PB 7-96-3



# Infantry

May-June 1996

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# Infantry

**May-June 1996** **Volume 86, Number 3**



## DEPARTMENTS



COVER: The conduct of the stability and support missions that the Army can expect to perform as we enter the next century will draw heavily upon our experience in earlier combat and peace-keeping operations. This issue's cover–an artist's conception of a mechanized force supported by aviation in Vietnam–captures the spirit of the combined arms concept.

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# Commandant's NOTE

**MAJOR GENERAL JOHN W. HENDRIX Chief of Infantry**

## FACING THE TURN OF THE CENTURY

At the beginning of this century, the United States Army was completing the transition to a five-shot bolt-action rifle; the machinegun was only in the earliest stage of development; our tactics still bore the imprint of Napoleonic doctrine; tactical communications relied upon wire, courier, or pigeons; and we were cautiously experimenting with the employment of motorized troop movements. The tank was unheard of; night operations—if conducted at all—were limited to small, short-range missions; and logistical support consisted largely of what a unit could carry or forage along its route of march.

We have come a long way indeed. Today's M-16 rifle—the state of the art in small arms when it was fielded—is to be replaced eventually by a new individual weapon that will provide the infantryman with innovations in fire control and bursting munitions of far greater lethality than ever before. The M-60 machinegun has also served us long and well, and its replacement for active Army infantry, armor, and divisional combat engineer units—the M240B—will be even better. Our tactics and equipment have evolved to the point that today's infantryman can execute a wide array of missions ranging from combat in built-up areas to combined arms operations on any type of terrain. The Abrams tank and the Bradley infantry fighting vehicle are an unbeatable combination, as Iraqi ground forces quickly learned in Operation DESERT STORM.

Night operations—once avoided for their complexity and the risk involved—are now the way we do business. At the turn of the century, owning the night was a scarcely attainable goal; today it is reality. The night fighting training facility (NFTF) at Fort Benning is a prototype designed and constructed by our own Training Support Center, using locally available manpower and materials wherever possible to reduce costs. The facility trains soldiers—regardless of branch, grade, or military occupational specialty—to properly use various night vision devices during ground combat operations. The NFTF concentrates on the individual tasks of see, shoot, move, communicate, and navigate.

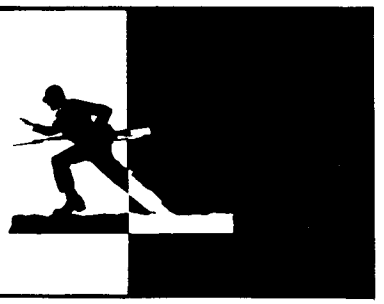
This program of instruction, which focuses on small-unit leaders, will overcome existing training deficiencies in the use of night-fighting equipment. Soldiers training in the facility first receive instruction on unaided night vision and night vision equipment such as goggles, weapon aiming lasers, laser pointers and illuminators, infrared markers and lights, and infrared munitions. Subsequent training focuses on three areas: boresighting laser aiming devices and basic marksmanship techniques with night vision goggles; negotiating various environmental lanes while wearing night vision goggles; and interpreting vehicle thermal signatures using a computer-based program of instruction. This training facility, supported by continuing advances in night vision technology, will ensure our sustained lead in this critical area of the tactical spectrum.

The technological achievements of the past century have extended to the fields of communications and logistics as well. Today's soldier will be able to draw upon the full legacy of the information age as he receives and transmits orders, reports, and situational updates over secure systems. Commanders will have a degree of situational awareness that will enable them to get inside the enemy's decision cycle and seize the initiative. Our logistical support systems have also kept pace with other materiel improvements; our research, development, and acquisition community, the U.S. Army Soldier Systems Command, and other agencies are working relentlessly to ensure that today's U.S. infantryman will continue to be the best supported soldier in the world.

But other significant improvements have also been made; we do a far better job of taking care of soldiers and their families today than at any time in history. The Army is indeed a family, and it is one that tries to meet the needs of all of its members. Improved medical and dental care, recreational support facilities, an array of counseling and advocacy programs, family support groups for the family members of deployed soldiers, and the increased awareness of the needs of the military family have all helped attract and retain the quality soldiers to whom the defense of our nation will be entrusted in the next century.

As I reach the end of my tenure as Chief of Infantry, I see a U.S. Army that is far better manned, trained, and equipped to meet the challenges of the next century than it was in 1896. This did not come about by chance but through the hard work, sacrifice, and innovative spirit of soldiers at all levels, and it is these same qualities that will sustain our nation and her Army as we advance toward the year 2000.

# INFANTRY LETTERS



## SECURITY MISSIONS

The two articles on counter-reconnaissance in INFANTRY's January-February 1996 issue are likely to continue to foster confusion as to what a security mission is. *(See "Counterreconnaissance in Task Force Security Operations," by Major Victor A. John; and "Battalion Counterreconnaissance: 'Flooding the Zone' at the NTC," by Captains Bradley R. Royle and Richard G. Hobson.)*

The mission described in the second of these articles is a guard mission. What is not clear is where the command and control structure is, or what it is. The main problem is that we are trying to develop a doctrine for the National Training Center (NTC) instead of for what we expect the Army to encounter in the future.

Doctrinally, we attack in zone and defend in sector. The term "security zone" is incorrect, and it is not clear what graphic control measure a "counter-reconnaissance line" is. I assume it is the forward edge of the security sector. Our Army has enough problems with getting a grasp on our doctrine without further confusing the issue. We cannot change doctrine just to "win" at the NTC.

According to Field Manual (FM) 17-95, *Cavalry Operations* (page 4-2), "Counterreconnaissance is an inherent task in all security operations." It is not a mission. "It is those measures taken to prevent hostile observation of a force, area, or place," says FM 101-5-1, *Operational Terms and Symbols* (page 1-71).

In his article, Major John has some of the same problems but understands that counterreconnaissance is a subset of security, not the other way around. Security missions are broader in scope than counterreconnaissance tasks. Most of the problems he describes are caused by disjointed chains of command or organizations (such as the counterreconnaissance force) that exist only at the NTC. For example, "Because of its often static role, the counterrecon force is separate from the main body and therefore vulnerable to enemy air attack." This sounds much more like a covering force, and no security force should be that static; observation posts are only one part of the screen or guard mission. It is a task or subset of the security missions of *guard* or *screen* that are conducted at brigade level or below.

As great a training experience as the NTC is, we cannot create a doctrinal mission that may apply there and nowhere else. The tasks listed at the end of the article are the critical tasks of a screen, as listed in FM 71-1, *The Tank and Mechanized Infantry Company Team* (page 4-34). On page 4-36, the manual clearly shows that the counter-reconnaissance effort is a subset of the security mission.

These points may not seem so important, but it is critical that we all understand what every term means and that we use it correctly. The force cannot afford to have confusion between units that may or may not have worked together. Combat will be confusing enough without our contributing to the problem.

JACK E. MUNDSTOCK
LTC, Infantry
Battle Center Training Program

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## ASK THE OPFOR

We have read the article "Battalion Counterreconnaissance: Flooding the Zone at the NTC," by Captains Bradley R. Royle and Richard G. Hobson (INFANTRY, January-February, 1996, pages 42-44), and do not believe it reflects a thorough knowledge of opposing force (OPFOR) doctrine and tactical procedures. Rather, it smacks of NTC "gamesmanship" and techniques that might create more casualties on a future battlefield. The following are some examples:

- The article contends that a battalion often covers a frontage of 12 kilometers or more in the defense. In our combined experience as commanders of opposing force (OPFOR) regiments at the NTC, we have never observed this. In fact, and discounting "no-go" terrain, a *brigade* is rarely given more than 12 to 14 kilometers to defend.
- The authors contend that "flooding the zone" with counterreconnaissance (CR) forces (since a company/team CR force is too small to be effective) will lead to effective deception operations against any OPFOR reconnaissance elements. Any student of OPFOR tactics, techniques, and procedures should know that the OPFOR will never assume that an enemy defensive posture is accurate until the first blade hits the ground and vertical obstacles are in place. The positioning of engineer assets defines the defense, not the location of maneuver forces. For deception to work, it must be believable, and then it must be resourced. If a brigade or task force wanted to make a shrewd deception story, it would start with its engineers and not with maneuver assets.
- The authors state that one of the keys to the "flood the zone" technique is to actually occupy the best observation posts in the main battle area. It would take at least a division (probably a corps) to cover all the key terrain in the NTC's Central Corridor from the Brown-Denum pass complex to Hill 876. To expect a battalion to conduct this task and prepare a defense is unrealistic. At the NTC, you don't have to be deep or high to *see* deep. Any vantage point will provide a relatively high level of intelligence of enemy composition and disposition. A simple map reconnaissance would confirm this fact.

• The statement that the tanks in regimental reconnaissance will "blow" a hole in the security zone to let follow-on reconnaissance assets through is inaccurate. Regimental reconnaissance is not authorized tanks, nor has it ever had any in it. And reconnaissance forces do not habitually begin at 2300 hours the night before the attack. Regimental and division reconnaissance does habitually receive a *no earlier than* time to initiate operations. We would never start them out at the same time, but would use time phasing operations to allow enough time to probe enemy security strengths and weaknesses. The key to successful reconnaissance infiltration is continuity and relentless pursuit.

The idea of flooding the zone with security forces is not feasible. There is a cause and effect analogy here: The more time used to focus on CR, the less time available to prepare for defense. You can't effectively plan, prepare, and execute the defense if your force is committed to counterreconnaissance.

There is a much simpler method that requires fewer resources and will not consume the time of the battalion command group and staff. The OPFOR has been doing it for years. In fact, if you really want to understand NTC tactics, techniques, and procedures, observe the OPFOR. OPFOR and BLUEFOR tactics and processes are essentially the same. For every BLUEFOR mission type and design, there is an identical OPFOR type and design. The difference is what the mission is called (*meeting battle* instead of *movement to contact*). If you think about it, it makes sense. Military tactics and techniques are common sense applied to the battlefield.

The simple reason the OPFOR habitually "wins" on the NTC battlefield is that we know and understand the terrain and what it can and cannot do for us. And an OPFOR unit has the luxury of being able to train year long without distractions. If we were asked how to do effective counterreconnaissance at the NTC, we would say first not to designate a CR force. The moment you tell Team A or Company C that it is the CR force for the battalion, the rest of the organization believes they are relieved of the mission. In the OPFOR, we split the sector into counterrecon zones with each motorized rifle company responsible for its piece of the terrain, and God help the sub-unit that is penetrated by recon assets. Now everyone, not just one specific unit, is tasked with the responsibility for CR. It doesn't have to be more complex than this and, quite frankly, it works.

Our only recommendation to the authors of the article, or anyone else who wants to grasp tactics and techniques that work on the desert battlefield, is to ask the OPFOR. We will be happy to share everything we have, and we certainly have a vested interest in seeing that misconceptions and half-truths are not spread throughout the infantry community.

Regardless of the OPFOR or BLUEFOR uniform, we are all in this business for the same reasons—pursuing excellence, defeating any potential adversary, and saving American lives in combat. The OPFOR is an Army treasure; learn from its time-tested tactics, processes, and procedures. It will only make the Army better.

CHRISTOPHER L. BAGGOTT
LTC, Armor
Commander, 1st Battalion,
11th Armored Cavalry Regiment

PETER J. PALMER
LTC, Infantry
Commander, 2d Battalion,
11th Armored Cavalry Regiment
Fort Irwin, California

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**25th INFANTRY DIVISION CONVENTION**

The 25th Infantry Division Association will hold its 55th Anniversary Convention, 24-29 September, on the island of Oahu, Hawaii.

For additional information, call LTC VanDyke at DSN 455-4420, commercial (808) 655-4420; or CPT McCord at DSN 453-0267, commercial (808) 653-0267.

PUBLIC AFFAIRS OFFICER
25th Infantry Division

# INFANTRY NEWS

THE DOCTRINE DIVISION of the Infantry School's Combined Arms and Tactics Directorate is in the process of revising two manuals and welcomes comments on each of them:

**Field Manual 71-2, *The Tank and Mechanized Infantry Battalion Task Force,*** in cooperation with the Armor School. Most of the doctrine and the tactics, techniques, and procedures (TTPs) of the current version are still applicable, but others need to be changed. Today's more complex missions require commanders and staffs to deploy faster, acquire and apply vast amounts of information, and use firepower and maneuver to defeat several different threats.

To capture the ideas and insights of the armor and mechanized infantry communities, the Infantry School is soliciting input to this revision. Comments on the following, in particular, will be helpful:

- The things that still work and don't need to be changed.
- Recent TTPs on engineer operations with the task force in sustainment operations.
- Discussion on improved communications with SINCGARS (single-channel ground and airborne radio system) and IVIS (the intervehicular information system).
- The effect of improvements in artillery (Paladin vehicle) on fire planning at task force level.
- Discussion of light and heavy operations.
- Discussion of TTPs concerning night vision systems used for offensive maneuver and defensive fire control.

The initial draft of FM 71-2 is slated for distribution in September 1996 with a final draft target date of September 1997.

**FM 7-91, *Tactical Employment of Antiarmor Platoons and Companies.*** The revision of this doctrinal reference for the employment of antiarmor units in infantry battalions will include the changes in organization and equipment since the 1987 edition:

- The revision will eliminate the discussion of the employment of the antiarmor battalion, which is no longer in the force structure.
- The revision will reflect the TOE (tables of organization and equipment) change from the improved TOW vehicle (ITV) to the M2 Bradley for the antiarmor company in a Bradley-equipped infantry battalion. Although Echo Companies in most of these units were recently deactivated, they remain on the TOE.
- The M113-equipped mechanized infantry battalions in the Army National Guard still have an organic ITV-equipped antiarmor company but will change TOEs as they receive Bradley fighting vehicles.
- The new manual will reflect the fact that the antiarmor platoons in airborne, air assault, and light infantry battalions are now equipped with M2 machineguns and MK 19 grenade launchers.

The revision will also add new TTPs for search and attack, counterreconnaissance, convoy security, checkpoint operations, defense against enemy helicopters, combat support, and combat service support.

For infantry battalion commanders and staffs, as well as antiarmor unit leaders, this manual will serve as a doctrinal source of the principles and TTPs used for the employment of antiarmor platoons and companies.

Comments on FM 7-91 may be submitted in any format, but must be received by November 1996 to be incorporated into the final draft. Specific comments along with references are particularly useful. Send to Commandant, U.S. Army Infantry School, ATTN: ATSH-ATD, Fort Benning, GA 31905. Telephone DSN 835-4704, commercial (706) 545-4704, fax 545-7500.

E-mail addresses are: vasser@benning-emh2.army.mil for FM 71-2, and macdonaldt@benning-emh2.army.mil for FM 7-91.

**INFANTRY HOTLINE**

**To get answers to Infantry-related questions or to pass on information of an immediate nature, call DSN 835-7693, commercial (404) 545-7693.**

**For lengthy questions or comments, send in writing to Commandant, U.S. Army Infantry School, ATTN: ATSH-ES, Fort Benning, GA 31905.**

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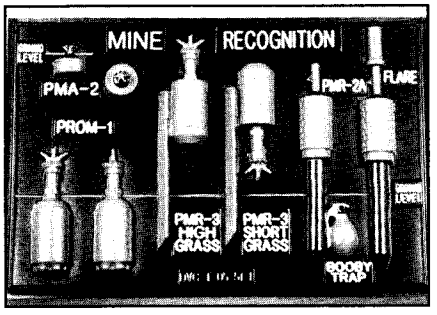
TWO AMMUNITION AND MINE recognition training devices have been developed at Redstone Arsenal for use in teaching soldiers to recognize and identify unexploded ordnance and mines.

The Ammunition Recognition Board Set (DVC-T 05-50) consists of seven different boards, and the Mine Recognition Board Set (DVC-T 05-51) consists of four. The sets are available Armywide and can be requested through local Training Support Centers.

These inexpensive plastic, vacuum-formed, three-dimensional boards show ammunition and mines in their actual dimensions and ordnance color codes. They were developed from a collection of regional mines, mine fuses, delay firing and booby-trap devices obtained from U.S. and foreign sources.




**One of the four boards in the Mine Recognition set**

The boards were produced through the

combined efforts of the U.S. Army Ordnance Missile and Munitions Center and School and the U.S. Army Missile Command.

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THE INTERIM SMALL Arms Protective Overset provides ballistic protection against selected high-velocity 7.62mm and 5.56mm rounds. It is worn over the PASGT (personnel armor system for ground troops) vest to provide additional protection against small arms and flechette threats. It will be available for use until the full solution, modular body armor is fielded in Fiscal Year 2000.

The protective overset consists of a carrier made of camouflage printed nylon duck with adjustable straps at the waist. The additional ballistic protection is provided by two Ranger body armor ceramic plates inserted in pockets on the front and back of the carrier. The overset provides the same level of small arms protection as the Ranger body armor but with a larger area of fragmentation protection. It is compatible with the full range of existing clothing and individual equipment.

Out of a one-time procurement of 4,000 sets, about 1,150 have been provided to mobile and dismounted military policemen in Task Force Eagle in Bosnia. The rest will be available from a single depot for contingency purposes. The contingency stock will be managed by the Support Command's Project Manager-Soldier.

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THE PERSONAL, PORTABLE restroom gives soldiers in a static environment a clean, safe, and sanitary replacement for the old slit trench latrine. It is easily portable, can be set up and functioning in a few minutes, and can be used by both male and female personnel.

The portable restroom is available through the supply system (NSN 4510-01-382-4289). Used along with other products—a disposable urinal bag (NSN 4510-01-379-0177), a solid waste system (NSN 4510-01-379-1341), and the daily restroom kit (NSN 4510-01-379-0190)—it offers commanders an alternative. These products have been designed for use by troops who enter a combat area before more permanent latrines can be set up and functioning. The portable restroom is tailored to a company or platoon, or even a deployed squad.

**TUV prototype SARGE (Surveillance and Reconnaissance Ground Equipment)**

THE TACTICAL UNMANNED Vehicle (TUV) will be a relatively small, lightweight, teleoperated, mobile ground system for use in conducting remote warfare operations in the 21st century.

