, S-2, S-3, medical platoon).
- Battalion and company headquarters.

The major scheduling challenge occurs when the entire battalion is in garrison, but it can be done, as illustrated in Table 1. What is important is that some sort of unit integrity be maintained. The size of the group is influenced, of course, by the available strength training equipment and the size of the facility. The underlying principle, though, is that each individual is actively engaged in strength train-

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
0700-0800	Co A	HHC	MAKE-UP	HHC	HHC
0900-1000	Co A	Co B	SCHEDULE THROUGH S-3	HHC	MAKE-UP SCHEDULE
1000-1200	Co A	Co B	↓	HHC	THROUGH S-3
1300-1400	HHC	Co C	Co A 1300-1700	Co C	Co B
1400-1700	HHC	Co C	↓	Co C	Co B

Table 1

ing, as either trainee or coach, every minute of the allotted period.

Because our battalion has its own facility with 11 weight machines, training is done in pairs, and there is room to perform partner-assisted manual resistance exercises with half of the group. The facility can accommodate a group of up to 44 soldiers (11 X 2 X 2).

Machine and partner-assisted exercises are combined for two reasons—there is not enough time for an entire platoon to get through a workout using only the machines, and skill at performing the partner-assisted exercises is maintained for subsequent workouts during field training.

Scheduling must also consider the availability of leaders and staff sections. Unless all soldiers can participate, the team-building aspect of the training is lost. Strength training is particularly effective in developing unit cohesion, an aspect to be discussed later.

A strength training session for a platoon-sized element with 11 machines lasts about 45 minutes. Before assembling in formation in The Sweatbox, the platoon completes warm-up and stretching exercises under the supervision of its chain of command. Also before beginning the training, the tasks, conditions, and standards are announced to the group. The unit then breaks down into predetermined buddy groups and moves to the first exercise position.

A complete workout consists of five or six machine exercises and four or five manual resistance exercises per man. The manual resistance exercises are selected specifically to exercise muscle groups other than those the machines exercise. All exercises are divided into A or B group to ensure that all major muscles are worked either by the machines or by manual resistance. An example is shown in Table 2.

The machines are positioned in the room to facilitate the training unit's movement through the exer-

GROUP A	GROUP B
MACHINE	MACHINE
Leg extension (quadriceps)	Lateral raise (deltoids)
Leg curls (hamstrings)	Overhead press (deltoids/triceps)
Men's chest (pectorals)	Multi-biceps
Pullover (laterals)	Multi-triceps
Torso arm (laterals)	Abdominals
MANUAL RESISTANCE	MANUAL RESISTANCE
Pushup (pectorals)	Leg press (quadriceps)
Lateral raise (deltoids)	Leg curls (hamstrings)
Triceps	Bent arm fly (pectorals)
Biceps	Pulldown (laterals)
Abdominal	Seated row (laterals)

Table 2

cise period. A horseshoe configuration works well. Each soldier has an opportunity to be both a trainee and a coach. A trainee goes through five machine exercises without a break. A whistle is blown every one and a half or two minutes, directing the soldiers to move to the next station. The goal is for a soldier to achieve muscular failure on each exercise in 8 to 12 repetitions. (Momentary muscular failure occurs when a soldier cannot perform another correct repetition through the range of motion required for the exercise.)

After a trainee has rotated through the machine portion of the workout, he moves to an area where manual resistance exercises are done with the same time restrictions—one and a half to two minutes per exercise.

Throughout, the "coach" (buddy) plays an important role. He helps the trainee by adjusting the seat and the weight settings, correcting his form, recording results, and exhorting him to meet the challenge. The coach may also provide "negative" resistance during the machine and partner-assisted exercises to increase the overall benefit of the workout. After half of the group has executed the workout (5 machine exercises plus 5 manual resistance exercises times 2 minutes), the senior trainer orders coaches

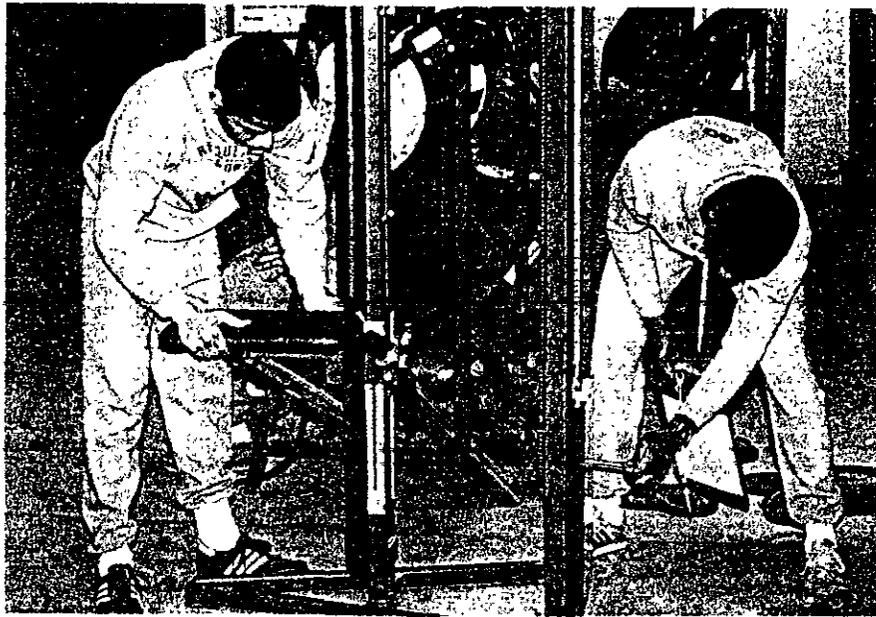
and trainees to switch roles. (The coaches now experience what the soldiers call "payback.")

Getting a platoon through this exercise regimen in 45 minutes is no easy task. Movement between machines must become a drill. Coaches must know their function and do their tasks quickly (especially seat and weight settings) to reduce the delay time between machines to a minimum.

Several sets of pushups and situps are also included, normally after the workout, to ensure that they are done according to Army Physical Fitness Test standards. The standards are maintained through total chain-of-command involvement and presence. (The saying is that in The Sweatbox rank has no privilege.)

Here are some of the payoffs the battalion has gained by doing strength training this way:

- The most obvious and direct benefit is improved physical performance—especially upper body strength. The battalion executed a 25-mile road march at night with rucksacks in 20- to 25-degree weather as the lead event of its post-train-up external evaluation. The results were impressive: 322 out of 337 soldiers finished with their squads in the specified time. A review of the soldiers' performance as recorded on their individual progress cards suggested an across-



the-board increase in physical capacity.

- The principle of leadership by example is always reinforced. The standards are the same for all: 8 to 12 repetitions until muscular failure occurs, although the weight will vary. The entire chain of command participates, from battalion commander through private.

- Strength training is the height of performance-oriented training. Everyone is involved in doing tasks to certain standards. Different weight settings allow soldiers to challenge themselves according to their specific entry levels of fitness. Recorded prior performance is the pre-test from which soldiers develop advanced goals. This training is a great workshop for junior leaders on how to conduct performance-oriented training, reminding them that everything they do is training. Strength training is frequently used as an example of how to conduct performance-oriented training in other areas.

- The intensity with which strength training is conducted contributes to the development of what social scientists call horizontal and vertical social bonding. This is a fancy way of saying that the soldiers feel closer as a unit after the experience. The workout, because it is so intense, becomes the "enemy"

against which everyone pits himself. A soldier gets through the period with the help of a "buddy" who may be his squad leader, platoon sergeant, platoon leader, or even the first sergeant.

- Strength training done this way adds a lot of variety to the battalion's overall PT program. If a soldier did nothing but multiple sets of pushups and situps, he would become strong only to a point. The weaker muscle group involved in doing the exercise (possibly the deltoids or triceps for the pushup) would fail first and ultimately limit performance on the other groups. He would also probably get a little tired of it.

- Once soldiers develop proficiency and confidence in the use of the equipment, they are more likely to take up strength training as a hobby. The Sweatbox is open during weekends for this purpose.

The key to a successful strength training program, in a unit that spends more than 100 days a year in the field, is sustainment. Strength training must be done in the field just as regularly as in garrison to sustain performance levels. The short-term objective of strength training in the field is to decrease the loss of strength, especially in the upper body, that occurs after extended field training. A well-ex-

ecuted program of strength training in the field can actually demonstrate long-term gains.

FM 21-20 has an adequate display of partner-assisted resistance exercises, but our battalion has also created other partner-assisted exercises that duplicate the motion achieved on most of the machines.