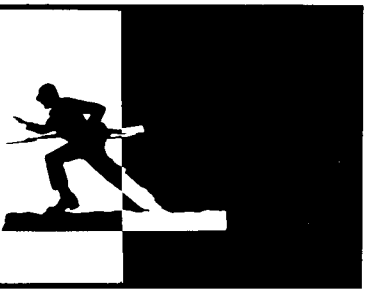
A joint U.S. Army and U.S. Marine Corps program, the TUV is designed for use by infantry battalions as a platform for reconnaissance, surveillance (including nuclear, biological, and chemical detection), and target acquisition.

The Joint Project Office for Unmanned Ground Vehicles/Systems has teamed with the U.S. Army Infantry School and the U.S. Marine Corps Combat Development Command to enter the demonstration and validation phase of the acquisition process.

Clearly, as a tactical reconnaissance system, the TUV must contribute to the force across a wide range of missions, environments, and threats. The Joint Project Office and the Infantry School have begun a concepts study designed to analyze the TUV in an offensive scenario involving a future mechanized infantry battalion. The tactics, techniques, and procedures developed during the study will be vital in stimulating and feeding materiel development efforts.

A phased reconnaissance concept of employment has been developed using TUVs and the infantry battalion's scout platoon for reconnaissance well forward of the battalion. One concept calls for teleoperating six TUVs forward to conduct route reconnaissance and establish observation posts up to 10 kilometers in front of the battalion. The battalion scout platoon may either remain behind the TUVs at the line of departure or move to other areas of the battlespace. This concept of employment allows the TUVs to execute the initial forward reconnaissance while always preserving a portion of the scout platoon or reconnaissance assets to conduct other security and reconnaissance tasks.

# PROFESSIONAL FORUM



# Bradleys in the City

**CAPTAIN JOHN L. MILES, III**
**CAPTAIN MARK E. SHANKLE**

No combat unit today knows where in the world it will next deploy for action, or into what kind of environment. Certainly, one possible environment is an urban one.

For that reason, we want to share some observations and lessons we learned when our mechanized infantry company, equipped with M2A2 Bradley fighting vehicles (BFVs), deployed to a military operations on urban terrain (MOUT) training area in Germany. Specifically, these observations include techniques for gaining an initial foothold in a city, moving tactically through a city, and establishing and securing a company-sized assembly area (AA) in a city.

The first obstacle encountered as the company began preparations for training was the scarcity of published information on using BFVs in an urban environment. Field Manual (FM) 90-10-1, *An Infantryman's Guide to Combat in Built-up Areas,* provides a starting point but does not cover the many problems and issues a unit faces in conducting such operations.

The techniques offered here evolved from training strategy sessions, practical exercises, and situational training exercises. They proved effective for a pure, BFV-equipped infantry company operating in a MOUT environment.

The firepower of 14 BFVs allowed us to be effective at isolating and suppressing buildings, which is essential in gaining the initial foothold. The BFV also provided for the rapid movement of assault troops from the assault position to the initial building while protecting them from small-arms fire.

Phase one of gaining a foothold involves a reconnaissance and a decision regarding which building best suits an initial assault.

Phase two includes the isolation, the suppression by fire of the foothold vicinity, and the initial assault (Figure 1).

***The firepower of 14 BFVs allowed us to be effective at isolating and suppressing buildings, which is essential in gaining the initial foothold.***

During this phase, each BFV is assigned a sector of fire where it is to suppress while a section of BFVs delivers the assault force to the building where the foothold is to be gained.

During phase three, the assault troops dismount and begin clearing the building (Figure 2). After the initial foothold is gained and adjacent buildings have been assaulted and cleared, the rest of the company can safely move forward to clear, seize, or secure the city, depending on its mission.

Once the company has gained the foothold, it must begin movement through the city. Two missions may now present themselves: Fight to secure the city, or secure the company as it moves through the city on its way to a subsequent objective. If the company is securing itself as it moves through—and if no contact is made before the unit enters the city—gaining an initial foothold may not be necessary.

The principle of making initial contact with the smallest element possible is as important in the city as it is in wooded terrain. With this in mind, the company developed, tested, and adopted a modified traveling overwatch technique. After the initial foothold was established, or upon entering the city, a combined team of dismounts and BFVs moved forward to confirm and establish a clear route through the city. In an attempt to avoid confusion, two distinct dismount elements were designated according to their functions: The forward security element (FSE), consisting of six dismounts, and the track security element (TSE), consisting of four dismounts.

The selection of weapons and the placement of the FSE were most effective when employed in the following manner: The two point weapons (M231s) initially provided both a rapid return and a high volume of fire. The next two weapons (M203s) provided the fire-

power of 40mm high-explosive as well as an indirect capability if needed. The final two weapons in the FSE (M249 light machineguns) provided a sustained high volume of fire as suppression for assault or withdrawal.

While moving along a route in this manner, three basic battle drills must be used: Contact front, contact rear, and contact flank. While all three closely resemble the *Actions on contact* and *React to near ambush* drills found in FM 7-7J, *The Mechanized Infantry Platoon and Squad, Bradley,* several issues unique to BFVs in the city are worth mentioning:

First, soldiers must keep in mind that the MOUT battlefield is three-dimensional. Contact can come as easily from above in an upper story window as from below in a sewer. No matter where it comes from, the contact will still fall into one of these battle drills.

Another important issue is the danger of firing armor-piercing discarding sabot (APDS-T) ammunition with friendly soldiers in front of the weapon system. The Bradley commander must ensure the safety of dismounts around his track before engaging with APDS-T.

The task organization of an FSE, a BFV section, and a TSE proved effective for our company. This concept allows for a battle handoff from the FSE to the BFV whenever contact is made. The FSE leader quickly assesses whether the firepower of the BFV will be necessary to suppress and destroy the enemy. If it is, he simply gives the vehicle commander a verbal picture of the situation by FM radio before the BFV moves. For example: *Red 2 this is Red 1, after turning the corner, 200 meters down the road, left side, blue building, third floor, corner window, machinegun nest.* This information is provided to reduce the amount of time the BFV needs to be exposed while the vehicle commander locates and destroys the enemy.

History teaches that any combat unit fighting in a city will almost certainly have to stay overnight at least once. The following techniques for securing a BFV-equipped infantry company inside a city have been practiced, tested with a practical exercise, and adopted.

The urban battlefield is complex, and

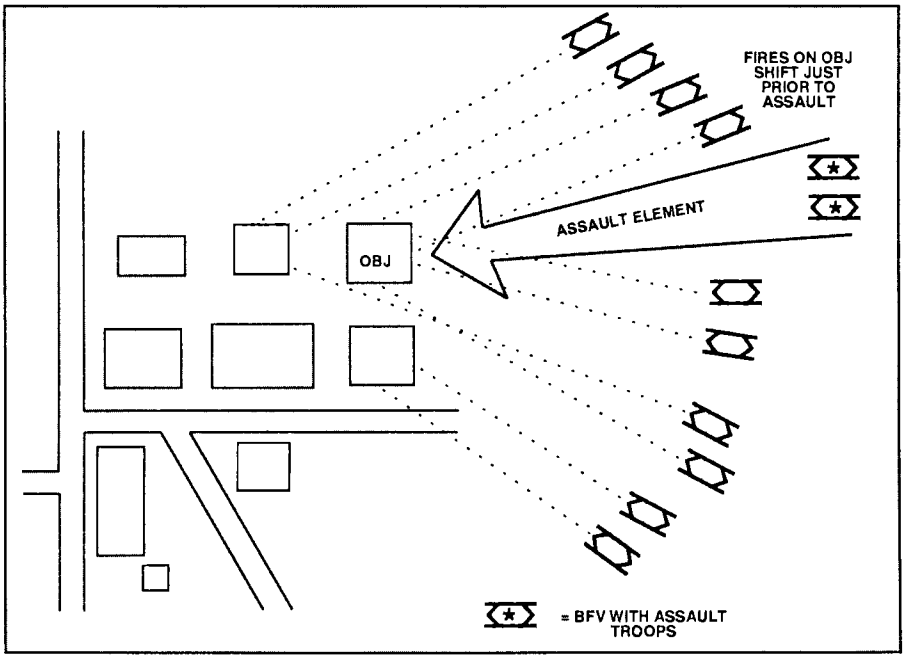



**Figure 1. Isolating and suppressing buildings to gain a foothold.**

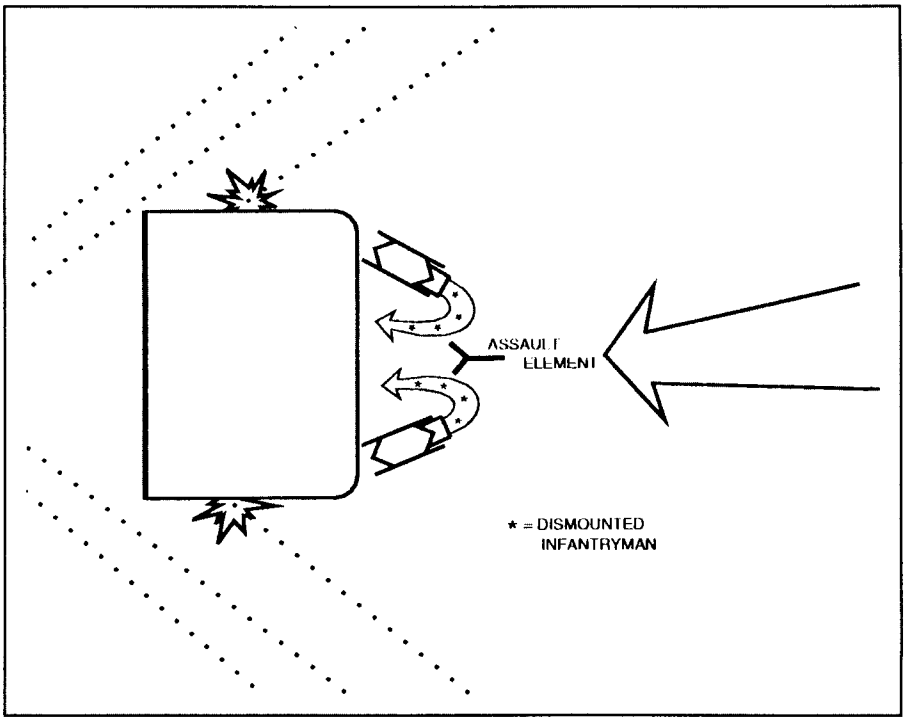



**Figure 2. Assaulting the foothold using BFVs to deliver the assault element.**

integrating BFVs into a defense that is based on buildings, streets, and alleys has proved complex as well. What evolved in our case was an assembly area and hasty defense that incorporated three platoon strong points quartered in buildings; BFVs covered the mounted avenues of approach while dismounts conducted security patrols. Because of the small number of mounted approach routes, many of the company's BFVs were secured in the perimeter, inside a building or under cover whenever possible. The security throughout the night consisted of patrols, dismounted observation posts (OPs) monitoring dismounted approaches, and mounted crews rotating through the BFVs designated to guard the mounted

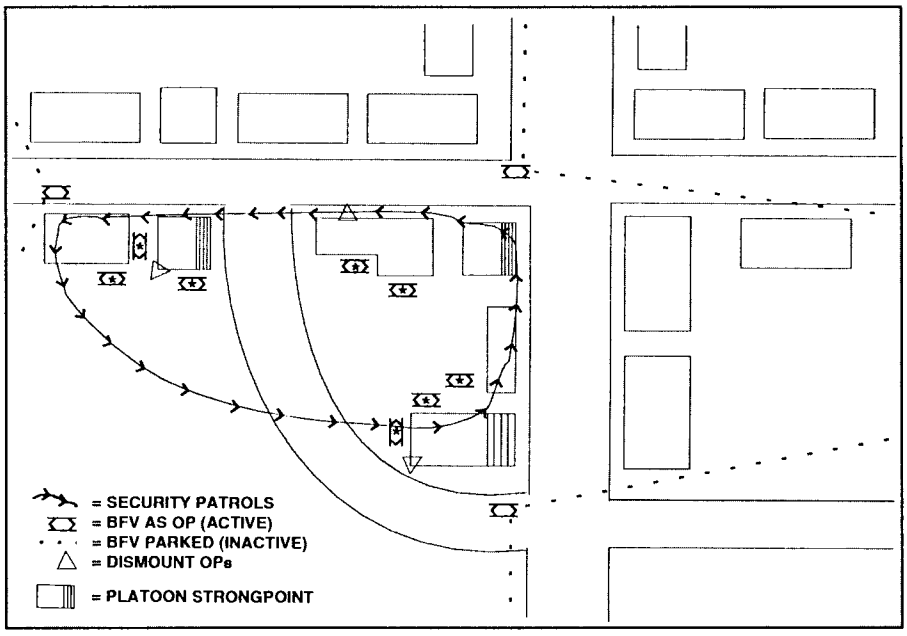



Figure 3. Securing an assembly area with BFVs and dismounts.

approach routes (Figure 3). The most difficult part of this entire operation was providing adequate security while also seeing that the soldiers received enough rest.

The mechanized infantry's change from M113s to BFVs has also changed some of our capabilities; urban warfare requires a large pool of dismount strength that is not always feasible in a BFV-equipped company. The dramatic increase in firepower goes a long way toward compensating for the loss of dismount strength. Still, the nature of urban warfare requires a large number of dismounted infantrymen to enter, clear, and hold buildings. The constraints of the mechanized infantry tables of organization and equipment on the ability of a BFV-equipped company to fight effectively in an urban environment is an issue that must be carefully considered by commanders at all levels.

In a MOUT environment, the shock effect of the Bradley's M242 main gun, combined with the size and speed of the vehicle itself, are tools we cannot afford to use ineffectively. The key to using Bradleys in an urban environment is figuring out how to do it now and then practicing it before we have to use it in a real deployment.

**Captain John L. Miles, III,** led a platoon in Company C, 1st Battalion, 15th Infantry, and served as the battalion's support platoon leader and headquarters company executive officer. He is a 1992 graduate of the United States Military Academy.

**Captain Mark E. Shankle** commanded Company C, 1st Battalion, 15th Infantry, and served as the battalion's motor officer and S-3 Air. He is a 1987 ROTC graduate of Texas A & M University.

# Mechanized Forces in MOUT

## M113 Lessons from Operation *Just Cause*

**CAPTAIN JAMES B. DANIELS**

The increasing urbanization of our world—coupled with the instability in areas undergoing political change—and the reduction of the Army to a force of ten combat divisions demand that we prepare our mechanized infantry units to carry out a greater variety of missions. Military operations on urban terrain (MOUT) is one of those missions, and we must be able to do it right the first time, every time.

One of the first requirements is more flexibility on the part of our doctrine. For too long, we have taught, or at least implied, that MOUT is primarily for light infantry. Leaders of mechanized units must now think of MOUT as a realistic contingency for them and then train accordingly.

A look at some of the experiences of mechanized infantry in Operation *Just Cause* and the lessons learned will illustrate the utility of such units in urban combat.

The first mechanized infantry task force deployed from Fort Polk, Louisiana, to the Republic of Panama in early 1989 in response to President Manuel Noriega's annulment of democratic elections. That force was made up of two rifle companies, equipped with M113A2 armored personnel carriers, along with headquarters and headquarters company

(HHC) support and slice elements. Approximately four months later the 4th Battalion, 6th Infantry, replaced that force with a full four rifle companies, a battalion HHC, and an antiarmor platoon of improved TOW vehicles from the battalion's Echo Company. The vehicles moved by ship while the soldiers flew into Howard Air Force Base near Panama City.

The battalion task force arrived in Panama about four months before Operation *Just Cause* began. Its mission was to protect U.S. lives and property, which it accomplished in part simply through its presence. The existence of a mechanized reaction force gave the U.S. contingent a powerful tool in its dealings with the Panamanian Defense Force (PDF).

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In order to remain highly visible, the task force occupied positions in and near Panama City. Initially, the rifle companies occupied three positions: The company designated the battalion's Quick Reaction Force (QRF) 1 stayed on the U.S. Army compound at Corozal on the east side of the canal, ready to roll within 15 minutes of alert, 24 hours a day. The battalion headquarters, support elements, the QRF 2 company (one hour reaction time), and the QRF 4 company (four hours reaction time) stayed at Camp Gator, a short distance from Rodman Naval Station on the west side of the canal. After the failed coup attempt of October 1989, the QRF 2 company moved to the Curundu military housing area on the Panama City side. The QRF 3 company (two hours reaction time) was based to the north of Camp Gator at the Empire Range complex and concentrated on live-fire exercises and weapons qualification. The companies rotated stations once every five or six days.

The most visible of the task force's missions were company movements through the streets of the city in the vicinity of the Canal. These were called "sand flea" missions, after the tiny biting insects, because they were to be a constant irritation to the PDF, serving as a reminder of the presence and potential of the U.S. forces in the country. They also gave U.S. military intelligence an opportunity to observe PDF reactions to U.S. movements and served to desensitize the Panamanians to the activities of mechanized forces in the vicinity of Panama City.

The sand flea missions normally belonged to QRF 2. This left QRF 1 available to react to emergencies and did not interfere with the maintenance of QRF 4 or the training of QRF 3. The mission plan was simple: The start and release points were at the QRF 2 base camp. Battalion gave the company a designated route through the streets of the city. This route normally included a maintenance halt. Despite the tension of the situation, the company moved without rounds in the APCs' .50 caliber machineguns and without magazines in the individual weapons. This not only demonstrated the lack of hostile intent but also eliminated the chances of an accidental discharge during movement.

The company moved with the vehicles at intervals of ten meters and speeds averaging about 15 miles per hour. This close interval was an adjustment to the urban conditions. It prevented Panamanians, civilians or PDF, from getting between the APCs and separating the company's vehicles. Battalion standing operating procedure was for the company column to continue without reducing speed, regardless of traffic signals or other vehicles, and no major accidents occurred as a result of this policy. The sight of a column of tracked vehicles moving steadily forward was enough to persuade competing traffic to clear the way.