Twice-a-week workouts of proper intensity, when combined with the many other activities during PT, are enough to sustain strength for mature soldiers, and to develop strength in younger, less physically mature ones. Since most young men in infantry units have not reached full maturity, a well-organized program can have a very positive synergistic effect on them. There is enough time during the remainder of the week to balance strength training with aerobic activities to achieve total fitness. In fact, when the whole battalion is in garrison, a platoon-sized element is constantly rotating through The Sweatbox all day long.

There are times when physical training is the most important task the battalion does on a given day. This attitude of commitment is central, not just to the strength training program but to the overall PT program in general. The monetary investment for a battalion is about \$23,000, which is not a great deal of money considering the program's many benefits.

This battalion has made a commitment to achieving a high level of total fitness, one component of which is improved muscular strength. Its program of high-intensity strength training is achieving its intended purpose with a host of additional training benefits as well.

Lieutenant Colonel Robert M. Hensler commanded the 1st Battalion, 22d Infantry when he wrote the article. He now commands the 3d Ranger Battalion, 75th Ranger Regiment, at Fort Benning. He has spent the last seven years serving at battalion and brigade level with light infantry units in Panama and the United States. He also formerly served a tour in the Department of Physical Education at the United States Military Academy.

Land Navigation

A Critical Skill

CAPTAIN H. STOGNER, JR.

As the balance of ground power in an increasingly hostile world continues to shift against the West, unit and individual initiative becomes increasingly important. On a modern battlefield, however, initiative without knowledge is usually clumsy, inefficient, and deadly.

One critical area of military knowledge in which most soldiers are deficient is land navigation. By "land navigation," I do not mean so much a soldier's ability to solve theoretical intersection or resection problems on administrative tests. I mean a soldier's ability to determine his own location on a map by using his knowledge of cardinal direction and terrain association, to determine an enemy's location, and to accurately navigate to any point on the map.

Land navigation is a critical area of military knowledge for several reasons. First, if a soldier cannot find the objective, he cannot accomplish the mission, and if a soldier whose leaders are killed or wounded cannot navigate, he cannot continue the mission. Second, that same soldier cannot call for indirect fire because he cannot determine his own location accurately. And, finally, he cannot call for aerial resupply or medical evacuation.

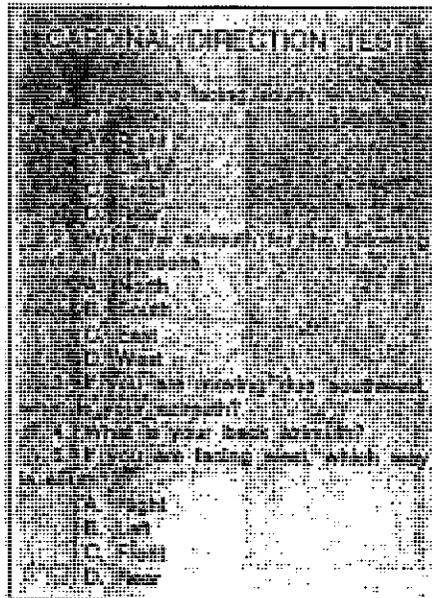
In the past, and to an alarming extent today as well, the Army's land navigation courses have actually been compass courses. A soldier plots a line to a grid coordinate and follows a magnetic azi-

muth, hopefully, to the correct numbered stake. On relatively short, easy courses, soldiers can meet the standards by following an azimuth without ever understanding cardinal direction or terrain association.

To see if your soldiers understand cardinal direction, give them the simple test shown here. You may be surprised by the results.

If a soldier cannot successfully answer these five questions, he will always be lost without a compass, and he will probably be lost even with a compass.

There are many things a leader can do to ensure that every subordinate leader and every soldier he is responsible for is qualified in land navigation. The following are only a few of the key points to be considered:



First, it is impossible to learn to read a map without a map. Maps of local training areas should be procured, acetated, issued, and signed for by every soldier at squad or platoon level. Leaders who try to do this will hear various reasons why this inexpensive but critical training aid cannot be made available in ample numbers. But leaders who use persistence, patience, and imagination will solve the problem.

If every soldier has a map in the field, a platoon leader can expect each man to know his location at all times and can require some kind of punishment for him (and his squad leader) if he is quizzed and does not know—perhaps 25 push-ups for each of them. A unit's mission is not just the designated leader's mission—it is every soldier's mission.

Map-carrying, oriented soldiers can also reasonably be expected to plot target reference points (TRPs) for indirect fire along movement routes and in support of defensive positions. Leaders whose soldiers are trained, oriented, and capable of calling for and adjusting fire will greatly improve the combat effectiveness of their units. Post forward observer training centers (FOTCs) or local artillery units can aid in initial and sustainment training.

Next, leaders should make sure every soldier has a firm understanding of direction and azimuth. Given two points on a map, a soldier should be able to "eyeball" an ap-

proximate azimuth between the points. He should also know the methods of determining all cardinal directions day or night without using a compass.

Finally, orienteering courses should be sought out or established in order to train soldiers better in land navigation skills. Fort Benning, for example, has transformed its old, familiar Yankee and Furman Road courses into orienteering style courses. And the June 1986 edition of FC 21-26, Map Reading and Land Navigation, devotes 20 pages of Appendix B to orienteering.

Leaders should strongly encourage

their soldiers to participate in the sport of orienteering, which is both challenging and enjoyable. Experienced orienteers can think on the move and are highly competent in quickly finding and reaching any point on a map.

In order to fight and win against superior numbers and possibly superior firepower as well, the U.S. Army must have soldiers who are confident of their ability to find and reach an objective. Such soldiers are much more likely to generate the kind of initiative and leadership necessary to accomplish the mission.

Unfortunately, mediocrity creeps

into the fabric of every profession. Even among officers and NCOs at many levels, we find excuses instead of standards, flab instead of fitness, and consensus instead of excellence. When leaders plan training, they do their soldiers no favor if they settle for marginal standards. Marginal soldiers seldom survive desperate battles.

Captain H. Stogner, Jr., is chief of the Pathfinder School at Fort Benning. He served in Vietnam as a staff sergeant in the 1st Cavalry Division. He received a direct commission in 1982 while serving with the 82d Airborne Division.

Terrain Appreciation

LIEUTENANT KENNETH G. NIELSEN

One of the most vital skills a soldier can have is the ability to look at a map and visualize a three-dimensional image of the information he sees. As a unit training officer and a college laboratory instructor, I have used several techniques that others may also find useful in teaching soldiers how to interpret what they see on a map.

When I teach map reading and terrain appreciation, I follow a four-step process:

- Preparing a graphic cross-section.
- Constructing a cardboard contour model.
- Constructing a terrain model.
- Going on a terrain walk.

The goal of this teaching process is to take someone who is unsure of his map reading ability and teach him the skills that will enable him to pick up a map and conduct a reasonably accurate terrain analysis based on that map.

First, each soldier should have the following equipment:

- A local map (1:25,000 or larger scale, if possible).
- A pencil.
- One sheet each of plain paper, tracing paper, and graph paper.
- A scrap of cardboard (two to four square feet).
- A sharp knife or scissors.

The first step of this process, preparing a cross-section, helps a sol-

dier get a better feel for the relationship of the space between contour lines on a map and the slope of the ground.

The soldiers should be given these directions to follow:

- Choose two points on a map. Draw a line between them, labeling one end A and the other B, as shown in the example in Figure 1.

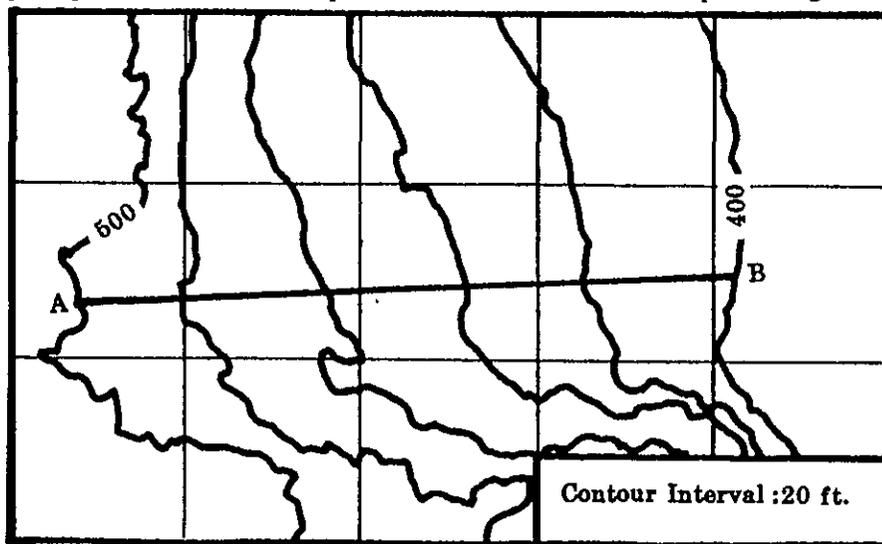


Figure 1. Map for graphic cross-section.