The combat service and combat service support (CSS) aspects of the operation were relatively simple at company level. The vehicle crews performed daily preventive maintenance checks and services on their vehicles wherever they were used. The mechanics of each company's maintenance team were attached to their respective companies for the duration of the deployment. They traveled with the companies as they rotated, bringing with them a parts and tool truck and a tracked recovery vehicle. If a vehicle went down or needed spare parts beyond what the company maintenance team carried with it, the battalion motor officer would send parts on a HMMWV (high-mobility multipurpose wheeled vehicle) or a 2 ½-ton truck to the company location from the battalion base camp. The recovery vehicle always moved with the company to tow any vehicle that had problems enroute. Tank and pump units moved from the base camp to the companies to refuel vehicles as needed.

The battalion cooks set up and operated kitchens at the base camp and the Empire Range complex. The troops at Corozal used mess facilities nearby, and those at Curundu received breakfast and dinner in mermite containers and ate MREs (meals, ready to eat) for lunch.

The carrying capacity of the M113s enabled the soldiers to take their rucksacks and other baggage with them without using company wheeled vehicles. The company's 2 ½-ton truck normally remained at the battalion base camp under the control of the company supply sergeant who maintained the company supply room at the base camp. He also ran mail, quartermaster laundry, and meals to the companies when they were at locations other than Camp Gator.

During the actual invasion of Panama, the companies of the task force had several important missions. Companies B and D, reinforced by one platoon from Company C, blocked the streets leading to and from the Comandancia, the headquarters of Noriega and the PDF. The rest of Company C served as the battalion reserve.

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Company A, attached to the 5th Battalion, 87th Infantry, was spread out into platoon and squad-sized positions that

were responsible for sealing off assigned intersections. The company's 1st Platoon blocked two road intersections about two kilometers north of the Comandancia to make sure that PDF forces could not assist the besieged headquarters and that those trapped in that area did not escape north into the battalion's area of operation. Company A's 2d Platoon blocked a major road intersection slightly farther north, and 3d Platoon occupied the northernmost position. Before taking up its blocking position, 3d Platoon used its .50 caliber machineguns to provide suppressive fire to help a company from the 5th Battalion seize a nearby PDF station.

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During the night, 2d Platoon suffered several casualties from a sniper attack. Instead of risking the medic vehicle, the company executive officer moved forward in his own M113 and evacuated two wounded soldiers and one killed in action to the company casualty collection point.

After the invasion, the battalion continued mounted and dismounted patrols to maintain order in Panama City and to locate PDF and "Dignity Battalion" weapon caches. Several days after the invasion, President Noriega entered the compound belonging to the Papal Nuncio, claiming sanctuary. During his stay there, the building and the surrounding area were guarded by soldiers from 4th Battalion, 6th Infantry. They and their APCs ringed the compound to prevent Noriega's escape or a rescue attempt by his supporters. When Noriega finally surrendered to U.S. authorities, the objectives of Operation *Just Cause* were complete.

The experience of this task force in the MOUT environment offers many valuable lessons for the employment of heavy forces in an urban area. One of its primary assets was speed of movement. Since the mechanized companies had no need to coordinate or link up with transportation assets, they could react and move immediately in response to emergencies or changing situations. For this reason, the task force often served as a "fire brigade" quick reaction force for all the U.S. forces in the Panama City area.

The APCs were, of course, largely confined to the city streets. In the city's major roads, there was more than enough room for vehicle movement, but in the narrower side streets and alleys, it was often impossible for the tracked vehicles to move. Here, especially in the search missions that followed the invasion, the task force's well-trained dismounts played the key role. When dismounting became necessary to conduct door-to-door searches, the platoons parked their APCs together in a place that afforded the best protection from sniper fire. Drivers and track commanders stayed with the vehicles while the rest of the platoon conducted searches on foot. Whenever the dismounted forces needed anything from the vehicle, a radio call brought a quick response.

Reluctance to use mechanized forces in urban terrain often grows out of concerns about their mobility. But Army leaders must remember that city streets in most countries are well-suited to the movement of mechanized vehicles. Although there is a potential for ambushes and blocked choke points, vehicles can still move faster down paved streets than they can going cross-country, even in the best of terrain.

In addition to speed, the M113s gave the task force some armor protection. Although they were vulnerable to antiarmor weapons, they did provide protection from small arms and sniper fire. On the modern battlefield, vulnerability to antiarmor weapons, especially one-man weapons, cannot be ignored, but this vulnerability alone should not deter the use of mechanized forces in MOUT.

Rules of engagement and concern for the civilian population of Panama greatly restricted the use of field artillery and aviation fire support assets. The M2 .50 caliber machinegun mounted on the M113s provided effective direct fire support that could penetrate the wood and masonry walls of buildings used as sniper positions. Because of the abundance of ready-made fighting positions in MOUT, units must have immediate access to direct-fire weapons that can penetrate the walls of most buildings in the area. Antiarmor weapons such as the AT4 can fulfill this role, but dismounted soldiers cannot carry many of them. This makes city fighting the ideal environment for the direct-fire weapons of the M113 and the Bradley fighting vehicle.

Another great advantage of the M113s in *Just Cause* was the mobility of CSS. Each M113 carried a significant load of ammunition. One typical load on an APC included 2,015 rounds of 5.56mm, 2,560 rounds of 7.62mm, 3,320 rounds of .50 caliber, 6 light antiarmor weapons (LAWs), and 6 AT4 rounds. Even with these amounts, the APCs had room for all the soldiers' rucksacks and additional ammunition as well. This load was enough for all of *Just Cause,* and it eliminated the need for resupply. Knowing that resupply was right behind them, troops could move, immediately on call, with just basic loads for their individual weapons.

Besides the Class V supplies, each M113 also carried a large amount of Class IV. Three rolls of concertina wire hung on each side. These kept demonstrators from climbing up the sides of the vehicles during the pre-invasion confrontation days. They also gave the squad a quickly available resource to use in blocking streets. Besides the wire, each vehicle carried a large number of sandbags. A layer covered the floor of each to provide protection from mines. The soldiers also built a parapet of sandbags two high and

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two wide around the top of the vehicle to provide extra protection for the soldiers standing up in the cargo hatch. When the vehicle arrived at its position, soldiers could use sandbags from this parapet to build fighting positions on the sidewalks and streets, where they could not dig in.

The resupply of Class IX repair parts was no more difficult in MOUT than in regular field operations. The battalion supply system pushed parts forward as needed. The CSS portion of the battle, while more difficult for mechanized forces than for light, was much simpler than it had been back at Fort Polk. In Panama City, resupply vehicles carrying Class III oils and lubricants and Class IX repair parts moved on paved streets instead of dirt trails and cross-country.

The MOUT environment did not seriously affect maintenance operations. Moving through the streets caused less wear and tear than the normal cross-country movement at Fort Polk or the National Training Center—except for increased wear on track shoes and pads.

The command and control systems within the task force facilitated the decentralized operations that the task force carried out simultaneously over a large section of Panama City. Each squad had a radio in the M113, and each squad leader carried an AN/PRC-126. This, combined with the mobility of the vehicles, allowed for the almost immediate concentration of the company whenever it was needed.

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In mobility, countermobility, and survivability, the M113s proved their usefulness in several ways. Mobility was aided by the fact that the mechanized forces could move through potential choke points before the PDF could emplace enough obstacles to block them. The improvised roadblocks the PDF used in trying to block the task force were easy to overcome.

Before the deployment to Panama, the battalion had developed and practiced a roadblock drill in which a platoon quickly and effectively sealed off an intersection with concertina, steel caltrops designed to puncture vehicle tires, and sandbagged fighting positions. The speed with which the platoons moved to designated locations and set up their road blocks multiplied their effects, because it gave the PDF less time to react to them.

The protection offered by the vehicles gave the troops a higher level of survivability. Although the armor protection of the M113 is much less than that of the M2 Bradley or the M1 Abrams tank, it was still enough to protect the troops from most small arms fire. Many of the task force soldiers worried about the vulnerability of their M113s to antiarmor weapons, but the vehicles offered more protection than soft-skinned wheeled vehicles, which were the only other transportation that could have given the task force equal mobility.

In static positions, the sandbags enabled the task force soldiers to build fighting positions that gave them considerable protection from drive-by shootings. They were quickly constructed without collateral damage to the area, an important consideration in operations other than war.

In addition to the battlefield operating systems discussed here, the psychological effects of tracked vehicles are worth mentioning as well. The PDF, unaccustomed to dealing with tracked vehicles, were intimidated by the very noise of the M113s. The unexpected appearance of tracked vehicles in an area where they are not normally used can have a powerful effect.

The experience of the 4th Battalion, 6th Infantry, in Operation *Just Cause* shows that mechanized forces can conduct effective operations in an urban environment. They are not a cure-all for the difficulties of urban warfare, and it is not advisable, or even possible, to use mechanized forces in every imaginable situation. But mechanized forces can make far greater contributions to urban combat than many in today's Army believe. The same advantages that mechanized forces have in open terrain—speed, flexibility, and troop protection—still exist and in some cases are multiplied in urban operations.

The amount of space in Field Manual 90-10-1, *An Infantryman's Guide to Combat in Built-up Areas,* that is dedicated to MOUT with fighting vehicles is comparatively little. This training must include both dismounted infantrymen and vehicle crews. Dismounts must train on the standard MOUT dismounted skills. They must also learn how to integrate their actions with their support vehicles. Vehicle crews need to learn how to maneuver their vehicles through city streets, to estimate at a glance whether bridges and overpasses are likely to support their vehicles, and to coordinate their actions with moving dismounts. Both must learn the effects of M1 and M2 weapons on the different types of construction found in urban areas. They must also learn how to integrate their weapons into a defensive network in the middle of a built-up area.

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MOUT is an unavoidable fact of modern warfare. Mechanized forces can have a decisive effect on city fighting and must train to do so. Once this is accomplished, U.S. forces deployed to conduct stability operations can do so with the confidence that they are trained and equipped for the task at hand.

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# ATGM Countermeasures

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Two events during the past few years have contributed significantly to a worldwide proliferation of antitank guided missile countermeasures (ATGM-CMs)—the end of the Cold War and the dramatic allied success in the Persian Gulf War.

It is therefore important that U.S. ATGM gunners and antiarmor leaders become more aware of the common countermeasures that could be used against them. The recent information on the subject offered here should prove helpful. The discussion of foreign ATGM-CM examples in this article is intended to show the technology available, not to identify specific threats to U.S. forces.

ATGM-CMs to achieve hit avoidance can be used against ATGM gunners, systems, or munitions. Those available include reactive armor, smoke or obscurants, and active protection systems (APSs), both softkill and hardkill.

### Reactive Armor

Several countries—including the Czech Republic, Israel, Poland, Russia, and the United Kingdom—offer reactive armor for sale.

In reactive armor, an explosive sandwiched between metal plates detonates and jettisons the outer metal upon contact of the shaped-charge munition. The rapid motion of the outer metal plate disrupts the shaped-charge jet to defeat or reduce penetration. The flying metal plates cause the jet to cut through new metal, which reduces the shaped-charge's ability to penetrate the tank.

Newer reactive armors can be developed to counter ATGMs that were developed with tip charges to defeat first-generation reactive armor. Russian second-generation reactive armor, called Kontact-5, provides an equivalent protection level for a T-55 tank of up to 900mm and is also advertised to be effective against kinetic energy projectiles.

Potential counter-countermeasures against tanks equipped with reactive armor include engaging where there is no reactive armor or engaging the reactive armor at 0 degrees obliquity (perpendicular to the angle of the reactive armor).

### Smoke and Obscurants

Many countries consider the use of obscurants essential to success in both offensive and defensive operations on the modern battlefield. Most also have in their inventories a wide range of obscurant disseminating systems and have stressed the increasing importance of obscurants. Obscurant-filled projectiles, used typically to lay blinding smoke on ATGM positions, are particularly useful with smoke-grenade launchers, which provide a fast way of screening the vehicle. Obscurants launched from these grenade launchers can block the view of the target or interfere with ATGM guidance.

In addition to the smoke grenade launchers, many combat vehicles have a vehicle engine exhaust smoke system, which sprays diesel fuel into the exhaust manifold. This system is used to produce obscurants to protect the unit's movement. The obscurants interfere with direct-view optics, image intensification sights, ATGM guidance, and lasers. Although thermal sights enable the gunner to see through some smoke, he may not be able to maintain control of the ATGM through it and may lose the missile unless he is using a TOW-2 family of missiles, a modified missile guidance system, and the thermal sight.

Improved obscurants can reduce the effectiveness of thermal sights. Advanced obscurant grenades create multispectral clouds that affect thermal sights and ATGM guidance systems. For example, a German firm offers for sale a vehicle-launched IR screening smoke grenade, the NS 20, which is efficient in the 3-to-5 micron and 8-to-12 micron regions. The NS 20 would be effective against thermal sights. The Russians offer an aerosol screen that is reported to be effective in the visible through IR range (.4 to 14 microns). This smoke is deployed by 12 smoke grenade launchers 50 to 80 meters from the tank, is established in three seconds, and lasts for about 20 seconds.

A French company has developed the GALIX combat vehicle protection system, which fires a variety of 80mm grenades, activated from inside the vehicle. The grenades available for the system include smoke, antipersonnel, flare, tear gas, and IR decoy. The GALIX is part of the Leclere tank.

Potential counter-countermeasures to smoke include: looking for holes in the smoke or using flanking or oblique fire to engage a different target; moving to another firing position from which the targets can be seen and engaged; considering the wind direction and speed when selecting alternate sites; and using TOW-2 family ATGMs with modified missile guidance systems, and thermal sight to overcome the effects of smoke.

### Active Protection Systems

Active protection systems (APSs) electronically sense incoming direct-fire ATGMs and HEAT (high-explosive antitank) munitions and defeat them before they hit the vehicle. These include both

soft-kill and hard-kill systems. Soft-kill systems cause the ATGM to miss the target. Hard-kill systems fire munitions at incoming rounds to destroy, neutralize, or detonate them. Several countries—including France, Germany, Israel, Russia, and the United Kingdom—are developing APSs, including those discussed here.

**Soft-kill Systems.** Many armored vehicles are equipped with laser warning receivers (LWRs) to alert the crews when their vehicles have been scanned by a laser rangefinder. A receiver can tell the crew the type of rangefinder or designator and the direction of the laser. The crew can then take evasive action, either firing its weapons at the laser or launching smoke. Some tanks have their laser warning receivers linked to the smoke grenade launchers, causing smoke to be employed automatically when a laser strike is detected.

The Polish BOBRAWA system—one of the first integrated anti-ATGM packages developed for export—includes the LWRs and 13 81mm smoke grenade launchers. The Polish PT-91 tank has 24 smoke grenade launchers.

Potential counter-countermeasures to LWRs include limiting the use of laser rangefinders or using one on an object near the target vehicle, instead of on the target itself, to determine range to the target. (The object selected should be at least three vehicle lengths from the target vehicle to avoid triggering the LWR with the laser.) In certain situations, it may be advantageous to employ the laser rangefinder on suspected enemy positions to trigger the LWR and have the enemy tank launch smoke to confirm that it is there.

ATGM infrared (IR) jammers use an IR signal to confuse an ATGM in flight with erroneous signals, causing it to miss its target. During the Gulf War, Iraqi T-72 tanks were identified as using Chinese manufactured IR jammers.

The Russian SHTORA-1 (TShU-1) includes an IR jammer that may be effective against first-generation SACLOS (semiactive command line of sight) ATGMs such as TOW, Dragon, Milan, Cobra, AT-3, and HOT (high-subsonic optically teleguided). According to Russian advertisements, the SHTORA-1 can be mounted on T-72, T-80, and T-90 tanks and a variety of other armored combat vehicles. The SHTORA-1 defense includes a computer control complex, two ATGM jammers (one on either side of the main gun), 8 to 12 smoke grenade launchers, and four laser warning receivers that can automatically orient the main gun on the laser and launch the grenades.

Potential counter-countermeasures to ATGM jammers include detecting them with image intensifier and thermal sights before ATGM launch, selecting a different method of attack, and using TOW-2 family ATGMs with modified missile guidance systems and thermal sights to overcome the effects of the jammers.

Many armies use laser rangefinders and target designators, which can cause temporary or permanent injury to the eyes of soldiers using direct view magnifying optics without the correct laser filters. Some countries are developing more powerful lasers as weapons. Lasers can jam or damage electro-optical sights—depending on their power and range and the atmospheric conditions—and can also be used to locate optics through a process called retro-reflection.

China recently displayed such a manportable laser weapon—the ZM-87—which may be effective out to ten kilometers. The ZM-87 consists of a portable electric energy converter (supplied by battery), an optical transmitter, a tripod with a sighting regulator, and a cable connector. It is designed to blind soldiers and damage photoelectric sensors, including the detectors in laser rangefinders and video cameras, or the seeker heads in laser-guided missiles.

Potential counter-countermeasures to enemy lasers include the following:

- Using laser warning receivers to warn the crew of laser use and covering optics when not in use.
- Using laser filters (in the appropriate wavelength) on direct-view optics, or thermal and image intensifier devices to protect the soldier's eyes from laser injuries. The ballistic or laser eye protection system (BLEPS) will protect the individual soldier's eyes from lasers so long as magnifying optics are not used in front of the BLEPS.
- Using smoke to block laser energy and suppressing the laser weapon with direct fire.

**Hard-kill Systems.** The Russian DROZD detects an incoming ATGM and fires a projectile to destroy or neutralize it. The DROZD, which is effective against both antitank grenades and ATGMs, uses a radar to detect incoming munitions and has eight counter-munitions available. It has been seen mounted on the T-55 modernized tank.

Another Russian designed system, the ARENA, which is still in development, may be effective against antitank grenades and ATGMs. It provides 180-degree protection, uses a radar to detect incoming munitions, and has 22 countermunitions available. German and French companies are working with the Russian company to develop and market the ARENA system.

A British company is developing the Defender Tank Antimissile System (TAMS), which uses a radar to detect the incoming round and twin 7.62mm chain guns to engage incoming munitions.

Even hard-kill systems do not protect a vehicle from all directions. Potential counter-countermeasures to enemy tanks equipped with hardkill systems are to engage the targets in their vulnerable areas; use artillery or kinetic energy rounds to destroy externally mounted sensors and countermeasure dispensers; and use antitank mines to slow, turn, or stop enemy tanks.

U.S. antiarmor crews can expect their positions to be attacked with both direct and indirect fire. New direct-fire munitions include smart high explosive fragmentation (HE-FRAG) rounds that are programmed to explode over a target, ATGMs with blast warheads, and direct-fire flechette rounds. A 125mm HE-FRAG round, available on the open market, can be programmed to explode over a defensive position out to five kilometers, or it can be contact-detonated out to 9.7 kilometers. The BMP-3's 100mm HE-FRAG round could be used to destroy ATGM positions out to four kilometers. The Swedish CV-90 infantry fighting vehicle has a 40mm gun equipped with the 3P round, which can be programmed to explode over a defensive position.

Many foreign ATGMs have longer

ranges and faster speeds than U.S. ATGMs, and several of them can be equipped with blast warheads for use against defensive positions. Consequently, it is possible for a U.S. ATGM gunner and an enemy ATGM gunner to engage each other at the same time, in which case the enemy missile would hit first. Thermal sights for ATGMs are also being offered for sale.

Indirect fire munitions include obscurant-filled projectiles, guided projectiles, submunitions, fuel air explosives, and flechettes. The Russians offer a 120mm gun, mounted on the 2S9, 2S23, and 2S31 self-propelled gun vehicles. It can put direct fire out to 800 meters, HE fragmentation mortar rounds to 7.1 kilometers, HE-FRAG howitzer rounds to 8.7 kilometers, and HE-rocket-assisted projectile (HE-RAP) rounds to 12 kilometers. The Russians offer for sale 122mm and 152mm flechette rounds that could be extremely effective against unprotected positions.

Potential counter-countermeasures include shooting and then moving to alternate positions, conducting effective counterreconnaissance operations, using camouflage and concealment to prevent detection, and using overhead cover to protect against indirect-fire munitions.

Given all of these potential ATGM countermeasures, it is clear that all antiarmor personnel must become familiar with them and then practice and train against them. Toward that end, the Infantry School is updating Field Manual 7-91, *Tactical Employment of Antiarmor Platoons, Companies, and Battalions.* Additionally, the school, along with the National Ground Intelligence Center, is developing an ATGM countermeasure video that should be available some time this year.

Enemy ATGM-CMs on the battlefields of today and tomorrow could severely affect the way this country fights antiarmor battles. In terms of the availability of potential ATGM-CMs, almost every enemy armored vehicle will have smoke grenade launchers and use camouflage. Most enemy tanks could have explosive reactive armor, many could have laser warning receivers, and some could have ATGM jammers and hard-kill active protection systems. Some may even have laser weapons.

Since the Persian Gulf war, ATGM countermeasures have received new priority in many of the armed forces of the world, and many countries are likely to develop them or otherwise acquire them on the international arms market. Although most of these ATGM countermeasures have yet to prove their combat effectiveness, there is little doubt that ATGM combat will continue to become more difficult.

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# LRS Missions

## What Generates the Need for Them?

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Soldiers always perform their missions better when they understand how those missions fit into the overall operation. We often send our soldiers out with such instructions as, "Man OP 3," or "Observe NAI 9." But we don't clarify *why* they need to conduct reconnaissance or how important the information they gather may be to the commander. Soldiers who understand the big picture will better understand the need to collect and report information quickly, and will give their commanders more accurate and timely reports.

If our long-range surveillance (LRS) leaders are to fully understand, they must be familiar with the three tools of the tactician: The troop-leading procedures (TLPs); the estimate of the situation; and the intelligence preparation of the battlefield (see accompanying box).

Our noncommissioned officer education system does a good job of exposing our NCOs to the TLPs, but few of the leaders I have seen know much about the estimate or the IPB. None of us can become experts on these three tools in a day, but LRS leaders need to be exposed to the basics and know how they apply to the generation of reconnaissance and surveillance missions.

The need for information begins immediately after step one of the TLPs, and usually upon receipt of the warning order. The commander and his staff conduct a mission analysis, and the IPB process begins. An infantry division will illustrate the process:

The division commander begins his mission analysis after receiving the warning order and completes it shortly after receiving the operations order. When the

mission analysis is complete, he gives his staff initial planning guidance, along with the restated mission.

According to Field Manual (FM) 34-10, *Division Intelligence and Electronic Operations,* planning guidance often includes the following:

- Specific courses of action to consider.
- Critical information and intelligence requirements.
- Special IPB considerations.
- Electronic attack targets and objectives.
- Operational security considerations.
- Deception opportunities.

At this point, the commander directs the intelligence effort by selecting information requirements and assigning priorities to them. These requirements, called the commander's critical information requirements, include information on both friendly and threat forces (FM 34-1, *Intelligence and Electronic Warfare Operations,* p. 2-17):

- Friendly forces information requirements (how I see myself).
- Priority intelligence requirements (how I see the enemy).
- Essential elements of friendly information (how I prevent the enemy from seeing me).

Division information and intelligence requirements concerning the threat are expressed in terms of information requirements (IRs) and priority intelligence requirements (PIRs). The IRs are specific items of information needed to satisfy intelligence requirements. The PIRs are those intelligence requirements for which a commander has an anticipated and *stated* priority in his task of planning and decision making (FM 34-10, p. 4-3). The commander and his staff evaluate the IRs immediately to determine which requirements will be upgraded to PIRs. This is done during Step 3 of the TLPs while the commander and staff are conducting their estimate of the situation.

Because the estimate and the IPB are continuous, the staff may generate additional IRs in support of the concept of the operation and targeting as the TLP process continues. As these new IRs become known, the staff prioritizes the requirements and recommends which should be considered PIRs. (The commander must approve all PIRs.)

**TOOLS OF THE TACTICIAN**

**TROOP-LEADING PROCEDURES**
- **Receive the mission.**
- **Issue warning order.**
- **Make a tentative plan.**
- **Reconnoiter.**
- **Start movement.**
- **Complete the plan.**
- **Issue the plan.**
- **Supervise.**

**ESTIMATE OF THE SITUATION**
- **Analyze the mission.**
- **Analyze the situation and develop courses of action (COAs).**
- **Compare COAs.**
- **Decide on a COA.**

**INTELLIGENCE PREPARATION OF THE BATTLEFIELD**
- **Define the battlefield environment.**
- **Describe the battlefield's effects.**
- **Evaluate the threat.**
- **Determine the COAs.**

For an IR to become a PIR, it must confirm or deny an enemy capability, course of action, or characteristic of the battlefield that significantly affects the commander's tactical decisions. Additionally, the commander must be willing to commit more than one collection asset to the gathering of PIRs to ensure the needed information is collected. The G-2 allocates most of his efforts to meeting the requirements that have been designated PIRs and develops a collection plan. The plan is later integrated with the synchronization matrix and the decision support template or matrix.

In establishing and prioritizing intelligence requirements, the commander and staff should consider these guidelines:

- The collection manager should not accept or propose an IR until he fully understands and can track the friendly action it is designed to support.
- Every IR must be situationally templated and wargamed.
- The G-2 should nominate PIRs for approval only from the list of IRs already planned and coordinated.
- Information that will meet a PIR must be collectable, and the commander must understand how it is to be collected.
- Because of limited collection assets, the commander must restrict his PIRs to his most critical requirements.

Too often, a PIR is expressed in the form of questions: "Will the enemy attack? If so, how, when, where, and in what strength?" Such a PIR is worthless. Among other things, it is too broad, and this one actually contains five significantly different questions. A more useful PIR would be, "Will the enemy reserve tank battalion reach phase line RUGBY before 150900Feb95?" This PIR is more focused; it will confirm or deny any enemy capability or course of action that will significantly affect the commander's tactical decision making process, and it is likely to have a friendly action associated with it.

Having a well-stated PIR is not enough. We now need information that is useful to the infantryman on the ground—that helps him answer the PIR. These are called specific information requirements (SIRs).

The SIRs form the basis for specific orders and information requests. They are derived from particular indicators that the G-2 has identified as being able to satisfy each PIR. These should be tied in to the named areas of interest (NAIs) on the event template or the target areas of interest (TAIs) and decision points on the decision support template; SIRs are usually expressed in the form of a question. Using the example above, the indicators might be "increased tracked vehicle reconnaissance north of PL RUGBY" and "lateral tank repositioning along Highway 8" or "prepositioning of CSS assets to support an attack."

These indicators can now be translated into the more useful SIRs: "Is the enemy conducting platoon-size mounted reconnaissance vicinity NAI 17?" or "Is a tank company element or larger traveling west along Highway 8 vicinity Decision Point 3?" or "Are there refueling sites set up along route BRIAN vicinity NAI 12?"

The development of SIRs also applies to IRs. For example, "Is the enemy planning alternate river crossing sites of the Red Neck River?" is a legitimate IR. It has some effect on the commander's tactical decisions and will have a friendly action tied to it (repositioning of forces or use of indirect fire). Since it does not have a *significant* effect, however, and the

commander is not willing to commit several assets to this requirement, it remains an IR. The G-2 now determines that indications the enemy will plan an alternate river crossing site would be ferries and pontoon bridges in the staging areas north of the river. The G-2 then analyzes where likely locations would be and, based on the enemy composition, what equipment is likely to be there. When this is done, he asks the specific question (an SIR): "Are there vehicle launched bridges and other bridging equipment near NAI 10?"

The formulation of the intelligence collection plan begins immediately after a mission analysis is conducted, and it continues throughout the estimate process. Typical early information requirements are focused on the battlefield environment and the battlefield effects such as the trafficability of a section of restricted terrain or the usability of a landing zone or drop zone. This information is used to refine the division's modified combined obstacle overlay. As the estimate process continues, however, the focus of intelligence requirements moves toward information that may confirm or deny friendly and enemy courses of action.

Even later, information requirements may be oriented to support the commander's decision support template. Examples include surveillance of decision points, or observing a trigger line, or observing the friendly side of a TAI or deep engagement area to confirm the effectiveness of a deep close air support strike (battle damage assessment). Other possible LRS missions in support of division operations include observing TAIs and using laser designators to assist target acquisition. Target acquisition missions obviously occur after a COA has been decided and is being executed.

We know that the SIRs form the basis for directing collection assets. Information is more accurate when the collector understands the indicators, the PIRs, and the friendly actions tied to the collection effort, whenever possible.

The LRS leaders must understand that TLPs, the estimate of the situation, and the IPB are continuous processes that generate information requirements throughout the planning and execution of a military operation. LRS missions can be generated at the following times:

- After the mission analysis.
- During the initial phases of the IPB to determine certain battlefield effects.
- Continuously throughout the IPB process to confirm or deny enemy COAs.
- Throughout the estimate process to assist in the formulation of the best friendly COA.
- After a plan is completed and is being executed.

Because operations are often fast-paced and complex, an LRS unit may employ teams in support of the final phases of one division operation, while also employing teams in support of the initial phases of the next operation. When the LRS leaders understand this—along with the way they fit into the big picture and the source of their given SIRs—the information and intelligence they provide will be accurate and much more useful to the commander.

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# Let's Reorganize

## The Light Infantry Division

**LIEUTENANT COLONEL MARTIN N. STANTON**

During the past few years, light infantry units have played a tremendous role in low-intensity conflict or peace operations around the world. In Somalia and Haiti, the strategic deployability and relative combat power of the light divisions have made them our tool of choice for sustained operations of this kind.

At the same time, however, we should not allow the success of light infantry units in these operations to blind us to continuing problems with the J-series table of organization and equipment (TOE).

The light infantry organizations in both Somalia and Haiti had to be augmented with transportation and communications assets. While these cross attachments were readily available, and relatively inexpensive in terms of the Army's overall resources, they reminded us once again that the division TOE is just a bit too austere to operate effectively for long periods of time or over extended distances.

This austerity results from the original concept of a 10,000-man division that could be moved in 500 C141 aircraft sorties. This may have made sense in the 1980s, when the Army had 18 divisions and the Warsaw Pact countries to worry about. Now, however, the reason for holding the line at 500 sorties is no longer valid. Light units in the future will most often deploy in battalion or brigade task force packages and operate over great distances for months or years—something they can do now only with augmentation. This augmentation, in turn, reduces the ability of the transportation battalion and other division support command units to perform their main functions of sustaining the division. Light division maneuver units do not have enough support assets to deploy and sustain independent operations. If these units are to succeed in a long-term stability and support environment, the light division must be reorganized.

In addition, several tactical organizations in the light battalion need to be changed. The company mortar section has too few resources to fully accomplish its mission, and the organization of the TOW systems in the brigade does not lend itself either to massed antiarmor fires at the higher end of the spectrum of combat or to flexible operations at the lower end.

Fortunately, some relatively minor modifications to the TOE would greatly improve the ability of the light units to conduct sustained operations across the spectrum of combat. To do this in many cases, we need only to go back to the previous H-series TOE.

We can make the J-series light infantry organization more effective by implementing four changes:

**Increase the battalion sustainment structure.** The light battalion has a ridiculously austere combat service support structure, and this problem is compounded by unrealistic design assumptions. For example, the support platoon almost invariably gives up a HMMWV (high-mobility multipurpose wheeled vehicle) to each company for use as a company truck, although the TOE does not reflect the need for such a vehicle. The loss of the HMMWV reduces the platoon's ability to conduct its own support operations. (The other prime example of vehicles performing functions other than those specified by the TOE is transfer of the ammunition carriers from the mortar platoon to serve as command and control vehicles.)

As a result of this siphoning off of transportation platoon assets—of which it has too few to begin with—the battalion depends on coordination with the transportation battalion for missions that were handled in H-series units by organic transportation assets. While experience in Somalia and Haiti clearly has shown that the unaugmented light infantry battalion is limited in the tasks it can perform, this experience has also shown that these units can perform quite well with only a small increase in their transportation assets.

A good place to start would be to increase the size of the support platoon by going back to a modified H-series TOE.

***We should not allow the success of light infantry units in Somalia and Haiti to blind us to continuing problems with the J-series organization.***

Using 5-ton trucks instead of 2 ½-ton will greatly increase the battalion's ability to sustain itself and to shuttle rifle companies using its own vehicles. We should also give the support platoon a light transportation section of four to six HMMWVs to use in resupply operations over terrain that 5-ton trucks can't negotiate.

In addition, the number of water trailers in the battalion should be increased to provide one per company. This would be especially useful in low-intensity conflict environments, in which companies are often given responsibility for their own sectors and operate out of separate base camps many miles apart. In addition to changes to the battalion support platoon, we should create a battalion maintenance platoon with a wrecker and maintenance contact teams. In addition to its maintenance function, the wrecker has all sorts of uses in peacekeeping or stability and support operations. It can be used to remove derelict vehicles from city streets (as the 2d Battalion, 87th Infantry, did in the town of Marka on the coast of Somalia), remove roadblocks, and use its winch to assist in the construction (or destruction) of local buildings. The addition of the maintenance platoon would give the battalion more control over its maintenance program than it now has. Each battalion should also have its own prescribed load list.

We should consider providing two HMMWVs, by TOE, to each rifle company. The H-series had three jeeps and two 2 ½-ton trucks, as well as the weapons platoon vehicles. If we added two trucks to the light infantry company, it would still be light, but its normal operations would be easier. Furthermore, we would not need to strip the support platoon by continually doling out trucks for company administrative missions (such as posting or checking guards). By going back to what is essentially the old organization, we would greatly increase the light battalion's ability to conduct sustained operations without the large augmentations that were necessary in Somalia and Haiti.

**Resource the light infantry battalion command and control organization.** To begin with, the command group needs to be given two more HMMWVs, one each for the S-3 and the executive officer (XO). Most units take these vehicles from the heavy mortar platoon. Since the senior leaders have a clear requirement for these vehicles, we may as well make it official.

The communications platoon also needs a second HMMWV with an additional retransmission capability. Because of the distances over which units operate, the battalion relies quite heavily on retransmission. In Somalia, for example, units often maneuvered up to 40 kilometers away from their battalion tactical operations center (TOC) and communicated on retransmission. One battalion task force operated in the Marka humanitarian relief sector, an area bigger than Connecticut. Another battalion task force operated in an area just as big in the vicinity of Kismayu and Jilib to the south. In similar situations, wide-ranging, dispersed operations are the norm rather than the exception.

The battalion TOC itself needs to be

combined with the combat trains command post so the two staffs can conduct sustained operations. Although this may sound odd at first, the light battalion TOC was not designed for sustained operations over a period of months. Only by combining and cross-training personnel can we have enough people for sustained TOC operations while still providing adequate security, equipment maintenance, and sleep. Both the S-2/S-3 vehicle and the S-4 vehicle should be HMMWV four-passenger ambulances reconfigured for command and control.

**Form a weapons platoon in each company from the antiarmor and 60mm mortar sections, and increase the manning of the mortar section.** The H-series TOE had a weapons platoon consisting of a mortar section of three 81mm mortars and an antiarmor section of two TOWs. Although I don't advocate going back to that platoon's equipment, its organization made a lot of sense. The weapons platoon leader and platoon sergeant added considerable experience and command and control to the employment of the mortars and the antiarmor systems as well as another layer of supervision to the sections' training.

The light company mortar section has not been a great success. This has not been the fault of either the weapons or the soldiers but of our unrealistic expectations of the 60mm mortar crew. Forty years ago, a 60mm mortar squad with a lighter M19 mortar consisted of five people. Today the mortar section has only six soldiers to man two M224 mortars. This number needs to be increased by at least one man per mortar as well as a section leader and a radiotelephone operator for a total of 10. Ideally, two more soldiers should be added as a fire direction center (FDC) section (computer and check computer), but 10 men should be the minimum. This would reduce the load on the individual mortar section members and enable the section to keep up with the rest of the company during foot movements.

***Some fairly minor modifications to the TOE will greatly improve the ability of the light units to conduct sustained operations across the spectrum of combat.***

Having the antiarmor section also fall under the weapons platoon would simplify administration and put antiarmor weapon training (Dragon or Javelin) under the direct supervision of a platoon leader. (It is now a function of the section sergeant with the oversight of the company XO.) Additionally, with the advent of the Javelin system, the antiarmor section is more likely to be used as a separate maneuver element. Having a platoon leader to direct and assist the section sergeant in emplacing antiarmor systems would greatly improve the efficiency of overwatch and other antiarmor employment tasks.