- Place the edge of a piece of paper along the line between A and B.

- Make a mark on the paper at each contour line, including the two end points, and note the elevation of each one.

- Draw a graph with the base representing the map's horizontal plane and the ordinate representing the elevation, in 20-foot intervals. Take the marked piece of paper and place point A at the lower lefthand corner of the graph. Make a dot at the elevation point for each mark on the piece of paper (Figure 2).

- Draw a line to connect all of the points.

Each soldier now has a completed cross-section. Although a cross-section has some built-in distortion along the elevation axis, it is a useful point from which to start the terrain appreciation process, because it lays the groundwork for the next step, constructing a three-dimensional cardboard contour model.

The purpose of this second step is to allow the soldiers to see a rough view of what the ground looks like without vegetation, buildings, or other features.

For this step, I recommend using large, hand-drawn contour maps. This prevents the problems that result from using anything smaller than a 1:5,000-scale map. (This will become clear in the first step of the process.) Again, the soldiers should be given the following instructions (see Figure 3):

- Place a sheet of tracing paper over the large map and trace the

contour lines, numbering each one with the correct elevation. Another method of doing this is to project part of the map you are using onto a wall with an overhead projector and then have the soldiers trace the lines onto their paper.

- Go to the highest elevation line on the tracing and cut along that line. If the line forms a circle, use a sharp knife to cut that circle out so as not to ruin the rest of the tracing.

- Place the tracing over a piece of cardboard and use a pencil to trace the shape onto the cardboard; then label it in the middle with the correct elevation.

- Cut the shape out and set it aside for now.

- Repeat the second, third, and fourth steps until you have a cardboard piece for each contour line.

- Start with the lowest elevation piece and stack the pieces on top of each other, using the original map as a guide for alignment.

After doing this, the soldiers know what the ground shown on the map looks like and need only to smooth out the lines of the contour model and add other features such as trees, roads, and buildings.

Building a complete terrain model is the next step. A terrain model must be accurate since its purpose is to give the soldiers a detailed picture of what is out on the ground before they get there. The easiest way to insure accuracy is to build the model to scale. Although the scale will vary, I recommend using either 10-centimeter or 1-centimeter squares for reference

because both are easy to divide by ten. This allows the soldiers to approximate grid coordinates so that they can put the terrain features where they belong on the model.

The soldiers, working in small groups, follow these instructions:

- Clear and level an area to work in.

- Place your grid lines on the model. Nylon cord with knots at the interval of the chosen scale work quite well.

- Use the map as a guide and build only the contour features on the model.

- Add the rest of the features such as vegetation, buildings, and streams.

- Once the model is complete, label grid lines, roads, and other features that should be identified.

The final step in teaching terrain appreciation is conducting a terrain walk. Although I usually do this after the first three steps have been completed, a terrain walk during each step of the process can be a valuable reinforcement.

The primary purpose of a terrain walk is to allow the soldiers to go out and physically confirm the fact that their models or cross-sections actually match the ground. This confirmation builds the soldiers' confidence in their map reading skills and in their ability to visualize a three-dimensional image from a two-dimensional picture.

There are two additional reasons for conducting a terrain walk. The first is to identify differences between the data shown on the map and what is really on the ground, such as new trails or recently cleared forest areas. The second is to get the soldiers into the habit of constantly analyzing the terrain as they cross it. They should be taught to stop occasionally, look around, and ask themselves what they would do if their unit were ambushed where they are standing, or to look at a small streambed and think about how difficult it might be to move a company down that route quietly and swiftly.

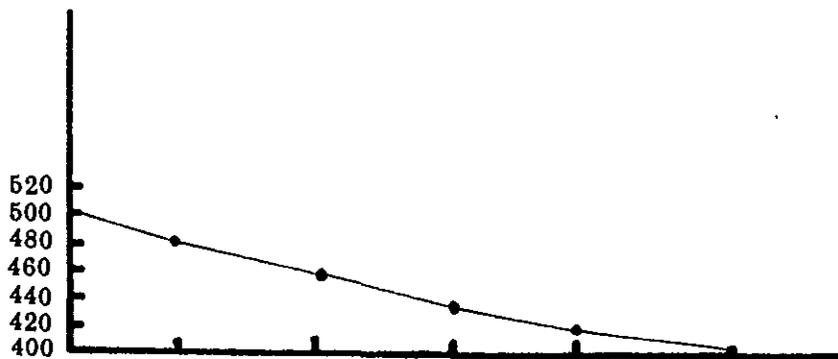


Figure 2. Graph showing cross-section.

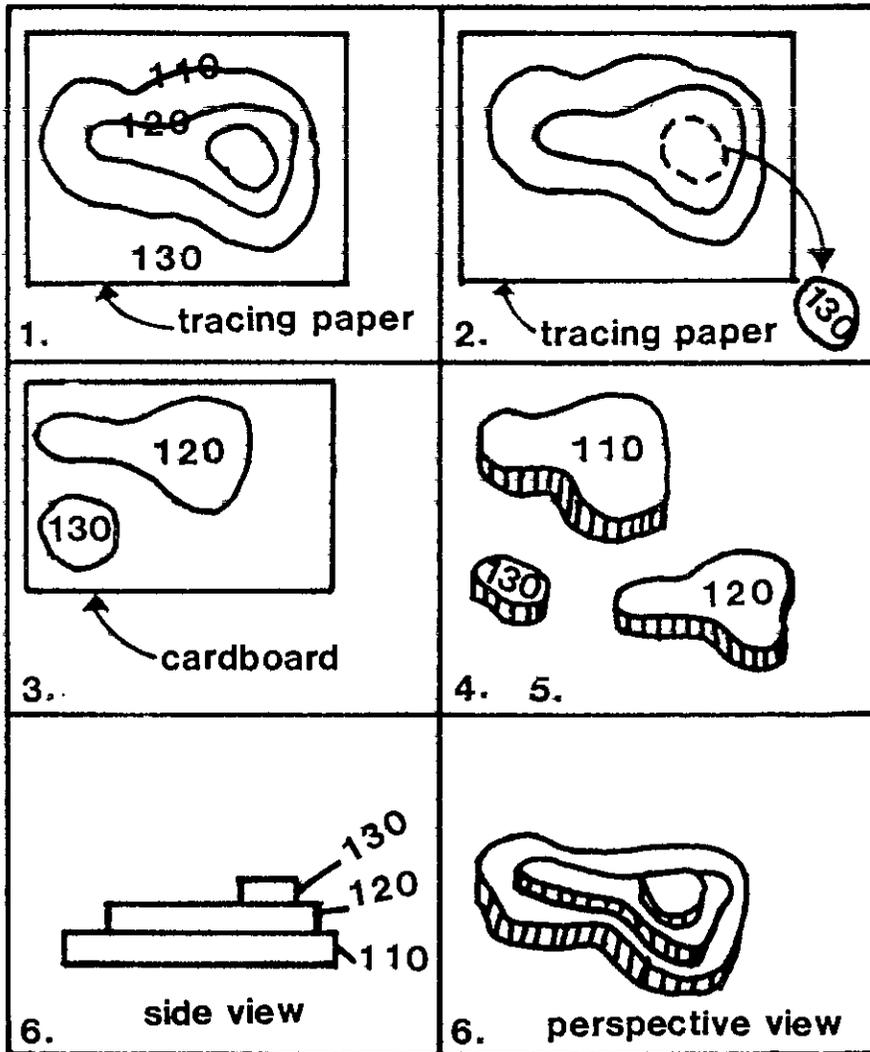


Figure 3. Steps in constructing a cardboard contour model.

A terrain walk is, in fact, an absolutely necessary part of the terrain appreciation process. If an instructor does not take the soldiers out to confirm and reinforce their confidence in their ability to visual-

ize what is on the map, then he has wasted a lot of valuable training time. I have found that my soldiers have a much easier time using maps for field exercises after they have been through a few terrain appre-

ciation problems.