In situations with no armor threat, the soldiers in the antiarmor section could be used as additional ammunition bearers for the mortars. This would reduce the immediate requirement for the mortar section to collect mortar ammunition being carried by the rifle platoons. Another possibility for antiarmor section employment in these situations would be to equip it with four 7.62mm machineguns and use it as a company machinegun section—again under the control of the weapons platoon leader or platoon sergeant. This would increase the number of 7.62s in the company to 10 and give the company commander a formidable section to augment his overwatch or support-by-fire elements. The addition of four machineguns to the company TOE—along with their tripods, traversing and elevation mechanisms, and accessory bags—would cost very little but would greatly increase the company's firepower in situations where—as in Somalia—suppressive fire may be imperative.

**Consolidate the TOW systems in a single company organization at brigade.** The organization of the brigade TOW company should be similar to that of the Delta companies in the airborne TOE, with five platoons of four TOW antiarmor systems each, for a total of 20.

This simple change would offer several benefits:

- It would consolidate TOW training under one command within the brigade.
- It would mass all the TOWs in a single tactical element that would allow the brigade commander to allocate his TOWs (with a company command structure) to the battalion (or battalions) on the most likely armor avenue of approach. It would allow the TOWs to be under a single company command when providing overwatch for movement. It would not preclude the occasional cross attachment of TOW platoons to battalions when required by an analysis of METT-T (mission, enemy, terrain, troops, and time); but it would increase the probability of achieving massed TOW fires through improved command and control.

***The light battalion has a ridiculously austere combat service support structure, compounded by unrealistic design assumptions.***

- It would give the brigade commander a fourth organic maneuver element. This element would be especially useful on the lower end of the spectrum of conflict, where the TOW company would be reconfigured with a mix of 50-caliber machineguns and MK 19 40mm grenade machineguns. In Somalia and Haiti, convoy security and mounted security patrolling were among the most common and frequent operations for TOW platoons. We can expect to see more of the same in future operations of this kind. Dedicating the TOW company to these missions would free more line companies and platoons for dismounted patrolling.
- It would allow the division commander to cross-attach antiarmor companies to a single brigade for deployment to a higher-intensity environment. A light brigade with three antiarmor companies (one organic, two attached) would have the same antiarmor firepower as an airborne infantry brigade.

Although we should strive to keep light infantry as light as possible, the lessons of Somalia and Haiti—and the augmentation that was necessary in both places—clearly show that the J-series TOE needs to be modified. The character of light infantry operations would not change. Light infantry would still attack on foot at night or conduct air assault operations. Light infantry would still fight the low-

intensity war with relentless dismounted patrolling.

We can augment the light infantry organization to make it more self-sustaining without greatly increasing the number of C141s required to move it. The ceiling of 10,000 men and 500 C141 sorties is no longer sacrosanct. We must instead look at making the light infantry division more powerful. By making these relatively small changes to improve its sustainability, its communications, and the tactical flexibility of its key weapons, we can greatly increase the light division's usefulness across the entire spectrum of war.

**Lieutenant Colonel Martin N. Stanton** served in the 2d Battalion, 87th Infantry, 10th Mountain Division, in Somalia. He previously served in the 2d Battalion, 2d Infantry, at Fort Lewis, and is now assistant J-5, U.S. Central Command. He is a 1978 ROTC graduate of Florida Technological University.

## FIFTY YEARS AGO IN HISTORY
### May-June 1946

**By the late spring of 1946, the political lines of demarcation that had been taking shape since the end of World War II had become even clearer. In China, Nationalist and Communist factions had clashed openly in spite of intensive international efforts to establish a unified and lasting government. The question of Korean unification also remained a matter of debate, as the Soviet Union insisted upon conditions that would lead to a Korea whose government was dominated by the Communists. In Germany, divergent political interests among the former Allies continued to hamper efforts to reestablish commerce, while in California, United States Marines were called upon to suppress a prison riot.**

**These and other highlights of the postwar years have been provided by Mr. Bud Hannings, in preparation for his upcoming chronology of the Korean War.**

**1 May** The joint United States-USSR Commission is unable to decide which Korean organizations should be included in the formation of a provisional government. Only the Communists support the proposal—surfaced at the Moscow Conference—that a five-year trusteeship governed by four powers be set up. The United States calls upon the United Nations to discuss the issue during a future session.

**2 May** President Harry Truman sends Major Albert Arsenault and a contingent of Marines to Alcatraz prison to reinforce civilian police who are attempting to quell a prisoners' riot. The riots are stopped, at a cost of five dead and fourteen injured.

**26 May** The Allies are unable to arrive at a mutually acceptable plan to permit commerce among the four zones of occupation in Germany. The U.S. Secretary of State finally proposes a plan that will permit the Americans and the British to integrate their zones for purposes of commerce, although the French and the Russians have chosen not to participate.

**28 May** Special Representative George C. Marshall reports that Nationalist Chinese leader Chiang Kai-shek appears to have accepted the Communist occupation of Manchuria, and that he may be willing to permit a team of observers to oversee Peiping, now also in Communist hands. Chiang Kai-shek later meets with his general at Mukden and rejects any such compromise.

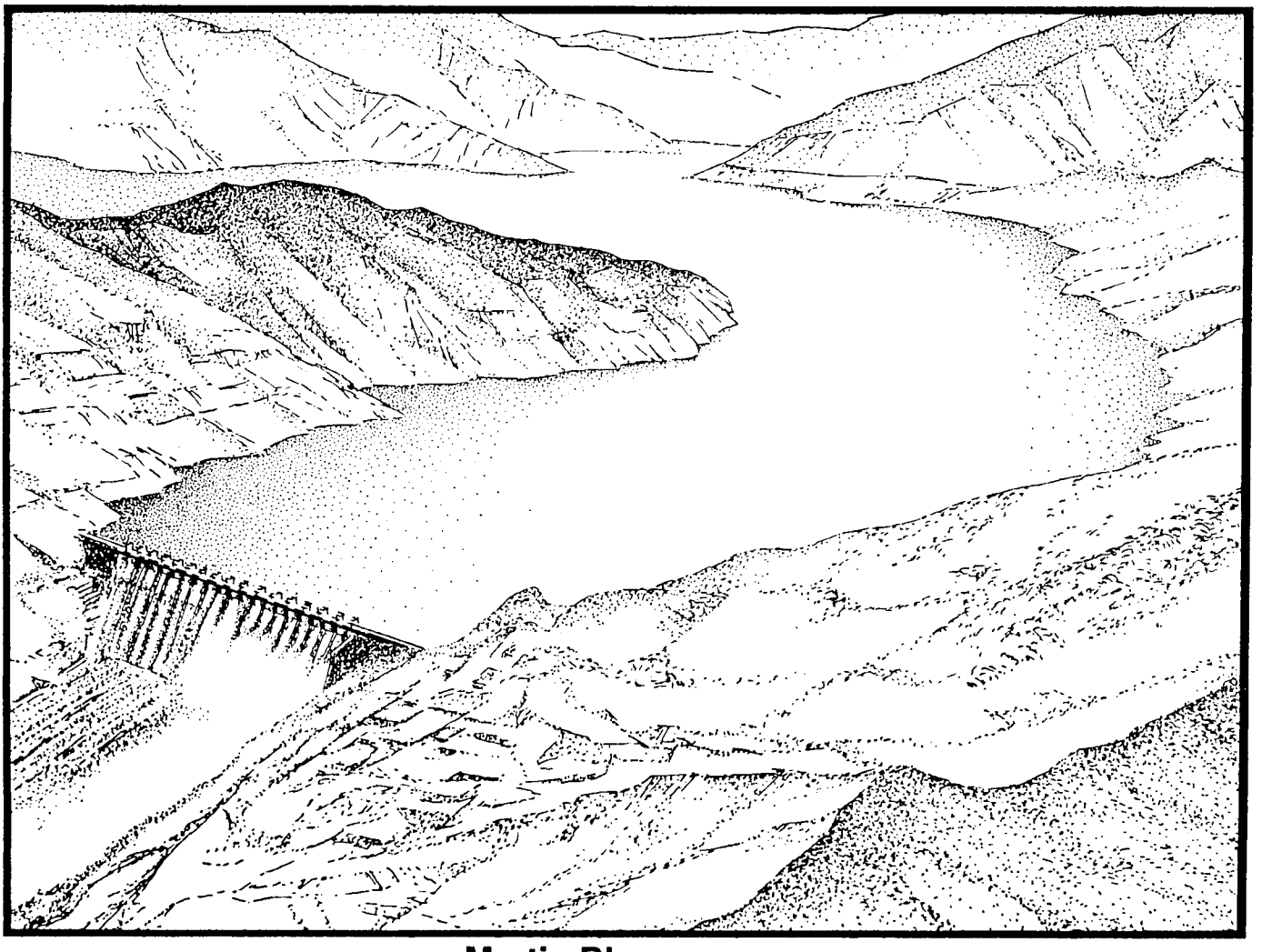
**6 June** The Marine garrison on Guam assumes responsibility for the discipline, care, and feeding of the Japanese who have been imprisoned there as convicted war criminals. Some prisoners who have been sentenced to death are executed by the Marine garrison.

**7 June** Marshall is able to persuade Nationalist and Communist Chinese forces to agree to a temporary cease-fire of 15 days in Manchuria. In spite of many threats and counter-threats, the truce is extended for an additional 8 days.

**15 June** The Korean Department of National Defense is renamed the Department of Internal Security, in response to Russian concerns over the term "national defense." The Bureau of Armed Forces and its subordinate Departments of the Army and Navy are abolished and replaced respectively by the Constabulary and the Coast Guard.

**25 June** Major General Edward M. Almond arrives in Japan. He will eventually serve as Chief of Staff, Far East Command, under General of the Army Douglas MacArthur, and will command the U.S. X Corps during the Korean War.

# Hwachon Dam--Korea, 1951
## The 4th Ranger Company and the 7th Cavalry in Action



**Martin Blumenson**

*EDITOR'S NOTE: This article is an edited and abridged version of "The Rangers at Hwachon Dam," which appeared in the December 1967 issue of* Army *Magazine (copyright 1967 by the Association of the United States Army and reproduced by permission). That article was based on a series of interviews the author conducted in Korea, which are filed with Eighth Army's command report for April 1951.*

*Martin Blumenson served in World War II and in Korea and has made many contributions to the field of military history, including official histories published by the U.S. Army Center of Military History.*

*The reprint was suggested by Mr. Edward L. Daily, Past President of the 7th Cavalry Association, who served in the 7th Cavalry in Korea.*

It was early April in the first year of the Korean War and Spring had yet to come in 1951. Winter winds still whipped down river near Hongchon, tugging at tent ropes, but failing to dispel the mist or the edginess.

When a sudden hint of warm weather melted some of the snow and sent water down the mountains, the current picked up speed around the sand bar, the channels on both sides deepened, and the fords became dangerous. It was then that the anxiety took on a name: Hwachon Dam.

The dam was in a mountainous region of steep-sided and trackless peaks, and among the hills an elongated spot of blue marked the existence of a large reservoir nestled among the partially wooded slopes rising abruptly from the water. The natural curves of the shore line contrasted with the short, straight lip of the dam.

One of the largest dams in Korea, it holds back the Pukhan River and creates a lake 13 miles long and a mile or so wide. The trouble was that the dam and the reservoir lay in enemy territory, and the river flowed down the middle of what was then the U.S. IX Corps area.

All across the Korean peninsula, Eighth Army was grinding forward slowly. In the central part, IX Corps had fought north to Hongchon, then another 20 miles to Chunchon. Now, along a single avenue, the only road of consequence, the troops were going still another 20 miles, across the 38th parallel into North Korea. Ten miles above the parallel, at the shore of the reservoir, they would be at Phase Line Kansas, a place marked by a slash of grease-pencil across the map. There they would pause. Some units needing rest would be replaced, roads would be improved, ammunition and other supplies would be accumulated, and preparations made for another push.

Stopping temporarily at the Kansas line would leave the Hwachon Dam reservoir in the hands of the Chinese Communist forces.

If the Chinese released the water held by the dam, they could send a flood roaring down the Pukhan River, gouge a channel down the middle of the corps, wash away bridges, command posts, supply dumps, and other installations, break the corps in two, and separate—and in some places isolate—the troops in each portion.

The Hwachon Dam gates are massive doors, six by ten yards, each weighing several tons. Raising each gate by hand would take about ten hours. Thus, water released would emerge gradually. Once out, it would spread across low areas. The depth of a flood would vary according to the width of the river channel at any particular point.

The worst that might happen was a rise of ten to 12 feet, which was bad enough. It would rip out bridges, cover the Chunchon plain with at least a foot of water, back up and swell the tributary streams, and hamper—perhaps halt—the operations of the Corps.

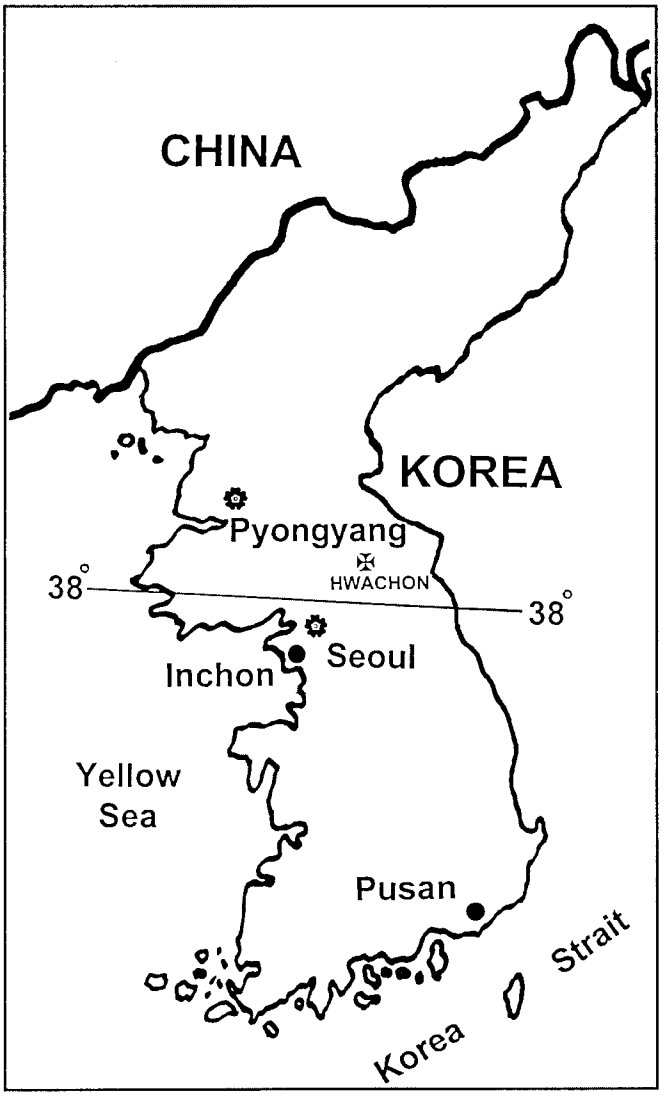
Were the Chinese then planning to use the water in the reservoir as a weapon? Were they raising the water level in order to inundate the Corps by opening the penstocks and gates?

Lieutenant General Matthew B. Ridgway, who then commanded Eighth Army, was aware of the dams in Korea. A month earlier, he had asked particularly about Hwachon Dam. What would happen if he had it destroyed by air bombardment? The answer persuaded him to leave it intact. The reservoir and dam gave water and electric power to the capital city of Seoul. There was no point in ruining a mechanism that would fall into the hands of the United Nations forces after the troops moved beyond the Kansas line.

More immediately alive to the danger of Hwachon Dam was the IX Corps commander, then Major General William M. Hoge. He had a suggestion: If the Chinese released the water in the reservoir, he could send a small group to the dam to close the gates, then blast shut the machinery—the mechanical hoists that raised and lowered the heavy doors. With the gates thus fixed in the closed position, any surplus water would flow over the dam, and there would be no possibility of artificial flooding. Once the Army advanced past Kansas and took permanent possession of the dam, it would be easy enough to repair the damage.

Ridgway liked the idea. He told Hoge to go ahead, but cautioned him to keep casualties to the fewest.

Hoge was sure he could do the job with few losses. His combat command of the 9th Armored Division had captured the Remagen bridge during World War II, and he knew how to



make a lightning thrust. There was no reason why Hwachon Dam should be tough. Especially since one of the Army's great combat outfits—the 1st Cavalry Division—had reached Phase Line Kansas just below the structure. The division, cavalry in name only, was composed of infantrymen.

Telling the division commander to be ready to "immobilize" the dam, but only if the Chinese threatened to release the water in the reservoir, Hoge gave him a company of Rangers. One hundred skilled soldiers trained for rapid and hard-hitting movement, the Rangers would be perfect for a raid to knock out the machinery. By joining these elite troops to the division, Hoge formed a team that was bound to succeed.

While the Rangers were moving by truck to the Kansas line, their commander, Captain Dorsey B. Anderson, drove to division headquarters. He had studied the map and had a notion of how best to carry out the task. A quick hit-and-run affair was just the sort of thing his men were good at.

He went to see the division G-3, a young lieutenant colonel named John Carlson, who planned the combat operations.

If it became necessary to get up to the dam, Anderson suggested, his Rangers could cross the reservoir in boats during the night. They could slip to the dam under cover of darkness and knock out the mechanical hoists before the Chinese knew they were there.

"Where are we going to get the boats?" Carlson asked. It was a rhetorical question. Getting the boats was none of Anderson's concern. "That's an awful lot of water to cross. If you blast the dam during the night, you'll have to come back during the day. You'd be sitting in the middle of the lake in full view of the Chinese!"

Anderson agreed, but he still thought that crossing the water was the best way to get to the dam. Carlson said, "No. We have to figure out something easier."