Trainers who plan to use this technique in their units should allocate at least 16 hours per terrain appreciation exercise for the first one or two. After that, they can figure on between four and eight hours each, depending on the size of the group. (This estimate is based on a class of 15 to 20 people.)

For this entire process to be of any real use, local maps must be used. If you're stationed in Georgia, for example, don't use the old faithful Tenino, Washington, sheet. I use 1:24,000 U.S. Geological Survey (USGS) maps. These are readily available and have enough information in the marginal data that a grid system can be put on them for reference if the instructor so desires.

Too, in making the graphs for the cross-section step, I get the best results by using graph paper that is divided ten lines per inch or five lines per centimeter. These divisions are large enough to be seen easily but small enough to reduce vertical exaggeration to a tolerable level.

Anyone who has questions or comments concerning this method of instruction may write to me at 1685 Copeland Circle, Canton, Michigan 48187.

Lieutenant Kenneth G. Nielsen is a company commander in the 1st Battalion, 330th Infantry, Michigan Army National Guard. He is a 1983 graduate of Eastern Michigan University, where he is now enrolled in a graduate program in geography and land use analysis.

Smallbore Riflery

MAJOR EDWIN L. KENNEDY, JR.

There are not many things we do in the Army that are really new. And so it is with our marksmanship

training techniques, some of which have been around since just before the turn of the century.

Smallbore training in the Army with the caliber .22 round is one such technique. But with the transi-

tion to the 5.56mm bore in the M16 series service rifle in the 1960s, smallbore riflery with the caliber .22 round became possible without issuing special weapons to units.

The .22 rimfire round has been used as a training round since the turn of the century when 600 Krag-Jorgensen rifles were made for the Army. These rifles were bought to be used for "gallery" practice on smallbore ranges to supplement service rifle marksmanship. Even this idea was not really new; it was a modification of an earlier system of using reduced-load cartridges with the model 1873 Springfield rifle and carbine, a system that had been developed by Colonel George W. Wingate and that had resulted in a substantial monetary savings over a period of time.

Reduced-load cartridges were fired into sand-filled boxes at short ranges, and each of these locally fabricated traps had a holder for a target. These traps could be used under cover during inclement weather. The primary advantage was that a soldier actually practiced with his service weapon, the main differences being in the load of the cartridge and the ranges to the targets.

The Army's purchase of the .22 caliber Krag-Jorgensen gallery rifle in 1892 did away with the need for the caliber .45 reduced-load cartridges. Being identical to the service rifle in most respects, the Krag .22 again replicated the firing of the service rifle except for the size of the round. The soldier still had the advantage of working with a weapon that was similar in operation to his service weapon.

The U.S. Springfield caliber .30-06 rifle, adopted in 1903, had several smallbore variations. Like its Krag-Jorgensen predecessor, the caliber .22 Springfield was intended for gallery practice. About 41,860 of these in different models were manufactured.

The first models produced were similar to the full-stock service rifles and incorporated a caliber .22

adapter for the barrel and receiver. In 1922 a lighter sport-stock version was produced—the M1922, some of which are still in use today. This model differed from the previous caliber .22 Springfield rifles in the sights and the bolt.

Although the caliber .22 versions were bolt-operated like the service rifle, most similarities between them ended at that point. The M1922 weapons, for instance, were target rifles, and there was no direct correlation between firing them and firing the service rifle.

After World War II, the emphasis on smallbore marksmanship in the Army seemed to decline, for various reasons. Except in marksmanship training units, the smallbore and known-distance ranges all but disappeared.

CONVERSION KIT

Today we have a smallbore caliber .22 conversion unit that again enables a soldier to use his service rifle, the M16, in this type of training. Yet we do not take full advantage of it, and marksmanship seems to receive less attention today than it did in earlier times. This lack of interest in smallbore training may result more than anything else from a lack of information regarding how such training can be conducted.

Smallbore marksmanship training offers the same advantages that were previously gained when special weapons were produced for this particular purpose. Of course, an appreciation for marksmanship and the premise that marksmanship skills are transferable from smallbore target shooting to service rifle firing must first be accepted. Although smallbore marksmanship should not and cannot be substituted for service range firing or Trainfire exercises, it does provide an excellent way of improving marksmanship skills. It can be time-efficient, cheap, challenging, and moderately realistic. It also requires fewer resources than service firing, and it can be fun for the soldiers.

The device that makes possible the conversion of the M16 rifle to caliber .22 is known as the Conversion Kit, M261, NSN 1005-01-010-1561. Essentially, the device is a replacement bolt and a supplemental buffer spring configured to fire the caliber .22 rimfire cartridge from a special magazine that comes with the kit. Although magazines are available in different sizes, the Army normally purchases the ten-round version. The converter takes only moments to fit to a rifle and does not change the overall functioning of the weapon.

Like other smallbore programs, the use of the converter for M16 rifles has its disadvantages also. It does not substitute for service ammunition firing (noise, recoil, and trajectory determination due to weather), range estimation, or target acquisition practiced on an outdoor known-distance or Trainfire range.

In addition, with the current converter, there is an accuracy problem that might prevent its use for training in the very areas where it might have proved most useful—zeroing, qualification, and competitive target shooting.

There may be a solution to the accuracy problem, which is probably a function of the ammunition and not of the converter device itself. The Army has noted a dispersion when the converter is used to fire caliber .22 rimfire ammunition at point targets. Although the .22 rimfire round is very close to the same size as the 5.56mm service round (which is .223), there may be just enough difference in tolerances to cause a small dispersion at the point of aim. The problem would therefore appear to be a difference in the size of the round and not in the interchangeability of the converter device as implied in FC 23-11.

The solution to this problem may be the redesign of the caliber .22 round so that the lead bullet fits the bore more closely. Although I do not profess to be a munitions designer, E. C. Minie found the so-



lution to a similar problem more than 100 years ago.

Since the U.S. Army purchased the first converter kits, two improved kits have been designed that solve the reliability problems encountered with the first kit. Indeed, there are kits now that fit the 30-round magazines for the M16 and fire caliber .22 rounds on both semiautomatic and automatic settings. The Army has not bought the new kits, however, and is still using the first-generation kits.

Should the dispersion-accuracy problem be solved, major training requirements could be accomplished on a smallbore range or a 25-meter/1,000-inch zero range using caliber .22 ammunition. This would mean that a tremendous amount of savings could be realized using the converter kits and rimfire ammunition instead of 5.56mm service ammunition. There would be other benefits as well.

Monetary constraints and ammunition allocations are inexorably tied together in an annual document for units called "STRAC" (for the Standards in Training Commission, which establishes requirements).

There are no unlimited ammunition resources and, unlike a few years ago, ammunition is allocated on the basis of specific training

missions. Every round of 5.56mm saved on the zero, familiarization, and alternate qualification courses could therefore be used to conduct more beneficial training such as unit maneuver live fire courses (CALFEXes, for example) where the caliber .22 could not be interchanged.

Modified qualification firing could be done on 25-meter ranges. These ranges are especially important to units stationed in Europe, and to Reserve Component units for whom the ranges were originally intended (because of the lack of available facilities for known-distance and Trainfire ranges).

Alternate course qualification is authorized for units when 300-meter known-distance (KD) ranges are not available. The target, NSN 6920-01-167-1398, represents the scaled "E" and "F" silhouettes normally found on Trainfire ranges with distances represented from 50 to 300 meters. Since the trajectory of the caliber .22 rimfire bullet out to 50 meters is virtually identical to that of the 5.56mm round, qualification on the 25-meter course would be just as effective and more efficient with the converter kit.

The construction of a range with a proper backstop could more easily fit into most local training areas. Noise considerations with the cali-

ber .22 rimfire ammunition would be minimal. The firing would remain moderately realistic in the sense that the soldier would use the same weapon that he would fire on a service range. It would still provide a training correlation better than that of simulators while allowing more than one soldier to train at a time. Instead of waiting for a unit to go to a zero range, which might be a long time, the new soldiers entering units could be met at the inprocessing center by a unit representative, given their assigned weapons, and have those weapons zeroed before leaving the inprocessing location.

Even if a unit is not interested in training with the smallbore devices in a marksmanship program, there are other possible uses for the devices. For example, the converter might provide an inexpensive and much safer live fire option in training for urban operations than service ammunition. The caliber .22 round would cause less damage to the inside of a building and would be less prone than the 5.56mm service round to ricochet long distances. If a protective liner were used inside a building, training could be conducted more safely with the converter. The caliber .22 rimfire tracer, M861, might also offer interesting possibilities for night training.