While he searched for a solution to the problem, Anderson visited a nearby dam that the experts believed was similar to Hwachon. In case he had to destroy the machinery, he wanted to know in detail how to do it. Looking over the concrete structure, he became familiar with the mechanism and saw how to blow the cogs on the power wheels that controlled the floodgates. At Hwachon Dam, in each of the 18 winch hoists where exposed gears meshed, his men would have to apply thermite grenades directly to the teeth, then tamp them properly to ensure a good burning effect. The Rangers would have to hold the dam for several hours to close the gates and make sure the demolition charges did the job.

***Were the Chinese then planning to use the water in the reservoir as a weapon? Were they raising the water level in order to inundate the Corps by opening the penstocks and gates?***

As the Rangers took a brief refresher course in the use of explosives, Anderson flew over Hwachon Dam in a light plane. The ground appeared even more rugged than he had anticipated. But he had one consolation: He could discern no enemy positions around the structure. Even with no Chinese opposition, the Rangers would find it difficult enough to get over the terrain. The hills would cause problems for men walking across the slopes and around the jagged, contoured heights. If his men had to cross the reservoir in boats, they would have to traverse about a mile of ground between their landing site and the dam.

But Carlson favored an overland attack—without frills, nothing fancy. In getting to the Kansas line, the division had had no easy time, but the Chinese, when attacked aggressively, had pulled back, even from well-organized defenses. Why should an advance beyond Kansas be different? The dam was probably lightly held, and it could easily be overrun and its sluice mechanisms quickly destroyed. One of the division's three regiments, the 7th Cavalry, was directly below the dam, and if General Hoge gave the green light, it could go around the edge of the reservoir, grab the dam, and let the Rangers walk in and blow the power wheels.

A minor problem arose: The division was about to turn over its part of the front to a relieving Marine division. Once the transfer was complete, the troops would leave the Kansas line and travel far to the rear for a well-earned rest.

The relief would take place on two successive nights, starting on the evening of 9 April. Just in case Hoge ordered the raid to Hwachon Dam, Carlson scheduled the division's departure so that the 7th Cavalry would be the last to leave.

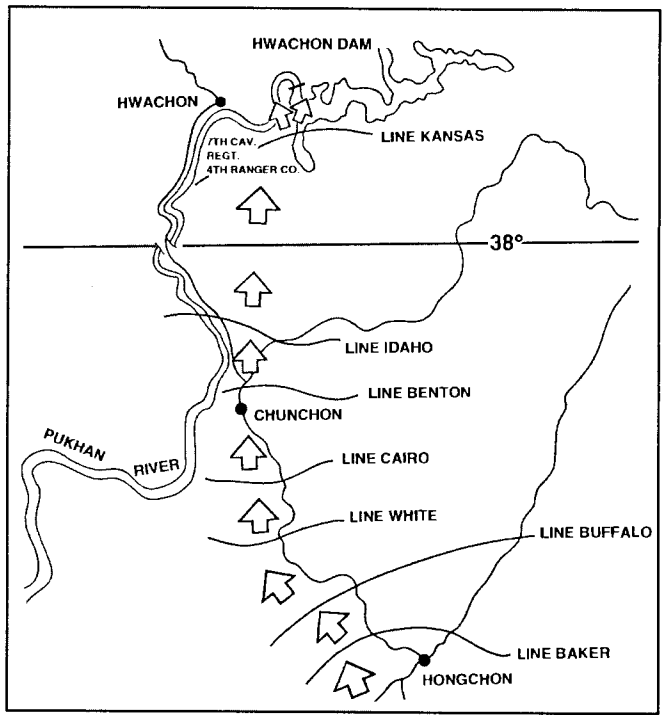
Since a rise in the Pukhan River would trigger Hoge's decision to go to the dam, the water level was watched closely at three measuring stations.

In the dark and early morning hours of 9 April, as interrogations of prisoners of war would later reveal, about 20 Chinese soldiers and five Korean civilian employees of the power plant began to open the gates of Hwachon Dam. Using auxiliary engines to lift some, they opened others manually. By daylight they had raised two gates completely, lifted two of them three-fourths of the way, and opened six slightly. Had they been able to raise additional gates, they probably would have done so.

Before the American pilots who made daily inspections could fly over the dam and discover the open gates, a surge of water struck the first measuring point along the Pukhan River. At 0700 the river began to rise, and the level rose by four feet in 15 minutes. Downstream at the second station, the river began to rise an hour later, and by 1000 the stream was 86 inches, more than seven feet, above normal. Farther downstream, at the third station, the Pukhan jumped 17 inches in ten minutes after 0930, 27 inches during the next 20 minutes, and climbed steadily to just over seven feet by 1230.

By opening ten of the 18 gates, the Chinese had released enough water to wash away one American treadway bridge supported by pontoons and to require the Corps to disconnect four others to avoid losing them. All were major installations, and they would have to be replaced, raised, and lengthened—a tedious, time-consuming task.

As soon as Hoge learned that the Pukhan River was rising, he told the 1st Cavalry Division commander to get to the dam,




shut off the flow of water, and put the machinery out of order. There was plenty of time to do so before the division left for the Kansas Line.

Major General Charles D. Palmer, who had taken command of the 1st Cavalry Division in early February, was preparing to turn over his front to the Marine division. So far as he was concerned, the relief took precedence over Hwachon Dam. Passing on Hoge's instructions, Palmer's G-3 (Carlson) instructed the 7th Cavalry to go beyond the Kansas Line, "if possible."

The 7th Cavalry transmitted the mission, along with its ambiguity, to one of its three battalions. "Be prepared to be relieved tomorrow" (10 April), read one message. Then another: "Go up there [to the dam] if possible, stay there, do not get cut up, but do not withdraw unless necessary. If you can close locks, do so. If not sure how to operate and likely to damage, leave them alone. Destroy machinery if necessary to pull out."

Somewhat puzzled but expecting light resistance, the battalion commander, Lieutenant Colonel John W. Callaway, sent one of his three rifle companies to attack at noon on 9 April. The Rangers were just behind and ready to go forward to close the spillway gates and destroy the machinery.

Callaway's troops barely moved beyond the Kansas line before striking well-concealed but active Chinese defenses. Captain Harold Gray, Jr., commander of Company F, was killed almost immediately, and the advance came to a halt.

When Callaway received a report that the men were unable to move because they were suffering heavy casualties, he went forward to get the details first-hand. The ground was so rough that it took him all afternoon to reach the riflemen. It was dark by the time he arrived. He discovered that the report of high losses was exaggerated. Two men had been lost: the dead commanding officer and a severely wounded soldier.

Judging the terrain too broken for proper control during the night, Callaway held off further attack. He made sure his troops would be ready to resume the effort in the morning, and returned to his command post.

At around 0100 on the following morning—10 April—Callaway learned that most of the division was leaving the Kansas Line; his own attack was still on, so he ordered his troops to get to the dam after daybreak.

The decision to continue the attack had been reached earlier that evening by Hoge, who told Palmer to go on up and get the dam.

General Palmer and Carlson discussed the possibility of sending the Rangers across the reservoir in boats. Since Callaway's thrust had uncovered strong resistance, Carlson still believed it was too dangerous to cross a mile of open water. And it was too complex. Much simpler was Callaway's overland effort, particularly since the division was to complete the relief as scheduled—that is, during the night of the 10th. The loss of only two men in Callaway's assault company indicated that the attack had probably bogged down because of the death of the commander rather than the strength of the opposition. Continuing to press forward would surely drive the enemy from the approaches to the dam, scarcely two miles ahead.

Hoge's understanding was quite different. He expected the Rangers to cross the reservoir that night, and this he told to Ridgway.

When Hoge visited Palmer on the morning of the 10th, he learned that Callaway's second attack, like the first, had gotten nowhere. Running into murderous fire, the troops made no progress beyond the Kansas line. In the process, six troopers were killed, 27 wounded. While visiting the observation post with Callaway, First Lieutenant Richard Gerrish, Jr., commander of Company H, was killed by fragments of an enemy mortar round. Callaway himself narrowly escaped injury or death from the same explosion. Now he faced the loss of *two* company commanders.

Where were the Rangers? Hoge asked.

Palmer explained: An operation across the lake hardly seemed worthwhile. Two of the regiments, along with the engineers and other elements, had already gone to the reserve area. Only the 7th Cavalry remained in the line, and it was due to leave that night. Getting involved in the complications of an amphibious assault might delay the relief.

Hoge's face turned a deep red. "I want you to stop fooling around," he told Palmer. "What I want is a bona fide attempt to take the dam."

As Hoge was applying the whip, the Chinese were closing six gates of Hwachon Dam. Why they did so was a mystery, but the result became noticeable around noon. The water level of the Pukhan River, which had remained about six feet above normal, started to subside. The danger of flooding began to diminish.

What now? Was there any point in continuing the attack?

Hoge's answer came early that afternoon: He had changed his mind. The Marines were to take over from the 7th Cavalry during the night, thus completing the division's relief.

Colonel William A. Harris, commander of the 7th Cavalry Regiment, was delighted. He had deep affection for the troop-

ers entrusted to his care. They had fought over extremely difficult terrain for several months, and he knew how worn out they were.

Telling his three battalion commanders to terminate their operations at 1700, Harris authorized them to start walking their troops to the rear that evening. They would meet the trucks that had brought the rest of the division to the reserve area and that were coming back to pick up the 7th Cavalry.

Exactly at 1700, Harris received word that Hoge had changed his mind again: There would be no relief until the Hwachon gates were knocked out.

The decision may have seemed like personal pique on the part of Hoge. Not only was the level of the river falling; the reservoir had lost so much water that a volume of no further consequence to the Corps bridges was flowing through the four gates that were still open. No one knew exactly how much water was left in the reservoir, for the weather had turned rainy and foggy, and aerial observation was impossible. But an estimate of the volume of water that had passed over the dam indicated that the level in the reservoir was low—so low that what was being held back could no longer be destructive.

Why, then, was Hoge insisting on shutting the gates? Because the Chinese could play a vicious game. They could build up the water in the reservoir, then release another flood. If they got some portable electric generators to work the massive doors, they could harass the Corps quite easily. Furthermore, the rainy season lay ahead. If the Chinese released the water during a heavy rainfall, they might wash out even high-level bridges (a rise in the Pukhan River as high as 18 feet from a heavy downpour was a matter of record). Thus, despite the absence of an immediate danger, a long-range menace persisted.

This bothered Hoge, but what bothered him more, he later said, was his feeling that the halfhearted thrusts toward the dam had stirred up the enemy. The division had frittered away time and resources, and had dissipated hope of gaining surprise.

If Hoge allowed the relief to be completed as scheduled, if he assigned the Hwachon Dam mission to the Marines—who would need at least a couple of days to settle in—he would lose more time. He would enable the Chinese to prolong their game with the water and further improve their already strong defenses. In the interest of speed, the 1st Cavalry Division, specifically the 7th Cavalry, had to take care of the gates.

***Coming ashore about a mile from the dam, the Rangers would make a quick run to seize the installation, close the gates, smash the hoisting machinery, and be gone as quickly as they had come.***

Palmer and Harris were sick with dismay. Scheduling a unit's relief, then giving it a combat assignment, takes the heart out of its people. No one about to be relieved wants to move into attack. Everyone would be looking over his shoulder toward the promised relief and rest. But there would be neither relief nor rest until the machinery was knocked out.

Since the overland route to the dam seemed fruitless, Palmer and Harris decided to send the Rangers across the water. Coming ashore about a mile from the dam, the Rangers would make a quick run to seize the installation, close the gates, smash the hoisting machinery, and be gone as quickly as they had come. To divert the enemy's attention, Harris would launch two diversionary efforts, each by a battalion. His third battalion would be ready to cross the reservoir if the Rangers needed help.

The plan was fine, but the decision to carry it out could not have come at a worse moment. Not only was most of the division far to the rear in reserve; almost all its trucks were tied up in this movement. Everyone would have to scramble at the last minute to get the equipment and supplies required for the combat operation.

The news that the Rangers would cross the reservoir that night came as a surprise to Captain Anderson. It was rather short notice for a complex operation of this sort, he felt, and somewhat late; by the time all the troops and equipment were assembled, only a few hours of darkness would remain. But he made no protest. His men were ready! The relief had no effect on them. They would be pulled out of the front as soon as they completed their mission.

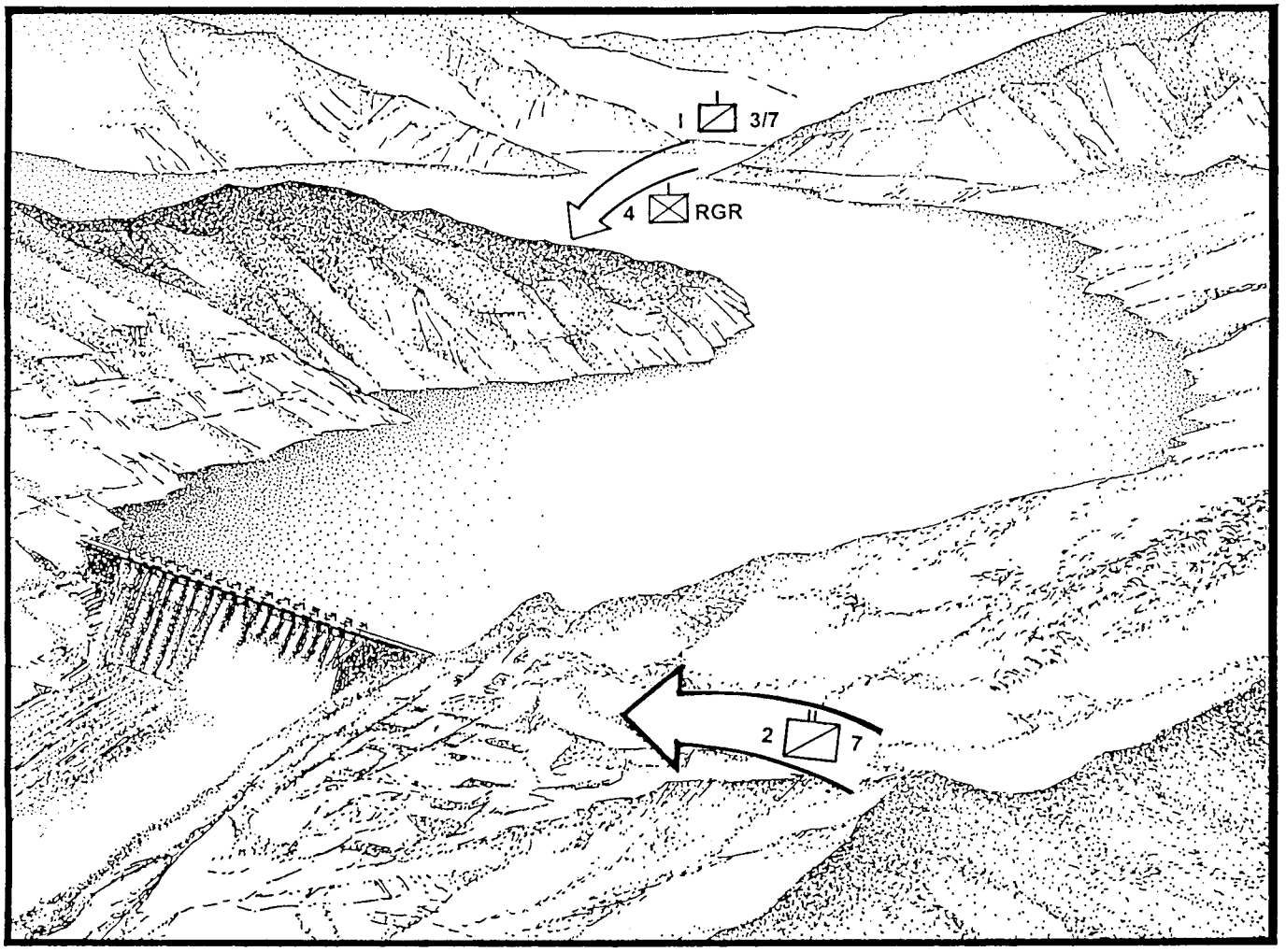
After sending word for the men to be marched to the embarkation point on the shore of the lake, Anderson met his executive officer and his three platoon leaders there at 0230 on 11 April.

Anderson told his subordinate officers that no one knew how many Chinese defended the dam. The resistance stirred up by Callaway—in particular the number of Chinese mortars firing—had led to conjecture that the enemy troops in the area outnumbered the Rangers. For that reason, they were to paddle across the water, using no motors unless they were discovered. Their best hope of reaching the dam lay in an approach using stealth and surprise. To add firepower, about 20 machinegunners and mortarmen of the 7th Cavalry would accompany them. From the near shore of the reservoir would come supporting fires. Artillery would also be available.

The artillery actually in support of the Rangers consisted of 32 pieces, all 155mm and 8-inch howitzers. These large guns would be firing at their longest limits of effective range—the 155s from about nine miles away, and the 8-inch howitzers from around ten miles. Firing at extreme ranges was not good, for the longer the distance, the broader the dispersal of shells at the target. It also wore out the tubes more quickly. But the pieces were unable to come closer because of the paucity of roads around the dam.

His instructions delivered, Anderson supervised the issue of additional ammunition to the men. They moved to the shore of the reservoir for embarkation. It was cold, and a damp fog blew in off the water. Tension began to build among the troops.

Near Chunchon, at division headquarters, Major Dayton F. Caple, the G-4, was frantically trying to collect the equipment and supplies needed for the operation and get them forward. His first thought was to find at least six DUKWs (amphibian trucks) to carry the Rangers across the reservoir. Less than a




week earlier, the division had obtained a dozen for crossing the swollen Pukhan River above Chunchon, but facing no other water obstacles on the way to the Kansas line, Caple had let them go that morning to the Marines and the division on the immediate right in the adjacent corps. Although he acted at once to call them back, the absence of roads in the forward area held up their movement.

Caple then tried to get boats. An assault boat—made of plywood, weighing 410 pounds, powered by an outboard motor or paddles, and usually handled by three trained soldiers—was standard engineer equipment normally used in constructing a pontoon bridge. Early that month, the division engineer had procured 40 assault boats and a dozen outboard motors. But when the Hwachon operation was ordered, the boats and motors, along with the trained operators, were moving with the engineers into the reserve area. A radio message got 20 boats and some motors started back. Ten, somehow, wound up on the wrong side of the Pukhan River. They finally reached the embarkation site shortly before noon on 11 April—too late for the Rangers to use. Fortunately, the other ten had arrived in time, but barely so.

Because of the lack of clear roads, all equipment and supplies had to be transferred to jeeps, and even jeeps in four-wheel drive had trouble gaining traction. Finally, four miles short of the reservoir, the trail ended. Equipment and supplies had to be transferred again, to the backs of Korean laborers. Finally, ten boats, ten motors, 180 paddles, and 20 air mattresses were brought to the embarkation site.

The air mattresses were an inspiration. They substituted for the requested life preservers, which did not arrive until well after the Rangers had departed.

Ten boats, some with outboard motors, were assembled at the embarkation point before dawn on 11 April, but one had a hole in the bottom and was useless. Since each boat could carry ten men, some Rangers would have to wait until boats returned from the far side of the reservoir for a second trip.

In each boat was an infantryman who would be responsible for bringing the craft back after the Rangers clambered out on the far shore. Lacking trained operators, the 7th Cavalry had sent out a call for volunteers, asking infantrymen who had any kind of experience with boats and motors to come forward. A lieutenant who volunteered found himself in charge of 20 soldiers who were willing to take the Rangers across the reservoir. Their valor was as great as their inexperience.

Lieutenant Michael D. Healy's platoon got into three boats to make the initial excursion. Healy had a "killer" element of ten men—armed with knives, axes, grenades, pistols, and carbines—who were to eliminate, quickly and quietly, any enemy

troops at the landing site, a demolition group responsible for placing explosives at the dam, and a squad carrying automatic rifles and machineguns.

Pushing off at 0345 and guided by compasses, the men paddled across the smooth lake. Forty-five minutes later, the first boat scraped the bottom of a rocky bank. Healy jumped out and pulled the craft up on the shore. After giving his medical aid man a flashlight with a blackout cover to guide the other boats in, Healy, together with five men, verified the absence of Chinese troops in the immediate landing area.

When the rest of the platoon was ashore, Healy left two men at the inlet as guides and took the others up the sharp incline of a finger ridge that led to the base of a mountain peak.

On the other side of the reservoir, Lieutenant Joseph W. Waterbury's platoon, together with Anderson, the forward observers, and the machinegunners, stepped into the remaining six boats when Healy's men were about 50 yards out in the water and disappearing from sight. They reached the landing cove as the sky was showing the first signs of light.

Anderson led this contingent up a parallel finger ridge and met Healy at the base of the height. He quickly organized the 70-odd men for the advance up the steep slope of the mountain. With Healy's platoon in the lead, Anderson's command group immediately behind, and Waterbury's platoon following, the Rangers started up the hill.

Out in front of the rest, Healy and five soldiers were about 100 yards from the top when they heard shouting. Looking up, through the heavy morning mist, they saw the indistinct figures of about half a dozen men on the crestline waving in welcome. It was impossible to tell whether they were enemy troops or members of the 7th Cavalry who had managed to get to the dam overland. Waving back, Healy's men continued to climb the hill.

Behind them, Sergeant George E. Schroeder, who was walking with the forward observers, heard the shouting, glanced up, and thought that some Rangers had already reached the hilltop. Why were they so noisy? Was the dam already captured?

***Two men had dragged their machinegun up the hill, and they opened covering fire while Healy and his lead scouts threw grenades and assaulted the Chinese machinegun nest.***

The men in the lead covered another 50 yards up the slope when the increasing light of the morning revealed that the troops on the top of the hill were wearing the Chinese quilted uniform. But as long as they kept waving and shouting in a friendly manner, the Rangers continued. Maybe the Chinese wanted to surrender.

A burst of machinegun fire shattered the illusion. All hope of gaining surprise and reaching the dam undetected vanished as everyone on the slope fell flat. But not before two men were hit. A radio operator accompanying a forward observer was killed instantly, and another man got several bullets in the leg.

On the slope of the mountain, Rangers in prone positions began returning the enemy fire. Forward observers called in mortar and artillery rounds, which dropped up ahead in slow cadence.

Healy, accompanied by his group of five, crept toward the top of the hill, trying to locate the enemy weapons. Behind them several men fired a recoilless rifle, whose roar was as loud as a clap of thunder and whose backflash was as potent as a jet engine's. After they got off several rounds, one enemy machinegun fell silent. Shifting to the left, the men tried in vain to search out the other machinegun position. Halfway up the hill, a sergeant had his troops assemble two machineguns and lay down grazing fire to cover Healy's advance. Before the guns could expend a mere three boxes of ammunition—750 rounds—some Rangers, to the sergeant's astonishment, were at the top of the hill.

At the ridge line, Healy raised his head several times to draw fire so the other enemy machinegun could be spotted. When Healy saw where the position was, he and his group moved off without command, creeping to within grenade distance.

Two men had dragged their machinegun up the hill, and they opened covering fire while Healy and his lead scouts threw grenades and assaulted the Chinese machinegun nest. As they knocked out the gun and killed the crew, other Rangers rose to their feet and charged up the hill, shooting while they screamed to bolster their courage. A dozen Chinese troops fled across a draw and disappeared.

It was now 0615. Two and a half hours had passed. The Rangers had taken their initial objective and were about half a mile from the dam. They were winded from the ascent, but they began at once to dig foxholes. Ahead, obscured by the morning fog and a jumbled mass of peaks, was the dam. Behind them and off to the right and left was the lake, separating them from their friends.

Schroeder spread a bright red silk panel on the hillside. If pilots came over to bomb and strafe the enemy after the morning mist lifted, they would know where the Rangers were.

About that time, it started to rain. The rainfall would be light and intermittent, but the sky would remain covered throughout the day. There would be no air support for the Rangers.

Two boats, each paddled by an individual crewman, had returned to the embarkation point after carrying Rangers across. Since the noise of the weapons on the far shore indicated the Rangers had been discovered, there was no reason to remain quiet. The men tried to start the motors to get the last platoon (Lieutenant James L. Johnson's) more quickly across the water. Neither motor would start.

Two of Johnson's three squads paddled across the reservoir between 0600 and 0700. They were guided into the landing site by medical technician Sergeant William V. Goolsby, who was waiting to send a wounded man back.

Johnson and his troops unloaded the boats, ascended one of the finger ridges, climbed the peak, and made contact with Anderson. It was close to 0800.

At the cove, Goolsby placed the wounded man into one of the craft and helped the crewman shove off for the return trip. Then walking up the hill, he found everyone digging foxholes. Some mortar rounds were coming in, mostly white phosphorus, and two men had been burned, though not seriously. He treated them, then started to dig a hole for himself.

At the embarkation point, where two more boats had returned, the final squad of Johnson's platoon, plus the company executive officer (Lieutenant John S. Warren) and six Korean carriers with a load of ammunition, climbed aboard. The motors started and quickly powered the men across the reservoir. As the craft headed for the landing cove, the morning mist lifted. The Rangers were hardly surprised when enemy fire came from their left front. As machinegun bullets stitched the water around them, they turned to the right to escape. When more shots came in, they tried a third landing site. Another burst of fire convinced them they would be unable to get ashore without losing men and probably, even more important, the ammunition. Both boats returned.

On the far shore, the enemy fire that had dissuaded the two boats from landing prompted Anderson to a decision. If he moved the Rangers inland and toward the dam, he explained afterward, he thought he might be cut off from the beach by Chinese troops coming in on his flanks. If, instead, he extended his line to the left and seized another hill overlooking the shore, he would not only secure his exit but also facilitate subsequent landings that would bring him reinforcements and ammunition.

Anderson sent Johnson and his men through Healy's platoon and along a finger ridge toward the hill knob he wanted. Johnson had scarcely started when the zing of machinegun bullets and the whine of mortars sounded. Projectiles peppered the ridge and stopped his advance. His men took cover, falling to the ground and burrowing their heads beside a rock outcropping and trying to hide in the short and scraggly brush.

Fifty or 60 Chinese troops charged in from the right front. They reached grenade distance before being beaten back.

This attack, Anderson said later, was merely a ruse to draw the Rangers out of position. For immediately afterward, a mass of what seemed like several hundred screaming, bugle-blowing Chinese soldiers poured down from the right and threatened to overwhelm the Americans. Making no effort to use covering fires, the Chinese bore directly down against the Rangers.

No one could remember—or if he could remember, tell—precisely what happened during the next 30 minutes. No one was sure any longer exactly what he had done, how he had reacted, what he had seen, or even how long it lasted. Schroeder thought he threw grenades for half an hour, then remembered that he had had only two. Healy talked about the bugles.

"Let me put it this way," Anderson said, trying to explain what took place. "The approaching Chinese were so densely packed and so close that my pistol was more effective than a machinegun."

Waterbury had his radio damaged by a rifle bullet. He sent a runner to tell Anderson he had to pull back. As the soldier departed, crawling through the sparse brush toward the company headquarters, a grenade sailed through the air and exploded, knocking Waterbury down, half conscious, and sending him rolling down the hill. He had no idea how far he tumbled or how long he lay where he came to a stop.

The Rangers finally drove the Chinese off. A lieutenant named Forney, who brought in artillery fire, and the 4.2-inch mortar observer worked beautifully together, the latter compensating for the slow rate of artillery shelling. The man calling in the fires of the 81mm mortars was too nervous to get his

## ONE SOLDIER--ONE RECOILLESS RIFLE

**Although the attempt to seize the Hwachon Dam did not succeed, it was nevertheless a commendable effort, both in light of its purpose and in terms of the initiative and courage of the soldiers who took part in the operation.**

**The three main factors leading to the decision to withdraw the 4th Ranger Company and Company I, 3d Battalion, 7th Cavalry, from the area east of the dam were the loss of the element of surprise, the impossibility of conducting a supporting attack in sufficient strength, and the unexpectedly large number of Chinese occupying the high ground and the dam itself. Given the number of troops involved on both sides, U.S. casualties were surprisingly light, and this was due in large part to the actions of one man, Private First Class Jose "Joe" Alva, a 57mm recoilless rifle gunner from Company I.**

**When Company I crossed the lake under Chinese small-arms and mortar fire to reinforce the Ranger company, Private Alva and his recoilless rifle were among the first ashore. Seeing that friendly units were unable to advance because of the intense fire of Chinese machineguns, he moved forward and destroyed four machinegun emplacements. When an advance squad was pinned down by automatic weapons fire, he unhesitatingly moved forward alone over 100 yards of exposed terrain, carrying the recoilless rifle and dragging his ammunition. Private Alva assaulted and eliminated three more Chinese emplacements, and when he ran out of 57mm ammunition, he picked up an M1 Garand rifle and continued the attack.**

**Joe Alva's heroism inspired others in his unit to fight on, and he finally occupied a fighting position in the Rangers' perimeter until ordered to withdraw. If the Chinese machinegun positions had not been destroyed, the two companies would have been forced to withdraw across the reservoir under heavy fire, and would have almost certainly sustained heavy losses. Private Alva was awarded the Bronze Star Medal with "V" Device in recognition of his heroism and devotion to duty.**

**Today, as on 11 April 1951, victory on the battlefield still lies in the hands of those brave, selfless soldiers whose coolness under fire inspires their comrades and inflicts enough casualties on the enemy to destroy his will to fight. That's the way it has been in all of our nation's wars, and that's the way it must continue to be as we enter the next century.**

rounds on target; his radio operator had been the first to be killed shortly after the landing.

When the Chinese attack died down and the survivors had pulled back, Anderson checked his troops. They still held about 400 yards along the ridge line. But they were just about out of ammunition. They had half a box of machinegun bullets, only four rounds for the recoilless rifle, two clips of pistols bullets, about two clips per rifle, and 30 rounds per carbine. They were out of automatic rifle clips and grenades.

Since the strength of the Chinese ruled out an advance to the dam and since the lack of ammunition made his positions untenable, Anderson radioed the 7th Cavalry for permission to return across the reservoir.

He was told to stay; he would soon be joined by a rifle company, which was on its way across the water. Unless the infantrymen arrived quickly, the Rangers would be unable to withstand another Chinese attack. Anderson instructed his men to fix bayonets. Those who had no bayonets attached knives to their weapons.

The time was about 1200 on 11 April. It seemed much later.

While the Rangers were crossing the reservoir that morning, the 7th Cavalry launched its two diversionary attacks. One battalion sent an assault company to cross the Pukhan River. Under rain mixed with sleet, the men descended a steep slope to the water, sliding and slipping on the thin layer of mud that barely covered the rock core of the hill. They planned to cross on several footbridges thrown up days earlier, for the rugged ground prevented them from carrying boats to the river's edge and the swift current prohibited paddling across on air mattresses. At the bank of the river they discovered that the water level had risen and washed out the bridges. All they could do—even though they saw no enemy troops—was to fire across the stream, call in artillery shells, and hope they had mounted a threat that kept some Chinese away from the dam.

The other battalion (Callaway's) attacked for the third day and ran into the same enemy pillboxes. An officer who had been with the Marines at Iwo Jima later said that the Chinese put out more mortar fire than the Japanese ever had. A sergeant who had fought in Europe said that the Siegfried Line defenses were the only comparable positions he had ever seen. Lacking air support because the bad weather kept the planes on the ground, with attempted precision artillery fire making no impression on the fortifications (the pieces were too distant for pinpoint accuracy) and deprived of the help of tanks because there were no roads, the battalion tried to divert attention from the Rangers and lost 28 men, of whom three were killed.

***Since the weather had killed any air support, and since the artillery assistance was not the best, he began to doubt that the losses being suffered were worth the goal.***

As early as midmorning, Colonel Harris, the regimental commander, concluded that the two attacking battalions would have little success. Because the Rangers had been discovered, he judged they would need reinforcement and decided to send his third battalion across the water. One company of that battalion had already marched to the embarkation site, and shortly before noon Harris ordered the 200 men across.

By this time, the ten other assault boats sent by the division engineers, as well as the life preservers, had reached the shore of the reservoir.

Climbing into the craft, the infantrymen tried to get the outboard motors started. None worked. It was early afternoon before the first boats departed. Lieutenant Warren, the Ranger company executive officer, who had been unable to get across earlier, accompanied the infantry to show the way.

Half the distance across the water, the men ran into a volley of mortar shells. One boat was hit and damaged slightly; one soldier was wounded, not seriously. Continuing to paddle, the men reached the far shore. They beached their craft around 1330, immediately positioned guards around the landing site, and awaited the arrival of the rest of the company.

When Warren stepped out of his boat, he met Waterbury, who was still dazed from his tumble down the hill. Waterbury felt vaguely guilty because he was not badly hurt—a cut on his hand was bleeding slowly, and his legs wobbled. He wanted to take some boats to a beach directly below the Rangers to get ammunition up the hill more quickly and also to help evacuate the wounded.

Warren assured him that he would look after the ammunition and casualties, then helped him into a boat that was about to return across the reservoir.

As Waterbury was being transported back, the last squad of Johnson's platoon, the Korean carriers, and a load of ammunition appeared at the inlet. Soon afterward the rest of the infantry company arrived.

When Anderson saw the final contingent of his own force and the company of infantry approaching, he felt pretty good. With 300 Americans on the hill and plenty of ammunition, it would be difficult, if not impossible, for the Chinese to dislodge them. And now they could get started toward the dam. It was about 1600.

An hour earlier, General Palmer, 1st Cavalry Division commander, had telephoned the 7th Cavalry to learn how things were going.

Colonel Harris, the regimental commander, was cautiously hopeful. He thought there was little chance of taking and holding the dam that day, but he believed it might be possible to get three companies of infantry—in fact, the whole battalion—across the reservoir. That would enable the Rangers to get to the dam during the night and blast the machinery. Around daybreak, all the troops could get out. How did that sound?

That sounded all right to Palmer, and he gave his OK. Then he telephoned Hoge to pass on the information.

To Hoge, the corps commander, the dam appeared to be defended in surprising strength. What were the Chinese up to? Intelligence had failed to estimate anywhere near the correct number of Chinese around the dam. In addition to the unexpected opposition, Hoge revised his understanding of the ter-

rain. What he had originally conceived of as separate compartments were in reality interconnected areas. Seizing the dam required the capture of a sizable parcel of ground around it. Taking that much ground demanded at least an entire division. Since two-thirds of the 1st Cavalry Division had already left the Kansas line, he would have to use the Marines. But if he sent the Marines forward in a full-scale attack, he would have to commit more troops to cover their flank. He would be getting involved in a major attack beyond the Kansas line, which was unauthorized. And Ridgway had said he wanted few casualties.

Hoge had to admit that the operation was getting out of hand. Since the flow of the Pukhan River had dropped off, even though the level remained relatively high, he decided there was no special need now for haste in taking the dam, no sense in being stubborn.

He told Palmer he would recommend calling off the operation. Unless, of course, the Chinese resistance suddenly disintegrated. If the Chinese abandoned the dam, the Rangers might as well knock it out.

Palmer called back Harris and passed along Hoge's thinking.

Well, what did Palmer want him to do?

Harris could call off the operation any time he wished.

He needed little urging. But he could not blindly end the action. He had made an investment. Perhaps it was worth hanging on a little longer.

He reviewed the situation. To take the dam, he estimated, he would need to send two more rifle companies across the reservoir. Since there was no fast way of getting them across the water, together with ammunition and other supplies, the positions established half a mile from the dam might be swept away during the night. Obviously, the Chinese would attack in strength after darkness fell. Since the weather had killed any air support, and since the artillery assistance was not the best, he began to doubt that the losses being suffered were worth the goal. To prolong the operation was simply asking too much of the troops.

Come on back, he radioed.

He wanted the Rangers to pull out first, covered by the infantrymen.

Anderson had three reactions in quick succession. First he was shocked; why call it off when there was a good chance now of getting to the dam? Next he was angry; what was the point in getting men killed for nothing? Then he relaxed; he had not the slightest desire to question the order.