The use of a smallbore training program could provide some new alternatives to a unit that was serious about marksmanship. With the continued emphasis on saving money and ammunition, smallbore training would provide a reasonable solution to these concerns. The venerable caliber .22 rimfire round has served well for the past 90 years and will continue to make a valuable contribution to the U.S. Army's marksmanship program through smallbore riflery.

Major Edwin L. Kennedy, Jr., is assigned to the G-3 Operations Branch, 2d Armored Division. He previously served as an ROTC instructor at Texas A and M University. He is a 1976 graduate of the United States Military Academy.

SAFE

From Friendly Fire

J. D. BOYLE

The United States infantryman has proved to be a versatile and strong soldier under arduous combat conditions. The enemy is a formidable obstacle in most cases, and the infantryman needs strong leadership and direction. There is no room for accidents, yet accidents do happen. The sad fact is that, in many instances, they could have been avoided, saving soldiers from unnecessary injury and death.

I know. I was a victim of friendly fire 20 years ago in Vietnam, sustaining a gunshot wound to a shoulder. Fortunately, however, as a result of this incident a failsafe system was instituted in my company to prevent a recurrence. There are still lessons to be learned from this experience, and the same principles still apply.

The situation developed during a routine night ambush patrol operation. I was new to the company, having been sent in as a replacement about two weeks earlier.

Several days before, I had been on a night ambush patrol moving through the denuded landscape of the Hobo Woods. Halfway to our ambush site, we had been ambushed in turn by a column of Viet Cong. The encounter had been brief, and the enemy had escaped into the night. This had been my introduction to war, and it made the point that this was a serious situation.

In addition, before I arrived, the company had undergone an all night attack by a superior enemy force, and the fierce battle had cost

the company numerous casualties. (In fact, I replaced one of those soldiers who had been injured or killed.)

As a result of these two encounters, the mood in the company perimeter that evening in August 1967 was one of nervous anxiety. Many believed that the enemy was ready to launch another strike against the company. The main topic of discussion was the shared feeling that the patrol would be hit that night. The patrol's anxiety spread to those along the company perimeter. The bleak mood may have contributed to what happened later, because nervous men have itchy trigger fingers.

DELAY

Another contributing factor was that the patrol did not go out on schedule. The men had already formed up when they were told to disband and relax. No reason was given for the long delay. But the men were thankful for the reprieve and took advantage of the opportunity to relax and visit.

An hour later the patrol was reformed and passed through the concertina wire into the night. Not far from the exit point, the patrol leader made a turn onto a predetermined azimuth heading into the woods. A short distance from that point, someone in the patrol's center stepped on a trip flare, sending it into a hissing yellow flame that silhouetted us against the dark hori-

zon. The men fell prone on the ground to present as small a target as possible for the enemy.

Seconds later a .50 caliber machinegun began firing from its perch atop an armored personnel carrier inside the wire. It was soon joined by a barrage of small arms and grenade launcher fire.

Stunned, we lay helpless under the heavy volume of fire spewing out from the company perimeter. The shooting lasted perhaps less than a minute, but it seemed like an eternity. During that time the point man had his hand smashed by an M79 grenade round, a soldier in the patrol's center suffered shrapnel wounds, and I was shot through the left shoulder with a .223 caliber round from an M16.

We were evacuated for medical attention. Fortunately, I recovered in four weeks and was able to return to the field. The fellow whose hand was smashed wasn't so fortunate. His hand had to be amputated, and he eventually received a disability discharge.

All the men involved in the accident, however, were affected in one way or another for the remainder of their tours. This may have contributed to their becoming overcautious, resulting in a conscious fear of shooting at a target that might turn out to be friendly. Nobody wanted to make that mistake again.

In reality, there were several mistakes made that night:

First, an overlooked area in combat is rumor control. An alert non-

TRAINING NOTES

commissioned officer might have countered the soldiers' anxiety with logic and reason. While this may not have prevented the accident, some kind of action may have reduced its severity.

Second, no one had assumed responsibility for notifying the perimeter units that the patrol was going out an hour later than scheduled. The soldiers along the perimeter had assumed that the patrol was already gone and that the tripped flare meant an enemy probe.

Another error on the part of the perimeter squads was firing with heavy weapons. In situations like this in which there is no hostile fire, the only shooting that should be allowed is intermittent small arms fire and grenades to probe the enemy force outside the wire.

The failsafe system that was subsequently instituted in the company was designed to reduce the probability of such errors. The system had the most important ingredient for success—simplicity—and rules that everyone could remember and follow.

Under the system, a patrol leader assumed the responsibility for notifying the headquarters radio telephone operator (RTO), who then became responsible for notifying each squad within the company perimeter. The patrol could not move outside the wire until every squad had acknowledged the signal.

This is the way it worked. When he was ready to go, the patrol leader radioed a "red light" to company headquarters. Headquarters, in turn, radioed an answering "code red" to let the patrol leader know the transmission had been copied. The headquarters then systematically radioed "condition red" to all squads. The patrol was given a go-ahead when all had acknowledged the transmission.

CODE RED

During "code red" conditions, no one could fire unless directed by the company commander and then only as directed. "Code red" signified that a patrol was leaving and would be in the vulnerable area outside the perimeter for a period of time.

Once the patrol had walked a safe distance from the company, the patrol leader radioed back "yellow light." The headquarters RTO then sent a transmission to all squads that the situation was now "condition yellow." With "condition yellow," platoon members had to get the permission of their platoon leader before they could fire at targets outside the perimeter.

Once in position, the patrol leader radioed a "green light" to headquarters. The company was then notified of a "condition green." This meant that any mem-

ber of a squad could fire at a defined target outside the wire, since it was safe to assume that the target was enemy.

The patrol's return required using the system in reverse. Outside the wire, after giving the "red light" and the proper password, the patrol was instructed to fire a predetermined group of colored flares as a confirmation signal. After this, the patrol could reenter the perimeter.

This fail safe system set my mind at ease and helped me adjust to my return to combat. During the remaining months I spent with the company, there were no other accidental shootings around the company perimeter.

Although it is difficult to prepare for every situation, lessons of the past can be useful in the present, and a failsafe system such as this belongs in every company's rule book. In combat, unnecessary casualties from friendly fire can weaken a command and make it more vulnerable to the enemy. The object is to win battles with the fewest possible casualties, and a failsafe system ensures that valuable manpower will not be lost as a result of preventable accidents.

J. D. Boyle served in Vietnam as a platoon sergeant in the 4th Battalion, 23d Infantry, 25th Infantry Division. He is a graduate of California State University, Sacramento, and has had numerous articles published on various subjects.



ENLISTED CAREER NOTES



DRILL SERGEANT AND DETAILED RECRUITER PROGRAMS

The Infantry Assignments Branch at the Total Army Personnel Agency (TAPA) is looking for volunteers to meet the continuing need for non-commissioned officers in the ranks of sergeant through sergeant first class/platoon sergeant to participate in the Drill Sergeant and Detailed Recruiter Programs. Both programs offer excellent career development opportunities and are extremely competitive.

The requirements for the Drill Sergeant Program can be found in Section II, Paragraph 8-17, AR 614-200. Personnel who are overseas should apply eight to ten months before their DEROS (date eligible for return from overseas). Personnel who are currently in the continental United States (CONUS) must be stationed at an installation that has requirements for Infantry drill sergeants or must have the necessary four years time on station to be eligible for a CONUS-to-CONUS reassignment. The Drill Sergeant Program is still a two-year commitment with the option to take a third year.

The requirements for the Detailed Recruiter Program can be found in Section II, Paragraph 2-4, AR 601-1. Personnel who are overseas should apply eight to ten months before DEROS, and those who are currently in CONUS must have at least 24 months time on station to be eligible to apply for reassignment. The Detailed Recruiter Program offers the opportunity to reclassify to PMOS 00R.

Further information is available from Commander, TAPA, ATTN: DAPC-EPK-I (SFC Gensler or SFC Waldroup), 2461 Eisenhower Ave-

nue, Alexandria, VA 22332-0400.

NEW NCO EVALUATION REPORT

The new Noncommissioned Officer Evaluation Reporting System is still scheduled for implementation in January 1988.

The new system consists of the NCO Evaluation Report (NCO-ER) and the NCO Counselling Checklist. This system differs from the current one in the following ways:

- A new form has been designed.
- The rating chain has new roles. The rater will focus primarily on evaluation and performance and will be responsible for performance counselling. The senior rater (new name for indorser) will focus primarily on evaluating potential and will be responsible for monitoring and for watching over the performance evaluation process. The reviewer will make comments only if he disagrees with the rater or senior rater and will be responsible for rating safeguard overwatch.
- The duty description narrative is divided into three parts (daily duties and scope, areas of special emphasis, and appointed duties). Counselling dates concerning duties must be marked on the form.
- Values and NCO requirements and responsibilities are used as the sole focus for evaluating performance.
- Specific justification is required for each "excellent" and "needs improvement" rating.
- Numbers have been eliminated and the emphasis is on the use of the "success" rating as the performance norm. This is the rating most NCOs will receive in most values and responsibilities in Part IV. The

goal is to counsel NCOs so that they can achieve "success" ratings.

• Bullet comments are used. Rigid narrative rules will emphasize results and excellence, highlight significant performance, make it easier for selection boards to review them by using only the necessary words, and minimize the effect of a rater's writing ability on a rating.

• The total score for overall performance and potential has been eliminated.

• "Potential" ratings require a rater to check a box for promotion and service potential and to recommend specific future positions for the rated NCO. The senior rater will rate overall performance and potential and must provide a choice of alternatives for the NCO's future assignments and schooling.

• Face-to-face performance counselling is mandatory for all NCOs, corporal through command sergeant major. The rater must conduct initial counselling within the first 30 days of each rating period and at least every quarter after that. Counselling dates must be recorded on the form.

• The counselling checklist/record must be used in counselling all NCOs in the rank of corporal through sergeant first class.

The education process on the new evaluation reporting system will include a series of news releases and messages. TAPA is preparing training packets for TRADOC schools and for field use.

To ensure a standardized and equitable transition from the current to the new system, the Army will close out the current Enlisted Evaluation Reporting System, and most NCOs will get final reports under the old system.

OFFICERS CAREER NOTES



CONGRESSIONAL FELLOWSHIP PROGRAM

Infantry officers, along with officers of other branches, have an opportunity to compete for assignments in the Congressional Fellowship Program. The fellows serve for one year as congressional aides to gain a working knowledge of the U.S. legislative branch.

An applicant must:

- Hold the rank of major or lieutenant colonel.
- Be a graduate of a command and staff college.
- Be interested in the legislative process and public affairs.
- Be adaptable to diverse working environments.

Interested officers should submit their requests to compete to their career management divisions at TAPA. Infantry officers should send their requests to Commander, TAPA, ATTN: DAPC-OPE-I, 200 Stovall Street, Alexandria, VA 22332-0400.

Once permission has been granted by branch career managers, officers must send fellowship applications to TAPA, ATTN: DAPC-OPB-D, at the same address, to arrive by 5 January 1988.

A fellowship application must include:

- A statement on the relevance of congressional experience to the applicant's career goals and wishes for utilization.
- A request to compete with endorsements from immediate superiors.
- A Standard Form 171, Personal Qualifications Statement.

Final selection of congressional fellows will be made by 1 June 1988, and the year-long fellowship

begins in September.

More information on the program is available from Linda Hakenson, AUTOVON 221-3140, commercial (202) 325-3140.

FUNCTIONAL AREAS

The functional area designation process began last summer for more than 3,800 captains in year group 1981.

Functional area designation has replaced the additional specialty designation process. Under the revised Officer Personnel Management System, most commissioned officers will be assigned to both a branch and a functional area.

All year group 1981 officers have been asked to indicate their preferences for four functional areas from the following list:

CODE FUNCTIONAL AREA

- 18 Psychological Operations/Civil Affairs
- 41 Personnel Management
- 45 Comptroller
- 46 Public Affairs
- 48 Foreign Area Officer
- 49 Operations Research/Systems Analysis
- 50 Force Development
- 51 Research and Development
- 52 Nuclear Weapons
- 53 Systems Automation Officer
- 54 Operations, Plans and Training
- 97 Procurement

Officers eligible for single tracking—in Engineer, Combat Support, and Combat Service Support branches—may indicate their preference by listing the branch as their first choice of functional area.

TAPA career managers will consider education, training, experience, job performance, and personal preference in determining which func-

tional area designation will best serve the Army and the officer.

TAPA will announce final designations for year group 1981 in February 1988.

SCHOLARSHIP PROGRAM

Each year, the George and Carol Olmsted Foundation awards scholarships to three outstanding Army officers—two U.S. Military Academy graduates and one officer commissioned from another source.

Olmsted scholars spend 9 to 12 months at the Defense Language Institute in Monterey, California, and then go abroad for two years to study in the fields of social and political science or international relations. They follow the overseas study with one year at a university in the United States, earning a master's degree. (The year of study in the U.S. does not have to come right after the overseas period.)

To be eligible to compete for one of these scholarships, an officer must:

- Be Regular Army.
- Be branch qualified.
- Have between three and seven years of commissioned service.
- Have a minimum Graduate Record Examination score of 1200, or have an undergraduate grade average of B+ or higher.
- Be in compliance with AR 600-9, The Army Weight Control Program.

Officers who want to be nominated to compete should contact their career managers. More details on the Olmsted Scholarship Program are available from Linda Hakenson, AUTOVON 221-3140, commercial (202) 325-3140.

BOOK REVIEWS



Once again we are pleased to tell you about some of the interesting books that have come our way in recent months. Here are a number we feel you will want to read:

• **SCAPEGOAT GENERAL: THE STORY OF MAJOR GENERAL BENJAMIN HUGER, CSA.** By Jeffrey L. Rhoades (Shoe String Press, 1985. 164 Pages. \$17.50). The subject of this book graduated from the U.S. Military Academy in 1824 and remained in the U.S. Army until 1861, when he resigned his commission to go with the South. He accepted a general officer appointment in the Confederate Army, first commanding the Department of Norfolk and later a division in the Army of Northern Virginia during the 1862 Peninsular Campaign.

Criticized for his actions during the evacuation of Norfolk in May 1862, Huger was even more severely criticized for his apparent slowness in bringing his division into battle at Seven Pines and again at White Oak Swamp. As a result, he was relieved of his command and eventually ordered to the Trans-Mississippi Department where he served until war's end. His request for a hearing, or even a court-martial, was never answered.

The author offers a spirited defense of Huger's actions and blames James Longstreet for wanting to get rid of Huger, who outranked him, and of anyone else senior to him. Robert E. Lee aided Longstreet in this quest so that the latter could become his second-in-command by ridding "not only the army but the whole state of those who outranked his favorite officer."

Certainly not all Civil War historians agree with the author's contentions. In fact, there is consider-

able doubt even after reading this book that Huger acted properly in leading his forces into battle. Still, Rhoades offers a somewhat different view of the many problems that plagued the Confederate high command in the east during the early years of the war.

• **DILEMMAS OF THE DESERT WAR: A NEW LOOK AT THE LIBYAN CAMPAIGN, 1940-1942.** By Michael Carver (Indiana University Press, 1986. 160 Pages. \$20.00). Eighty years after and 2,000 miles away from the events cited in Jeffrey Rhoades's book, another general officer, Neil Ritchie, then commander of the British Eighth Army in the North African desert, was relieved of his command after his army had been roughly handled by Erwin Rommel and the *Deutsches Afrika Korps* (DAK). The author, now retired, is a distinguished British Army officer. He served in North Africa as a staff officer during the events about which he writes, and he has written previously about certain of those events.

He defends Ritchie, who later commanded a corps in Northwest Europe, but admits that Ritchie did not do enough to fend off his superior, General Claude Auchinleck. He feels that Ritchie, from the moment he assumed command late in November 1941, should have demanded "either that he should be allowed freedom to command his army in his own way, or be replaced."

The author does admit, however, that command throughout the Eighth Army at practically every level was never very effective and that it broke down almost continuously. Rommel certainly had a lot to do with that, but to Carver the

British commanders in North Africa in 1941 and 1942 "were faced with a form of warfare completely novel to all, for which their experience and training was of little value." For this, they and their soldiers paid a high price.

• **THE IRAN-IRAQ WAR AND WESTERN SECURITY, 1984-1987.** By Anthony H. Cordesman. The RUSI Military Power Series (Jane's, 1987. 185 Pages. \$28.00). The author refers to the fighting that has been going on between Iran and Iraq since September 1979 as a "war of lies" because each side "seeks to distort the perception of its own populace and the outside world for propaganda reasons." And although he admits his book "involves a lot of guesswork" and "draws heavily on the day to day reporting in the press," this plus his own superior knowledge of the Middle East gives his writing a distinct aura of credibility.

For various reasons Cordesman concentrates on the fighting that has occurred between January 1984 and early May 1987. (His narrative ends before the U.S. Navy began escorting oil tankers.) He also discusses Iran's covert relations with the United States, the tanker war, the strategic importance of the conflict and its effect on both future Western policies and the Iranian revolution, and the problem of energy on a global scale.

Overall, his is a well done work and deserves to be read by every infantryman.

• **U.S. MARINES IN GRENADA, 1983.** By Ronald H. Specter (USMC PCN 190-003097-00. Superintendent of Documents, 1987. 35 Pages, Softbound). The author is a Marine Corps Reserve officer and the Director of Naval History. In

keeping with the Corps' tradition of writing contemporary military history, he was called to active duty to prepare a monograph that would tell the Marine Corps' role in Operation Urgent Fury.

He does not claim that this is a complete story of the operation; his object is "to deal as completely as possible with Marine participation in that operation." This he does quite well. A seasoned military historian with several excellent books to his credit (including the first volume in the Army's official history of the Vietnam War), Spector traces the actions of the 22d Marine Amphibious Unit from its necessarily hurried initial planning in mid-October 1983 (it was then at sea on its way to Lebanon) to its departure from Grenada on 2 November to continue its original mission.

He discusses the various heliborne and amphibious assaults the Marine units conducted, the joint Marine-U.S. Army Ranger operation at Grand Anse, and the Marine occupation of the island of Carriacou.

Spector has done an excellent piece of work for the Marine Corps. His narrative is strong, solid, and straightforward; it should stand the test of time from a historical viewpoint.

• **FORT SNELLING: COLOSSUS OF THE WILDERNESS.** By Steve Hall (Minnesota Historical Society Press, 1987. 44 Pages. \$5.95, Softbound). This most attractive publication contains a brief history (as well as numerous photographs and maps) of Fort Snelling from its founding at the junction of the Mississippi and St. Peter's Rivers by Henry Leavenworth and his 5th Infantry in 1819. Leavenworth did not build the permanent fort; that burden fell on the shoulders of Josiah Snelling, who took command of the 5th Infantry in the summer of 1820. The author suggests that the completed fort "bespeaks a vision not found in any other American frontier fortification" and "that few men

would have created such an extravagant monument."

Fully one-half of this publication is devoted to Snelling and the building of "his" fort. Unfortunately for the post, the military frontier continued to move westward and before long the fort's military significance declined and it became "a ceremonial campground and a point of embarkation for a receding wilderness." And in 1858 the fort was actually sold to a private speculator.

Reclaimed in 1861, the fort was expanded several times during the succeeding 80 years to meet the needs of wartime armies and department headquarters. Finally given



up by the Active Army in 1946, the fort is home today to several Army Reserve units.

• **POWER AND PRINCIPLE: ARMED INTERVENTION IN WILSONIAN FOREIGN POLICY.** By Frederick S. Calhoun (Kent State University Press, 1986. 333 Pages. \$28.00). During his eight years as President of the United States, Woodrow Wilson committed this country's military forces seven different times (including World War I) to armed interventions in pursuit of his own foreign policy. As the author points out, Wilson established a record of armed interventions "as yet unsurpassed by his successors." As a result, he believes that "force has become an important tactic in American foreign policy in large part because Wilson showed how convenient an alterna-

tive it was."

Calhoun, the historian for the U.S. Marshalls Service, does a fine job of detailing Wilson's reasons for each intervention, the results obtained, and the lessons those armed interventions might hold for the future. Underlying this country's foreign policy at the time was Wilson's belief that "the United States was tied irrevocably with events beyond its borders" and that "he and his successors would have an essential role in the conduct of international relations."

In addition to discussing the interventions, the author details Wilson's often stormy relations with the military hierarchy. Wilson believed strongly in the concept of civilian supremacy and to him "the mission of America is the only thing that a sailor or a soldier should think about. He has nothing to do with the formulation of her policy." It is this aspect of the book that will probably appeal to the professional soldier. In fact, as a result of this kind of discussion of the military role in U.S. society as stated by one president, this book is must reading for the soldier.

Here are some of our longer reviews:

THE RESCUERS: THE WORLD'S TOP ANTI-TERRORIST UNITS. By Leroy Thompson (Paladin Press, 1986. 241 Pages. \$17.95). Reviewed by Captain F.R. Hayse, United States Army.

Terrorism, and especially the nihilistic type that is most prevalent in the Western world today, is a growing threat that has forced many nations to designate a specific military or national police unit to carry out anti-terrorist or hostage rescue operations. And while the goals of these various units may be the same, as the author points out, their individual training and means of employment vary widely.

Leroy Thompson does a creditable job of covering the world's top anti-terrorist forces—their fundamental operational concepts, their training, and their equipment. He is

primarily concerned with the nuts and bolts of the units and not with the theoretical approach to the study of terrorism and anti-terrorist operations.

Although most of what Thompson covers in this book is already well known to those who are familiar with such units and their operations, his compilation of available unclassified information—with appendixes on weapons and equipment, distinctive unit insignia, units and terms, and terrorist groups—makes this a good reference book. It gives interested readers an idea of just how prevalent anti-terrorist operations have become and how important they are in protecting a country's property and its citizens.

THE PERFECT WAR: TECH-NOWAR IN VIETNAM. By James William Gibson (The Atlantic Monthly Press, 1986. 523 Pages. \$24.95). reviewed by Doctor Mike Fisher, University of Kansas.

Infantrymen who served in Vietnam saw little perfection. Rather they learned to survive and succeed in the often unordered ebb and flow of this nation's longest war.

Historian James Gibson searches for the causes of this disorder, and what he finds will delight, baffle, and perhaps anger students of the war. He unrelentingly pursues his thesis that our failure evolved from our tactical and strategical dependence on military technology, often shaping the evidence to fit his conclusions.

Using official records, oral interviews, media accounts, and other sources, Gibson recounts a litany of U.S. military mistakes. We learn of bombing runs made without bombs, set in motion only to raise the number of sorties. We read of Marines burning villages and killing civilians. We note that the famed 173d Airborne Brigade had but a skeleton force in the field because its logistical tail wagged its combat head. Even the CIA failed, the reader learns, because it did not

burn money that was sent into Saigon in 1975 just before that city fell to the invaders.

The author, a non-combatant, seeks to impose order on the battlefield, a surface that seldom proves level. Perhaps more important, he disregards what happened in 1972 after U.S. men and arms left South Vietnam. To know what happened in Vietnam is not always to understand that country or the war that so consumed our own. This is the author's dilemma.

WHAT ARE GENERALS MADE OF? By Major General Aubrey Newman, United States Army Retired (Presidio, 1987. 314 Pages. \$18.95). Reviewed by Lieutenant Colonel David R. Kiernan, United States Army.

In 66 brief chapters, General Newman provides a timeless primer for the military leader. Drawing upon his experiences from a successful career that began as a cadet at the U.S. Military Academy in 1921, he succinctly describes the challenges of Army life in a colorful, poignant manner. Epitomizing an ability to see the universe in a grain of sand, Newman's vignettes are as timely and appropriate now as they were 50 years ago.

The book, despite its title, is universal in its applicability. For the young officer and the noncommissioned officer, there are "how-to checklists" and lessons learned that can be immediately translated into practical application. On the other hand, a civilian reader will have little difficulty in seeing the soldier-leader as "Everyman" dealing with the decision-making process armed only with human qualities rather than as a stoic martinet quoting Army regulations. Finally, the history buff can see in this book the foibles of the personalities who drove the events of World War II.

The real strength of Newman's work rests on his ability to take his environment, assimilate its sights, sounds, and characters, and incorpo-

rate the blend into a microcosm that infuses the lessons of life today with the same validity they had yesterday.

The lesson of this book is a simple one—when in doubt, use common sense.

JANE'S INFANTRY WEAPONS, 1987-88. Thirteenth Edition. Edited by Ian V. Hogg (Jane's, 1987. 1,036 Pages. \$150.00).

This latest edition of the infantryman's "weapons bible" contains Ian Hogg's usual interesting editorial musings and the customary detailed technical data on point target weapons, area weapons, antiaircraft and antitank weapons, electronics and optics, training aids and simulators, and body armor, and it also has an eight-page section titled "identification of obsolete weapons." In it are photographs of 64 weapons generally considered obsolete but which occasionally appear in various parts of the world carried by all sorts of people. For example, there is the U.S. Browning M1917A1 water-cooled machinegun, the U.S. Johnson semiautomatic rifle, and the U.S. Thompson sub-machinegun.

Hogg offers some interesting comments about what he calls the "Great American Pistol Contest" and calls attention to the newest entry, the Ruger P-85.

The book also has several glossaries of terms, an addenda section that updates the main body of the book, a table of national inventories, and an index.

JANE'S WEAPON SYSTEMS, 1987-88. Eighteenth Edition. Edited by Bernard Blake (Jane's, 1987. 1,197 pages. \$159.50).

This new edition of an old standby—the second to be edited by Bernard Blake—is as useful and informative as ever. It does have a somewhat different interior format, for it is now divided into only four main sections to cover strategic,

land, sea, and air systems and equipment. There is still an addenda section to update the main body of the book; an analysis section in which much of the information presented in this and other Jane's yearbooks is arranged in tabular form; a glossary of acronyms and abbreviations; an explanation of Jane's code numbers; and an index.

Of particular importance to the infantryman is the material contained in the land section. Here he will find detailed information about army fire control systems, battlefield support systems (MLRS, Pershing, and the like), antitank guided missiles, portable anti-aircraft guided missiles (Redeye, Blowpipe, for example), and ground radar systems and electronic warfare equipment.

In his foreword, Blake talks about current arms control negotiations and their possible ramifications; the need for the Western European nations to develop in the near future a combined European defense policy; and naval matters, including the escalating naval war in the Persian Gulf.

DEMOCRACY, STRATEGY, AND VIETNAM: IMPLICATIONS FOR AMERICAN POLICYMAKING. Edited by George K. Osborn, *et. al.* (Lexington Books, 1987. 373 Pages. \$35.00). Reviewed by Doctor Joe P. Dunn, Converse College.

This book is the product of the 23d Annual West Point Senior Conference, a symposium of scholars, journalists, political figures, government officials, and military officers that was held in June 1985. The subject was "Vietnam: Did It Make A Difference?"

The book contains essays by 17 contributors and a final interpretive summation by the editors, who are members of West Point's Department of Social Sciences. Obviously the perspectives, arguments, and value of the individual essays vary considerably. The essays address a host of questions on the effect of the war on the Army, the intelli-

gence community, the media, and the like, and on the war's meaning, legacy, and lessons.

Unfortunately, many of the essays are disappointing. But others are excellent, such as Robert Komer's "The Long-Term Significance of the Vietnam Experience" and the editors'. "Did Vietnam Make A Difference? No! Conclusions and Implications." Both express what is the predominant view of most of the contributors, that Vietnam was not a watershed. They believe that for all of that war's short term effects and associated trauma, the global situation we face today would be largely the same with or without it. This statement, of course, is a tremendous oversimplification of what the whole volume is attempting to address.

Finally, the book's title is unfortunate because it sounds unfocused and dull. The editors would have been well advised to capture the spirit and purpose of the enterprise by using the title of the conference.

RECENT AND RECOMMENDED

1988 MILITARY HISTORY CALENDAR. By Raymond R. Lyman. Paladin Press, 1987. \$8.95.

SOUTH AFRICA'S SECURITY DILEMMA. By Christopher Coker. Praeger, 1987. 112 Pages. \$29.95.

ARMS CONTROL AND THE ATLANTIC COMMUNITY. By Werner Feld. Praeger, 1987. 192 Pages. \$35.95.

FIRST USE OF NUCLEAR WEAPONS: UNDER THE CONSTITUTION, WHO DECIDES? By Peter Raven-Hansen. Greenwood, 1987. 252 Pages. \$37.95.

CONTEMPORARY TERRORISM. Edited by William Gutteridge. Facts on File, 1986. 225 Pages. \$9.95, Softbound.

TACTICS: A SOVIET VIEW. By V. G. Reznichenko. A 1987 Reprint of the 1984 Edition. Published under the Auspices of the U.S. Air Force. USGPO S/N 008-070-00589-1. Superintendent of Documents. 256 Pages. \$7.00, Softbound.

WORLD MILITARY EXPENDITURES AND ARMS TRANSFERS, 1986. United States Arms Control and Disarmament Agency, 1987. USGPO S/N 002-000-00092-0. Superintendent of Documents. 168 Pages. \$8.00, Softbound.

CONGRESSIONAL DIRECTORY, 1987-1988. Joint Committee on Printing, 1987. USGPO S/N 052-070-06239-8. Superintendent of Documents. 1,628 Pages. \$15.00, Softbound.

AMTRACS: AMERICAN AMPHIBIOUS ASSAULT VEHICLES. By Steven Zaloga. Color Plates by Terry Hadler. Vanguard Series Number 45. Osprey, 1987. 48 Pages. \$7.95, Softbound.

AMERICAN CIVIL WAR ARMIES (4): STATE TROOPS. By Philip Katcher. Color Plates by Ron Volstad. Men-at-Arms Series Number 190. Osprey, 1987. 48 Pages. \$7.95, Softbound.

THE RUSSIAN ARMY OF THE NAPOLEONIC WARS (2): CAVALRY, 1798-1814. By Philip Haythornthwaite. Color Plates by Bryan Fosten. Men-at-Arms Series Number 189. Osprey 1987. 48 Pages. \$7.95.

THE BRITISH ARMY ON CAMPAIGN, 1816-1902 (1): 1816-1853. By Michael Barthorp. Color Plates by Pierre Turner. Men-at-Arms Series 193. Osprey, 1987. 48 Pages. \$7.95.

UNDERSTANDING WAR: HISTORY AND THEORY OF COMBAT. By Trevor N. Dupuy. Paragon House, 1987. 320 Pages. \$24.95.

A SELECT BIBLIOGRAPHY OF DEPARTMENT OF DEFENSE PUBLICATIONS OF THE SOUTHEAST ASIA CONFLICT. Compiled by Lieutenant Colonel Adrian G. Traas. Southeast Asia History Branch, Histories Division, U.S. Army Center of Military History, July 1987. 19 Pages.

ARMOUR 1987. An *International Defense Review* Editorial Supplement. Interavia, Switzerland, 1987. 58 Pages. \$8.00, Softbound.

THE ILLUSTRATED HISTORY OF THE VIETNAM WAR: SKY SOLDIERS. By F. Clifton Berry, Jr. Bantam Books, 1987. 158 Pages. \$6.95.

THE ILLUSTRATED HISTORY OF THE VIETNAM WAR: ARMOR. By James Arnold. Bantam Books, 1987. 158 Pages. \$6.95.

THE ILLUSTRATED HISTORY OF THE VIETNAM WAR: CARRIER OPERATIONS. By Edward J. Marolda. Bantam Books, 1987. 158 pages. \$6.95.

THE ILLUSTRATED HISTORY OF THE VIETNAM WAR: MARINES. By Edwin H. Summers. Bantam Books, 1987. 158 Pages. \$6.95.

BICENTENNIAL OF THE CONSTITUTION: A RESOURCE GUIDE. Department of the Army, 1987. USGPO S/N 008-020-01112-6. Superintendent of Documents. 141 Pages. \$9.00, Softbound.

BATTLE FOR ULSTER: A STUDY OF INTERNAL SECURITY. By the National Defense University Press, 1987. USGPO S/N 008-020-01101-1. Superintendent of Documents. 153 Pages. \$3.75, Softbound.



From The Editor

LATE ISSUES

We apologize most sincerely for our tardiness in getting our September-October 1987 issue and this issue to you. We could offer a number of excuses but there seems little point in doing so.

We fully expect to be back on a sensible publishing schedule beginning with our January-February 1988 issue, when our annual contract goes into effect, and you should be seeing INFANTRY no later than the 20th day of each publishing month — January, March, May, July, September, and November.

SUBSCRIPTION RATES

As we announced in the September-October 1987 issue, we raised our subscription rates effective 1 November 1987. This action was forced on us by rising publication and mailing costs.

The new rates are \$12.00 for one year and \$23.00 for two years. Foreign (non-APO) subscribers must add \$4.00 per subscription per year to cover handling and mailing costs. Single copies remain priced at \$2.50 each.

HOLIDAY GREETINGS

To all of our readers and subscribers we wish a most happy and pleasant holiday season. Many of you offered your full support to us during this most difficult year and for that we are extremely grateful. Your thoughts of us, your wanting to help, will certainly brighten our holidays.

May the new year — 1988 — bring you and yours joy and happiness.

COMING IN INFANTRY

"Training the Company XO," by Major Walter A. Schrepel.

"Logistical Planning," by Major Gregory C. Vogel.

"Moving to an Alternate CP," by Captain Robin P. Swan.



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