When he put out the word to his men, he could almost hear the collective sigh of relief. No one wanted to spend the night on the wrong side of the reservoir.

Since any withdrawal from a forward position is a ticklish operation—troops are vulnerable when they move—Anderson asked for smoke, the artificial haze put out by smoke pots, generators, or artillery shells. "Negative," came the voice over the radio; no smoke was available.

Looking for smoke generators in the immediate area, the division G-4 found absolutely none. Instead of getting in touch with the corps chemical officer, who controlled smoke munitions, someone in the Corps G-4 section called the corps ordnance officer. Someone in that staff office phoned the army ordnance office in Pusan. From there a call went to Tokyo asking that smoke pots be airlifted from Japan.

There was no smoke to cover Anderson's withdrawal. Only the corps chemical officer seemed to know that there were plenty of smoke pots at a chemical dump near Hongchon, but he had no idea that anybody needed them.

As the Chinese remained strangely quiet, Anderson brought his men down the hill and safely to the cove. He sent a boat to an inlet closer to the hill, where Goolsby was waiting with the casualties.

Anderson made sure all his men were embarked before returning. He reached the original embarkation point at 2030. Somewhat idly, for he was too tired to be indignant and knew nothing about the condition of the trail across which they had come, he wondered why the DUKWs had arrived so late. The Rangers had to walk several miles to trucks that were waiting to take them back to Hongchon.

***Up on the hill across the reservoir, soon after the Rangers pulled out, about 60 Chinese attacked the infantry company. The riflemen beat them back.***

For the Rangers the Hwachon adventure had all but ended. Ninety-eight men and five officers, plus six Koreans, had crossed the reservoir. Two men were dead, and the man with the stomach wound would die the following day. Eleven others had been wounded, and one was injured, having broken his leg in a fall. The few infantrymen who had accompanied them had lost one man killed and one wounded.

Up on the hill across the reservoir, soon after the Rangers pulled out, about 60 Chinese attacked the infantry company. The riflemen beat them back. They estimated they killed about 45, but the figure was no doubt exaggerated.

The infantrymen had little sense of victory. They were filled with trepidation. The departure of the Rangers had removed all the boats from the far shore. Suppose the Chinese attacked again and drove them from the hill. How would they get off the beach?

Except for an occasional mortar and artillery shell dropping in, the hill remained calm. Just before darkness the boats returned. The men moved quietly off the height.

At the cove, while half the company formed a perimeter and stood guard, the others dug foxholes around the beach. When these were completed, half the men departed. Those who remained were gnawed by the anguish of insecurity. Again there were no boats to take them off.

It was well after dark by then. The day-long rain had soaked the soldiers' uniforms. A raw wind drove a sleeting rain that had a cutting edge.

Enough boats had returned by midnight to take everyone

off. Making a final check to be sure his men had left nothing for the enemy, the company commander was the last to shove off.

In the pitch-black darkness, the troops guided their boats toward the flickers of flashlights that Harris had ordered shown, despite the danger of provoking enemy artillery. The last elements of the company returned to the original embarkation point at 0130 on 12 April.

A total of 193 officers and men of the rifle company, plus 12 machinegunners, had crossed the reservoir to reinforce the Rangers. All had come back. Three men were wounded. No one was killed.

Exactly six hours earlier, General Hoge had sent General Ridgway a message: "Attempt to seize Hwachon reservoir unsuccessful, due to strong obstinate enemy resistance."

Callaway's battalion, in the three days his troops had tried to reach the dam overland, had lost 10 men killed, 56 wounded.

The circumstances of the Hwachon operation might have been the subject of an inquiry, particularly since there was a lull all across Korea as the troops settled into the Kansas line. But an entirely unrelated development had overshadowed the raid. On 11 April, at the height of the action, came the startling news that President Harry Truman had relieved General Douglas MacArthur as commander of UN forces in Korea and was replacing him with General Ridgway. As Ridgway flew to Tokyo, the events at the dam fell into obscurity.

Soon afterward, the reason the Chinese had put up such strong resistance at the dam became clear. They had been using the broken terrain to gather and conceal equipment and supplies for a gigantic build-up. On 22 April, they launched the first phase of an overwhelming spring offensive. They drove Eighth Army off the Kansas line, and in a week forced the UN troops back 30 miles. When the situation became somewhat stable again, the forward line of IX Corps was just ahead of Hongchon.

By then, the Hwachon Dam foray was already history. Few would remember the futile incident unless to remark that men sometimes die for the inconsequential. The corps had carried out an attack as a precaution against a danger that never materialized.

But who knows beforehand whether an imagined menace will become real? Who knows until afterward when the expenditure of men will lead to a decisive moment of triumph on the battlefield?

The Hwachon Dam operation turned out to be inconclusive. Except, of course, to the 13 Americans who died, to the 70 who were wounded and, no less, to the unknown and uncounted enemy soldiers who were killed and wounded.

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## LESSONS LEARNED

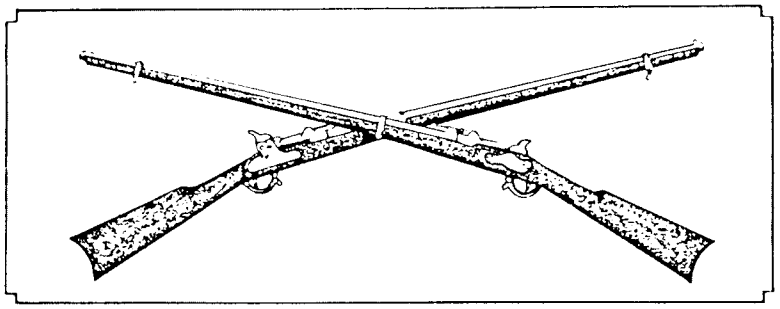
*In a recent interview, Colonel John W. Callaway, now retired, stressed the importance of learning the lessons that the Hwachon Dam operation offers.*

*He feels that his decision to move forward to F Company's location to assess the situation first-hand–instead of ordering the continuing advance of the other companies–was not a good one. The lead company had met no resistance and was within 600 yards of the dam. Colonel Callaway feels that the Chinese resistance was not initially strong enough to halt a determined advance, and that the dam could have been seized that first afternoon and the mission accomplished if the attack had continued.*

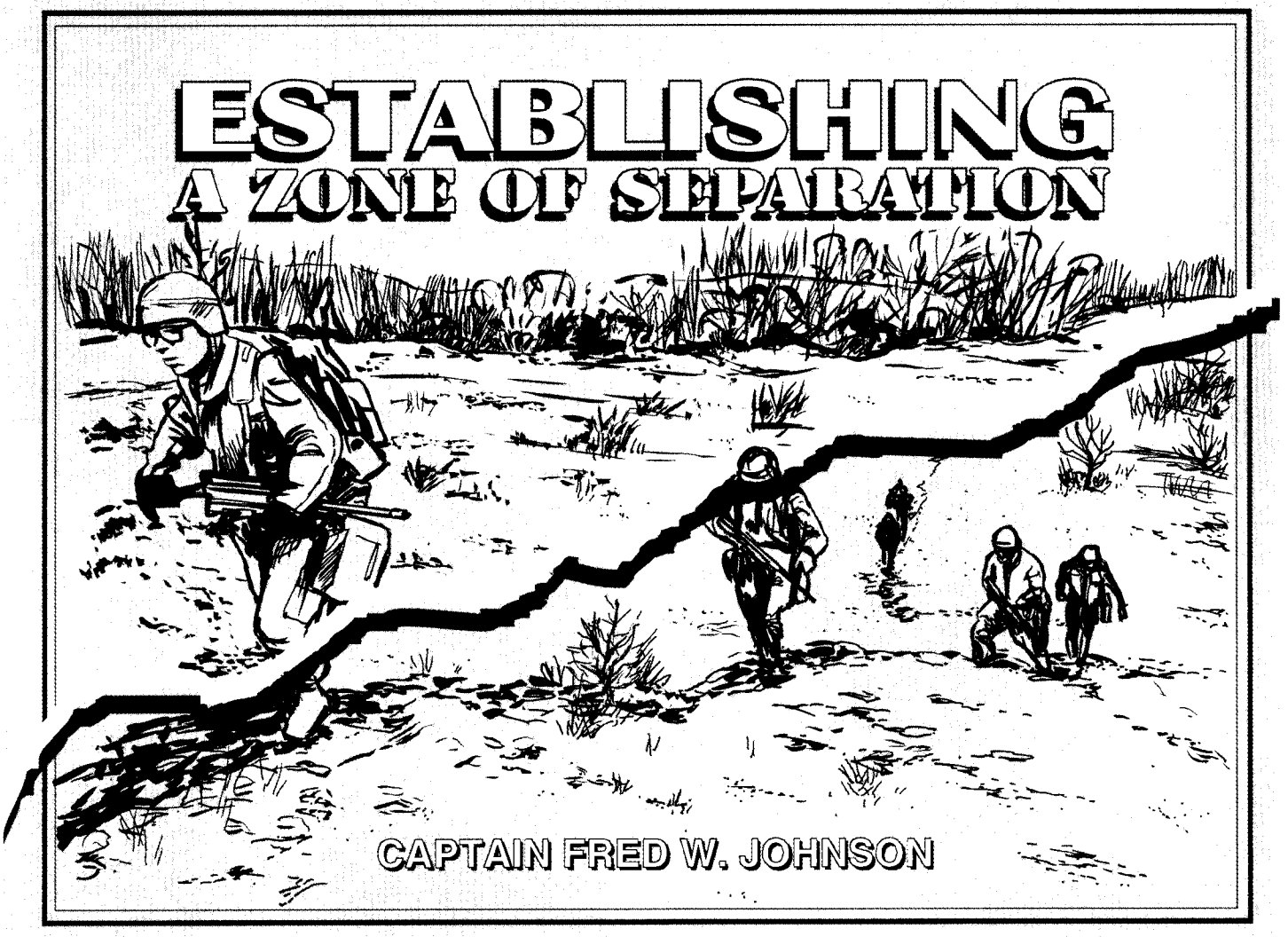
*Another lesson is to verify initial reports, corroborating them whenever possible to ensure that command decisions are based upon the best and most accurate information available. The radio operator—the only person available to communicate with the battalion commander—was so shocked by the loss of the company commander that he was unable to give an accurate description of the situation on the ground. It is also important to stress the necessity that a unit's chain of command stay in communication with higher headquarters, particularly when the unit is in contact.*

*Colonel Callaway also feels that the attack could have succeeded if effective artillery fire and close air support had been available; the existing roads permitted moving assault boats forward and should have been used to displace artillery pieces forward as well. Instead, all artillery available was firing at maximum range and hence was ineffective, delivering only sporadic rounds within the target area. Finally, since air support was unavailable due to low ceiling, it was impossible to deny the Chinese freedom of maneuver on and near the objective.*

*Editor, INFANTRY*



# ESTABLISHING A ZONE OF SEPARATION



CAPTAIN FRED W. JOHNSON

*EDITOR'S NOTE: This article is extracted from the Center for Army Lessons Learned (CALL) Newsletter No. 96-5, "Drawing a Line in the Mud: Establishing and Controlling a Zone of Separation (ZOS)," May 1996.*

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A team from the Center for Army Lessons Learned (CALL) at Fort Leavenworth deployed to Bosnia to collect lessons learned during Operation *Joint Endeavor.* One of the operations the team observed was the establishment of a zone of separation (ZOS) between former warring factions by elements of Task Force (TF) Eagle, which consisted of several brigade-size task forces.

This operation was accomplished within 30 days of the deployment—an admirable feat, considering that the ZOS snaked over 1,000 miles of war-torn countryside that contained millions of mines, thousands of bunkers, and hundreds of miles of trenchlines. In addition, the warring factions, which had been engaged in intense combat for more than four years, were now required to work together to develop and execute a plan for removing the mines and fortifications within the zone. And the soldiers and leaders of TF Eagle were responsible for verifying the work and making sure the factions complied with the requirements agreed upon at the Dayton, Ohio, conference in December 1995, and outlined in the General Agreed Framework for Peace.

Although this article considers the assigned areas of only one brigade, the tactics, techniques, and procedures (TTPs) used generally reflect those of the other brigade task forces in theater.

### The Operational Environment

The ZOS, as defined in the agreement, was represented by several potentially complex control measures (Figure 1) that merit further explanation:

**The Agreed Cease Fire Line (ACFL)**—the place where the fighting had stopped. TF Eagle units marked the line and a two-kilometer zone on each side of it. This four-kilometer

zone was the ACFL zone of separation.

**The Inter-Entity Boundary Line (IEBL)**—the line the parties in Dayton agreed would be the permanent boundary between them. In some instances, this line and the ACFL were the same. The IEBL became effective 45 days after the implementation force (IFOR) accepted the transfer of authority from the United Nations Protection Force (UNPROFOR). At this time, the IEBL ZOS and its four-kilometer buffer zone replaced the ACFL ZOS and became the permanent zone.

**The Areas of Transfer**—areas where the lines did not directly correspond. These were areas that one party would turn over to another.

**The 10-Kilometer Zone**—a 10-kilometer exclusion zone on either side of the ACFL, within which the status of all faction equipment and forces had to be reported. TF Eagle dedicated assets to verifying that the factions complied with the reporting requirements.

The ZOS was a dynamic area that changed in size according to the requirements and specified timelines of the agreement. Most of these timelines were based on events that followed the transfer of authority from UNPROFOR to IFOR. The following were the requirements as they pertained to the establishment of the ZOS:

- Within 30 days, all parties were to withdraw all forces to their respective sides of the ACFL ZOS and remove all mines, unexploded ordnance, explosive devices, wire obstacles, and fortifications.
- The IEBL would become effective in 45 days. Withdrawing forces would completely vacate and clear areas of transfer, including the removal of mines, demolitions, and unexploded ordnance.
- Entities to which an area was being transferred could not put forces into the new areas until transfer date plus 91 days, or as determined by the IFOR commander.

Each TF Eagle brigade-sized task force was responsible for at least one segment of the ZOS in its area of responsibility (AOR). The brigade observed by the CALL team had three. It was also responsible for enforcing the peace agreement through coordination with all three factions. Its sector spanned 58 kilometers north to south and 66 kilometers east to west. Within its AOR (Figure 2), the brigade was responsible for more than 114 kilometers of the ZOS and for verifying the removal of more than 1,306 bunkers, 713 minefields, and 200 kilometers of trenchlines. Its AOR also included seven major populated areas and numerous smaller towns, which required dedicated assets to ensure mission success.

***Operation Joint Endeavor required a great deal of direct contact and political interaction between its military commanders and the factions' military or political leaders.***

To facilitate force protection and sustainment operations, 11 company-sized lodgement areas were established, along with the brigade operating base and the brigade support area. Platoon-sized units manned 11 checkpoints and four permanent observation posts and secured several other critical nodes.

Under the peace agreement, the factions were to clear the mines, but the task force soldiers and leaders had to watch them execute the mission and then verify that it had been completed to standard. There were instances in which the factions could not complete the mission without the assistance of TF Eagle forces. In this effort, the leaders had to be careful to ensure impartiality. This was difficult because of the disparity and quality of equipment and levels of training. The three factions had one mine plow among them, and some subordinate units were more efficient in completing tasks than others.

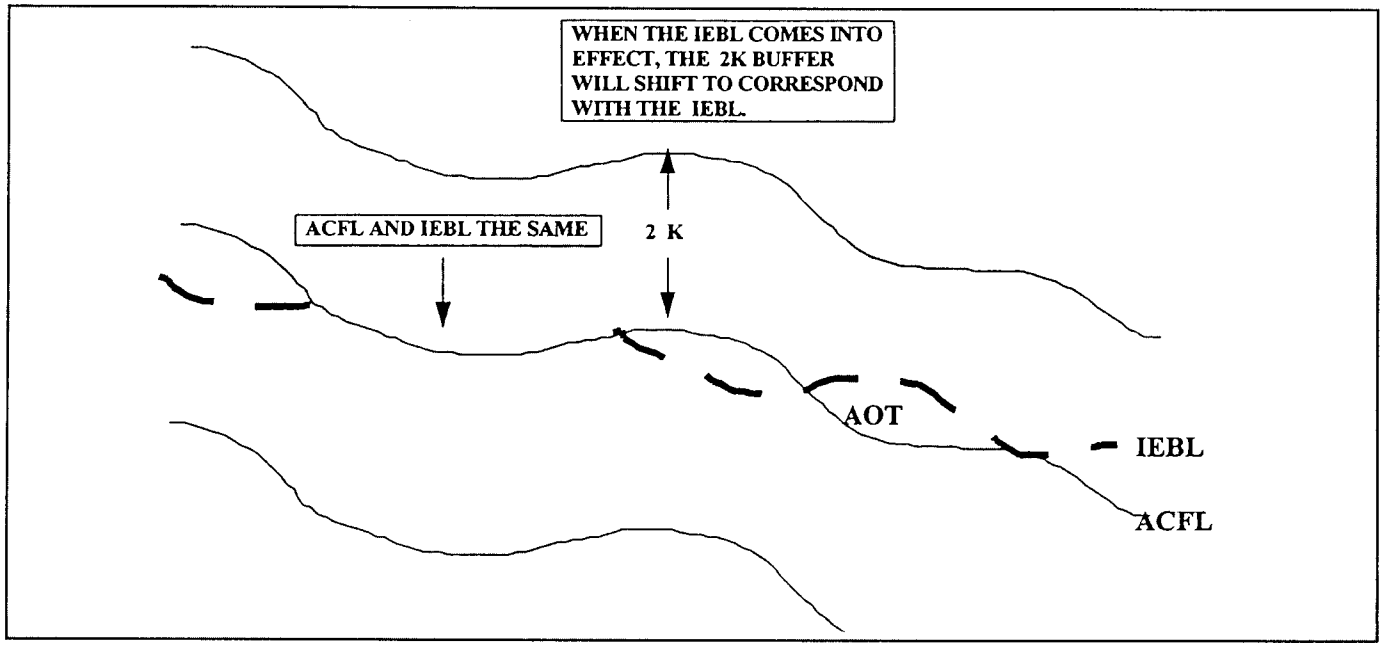


Figure 1

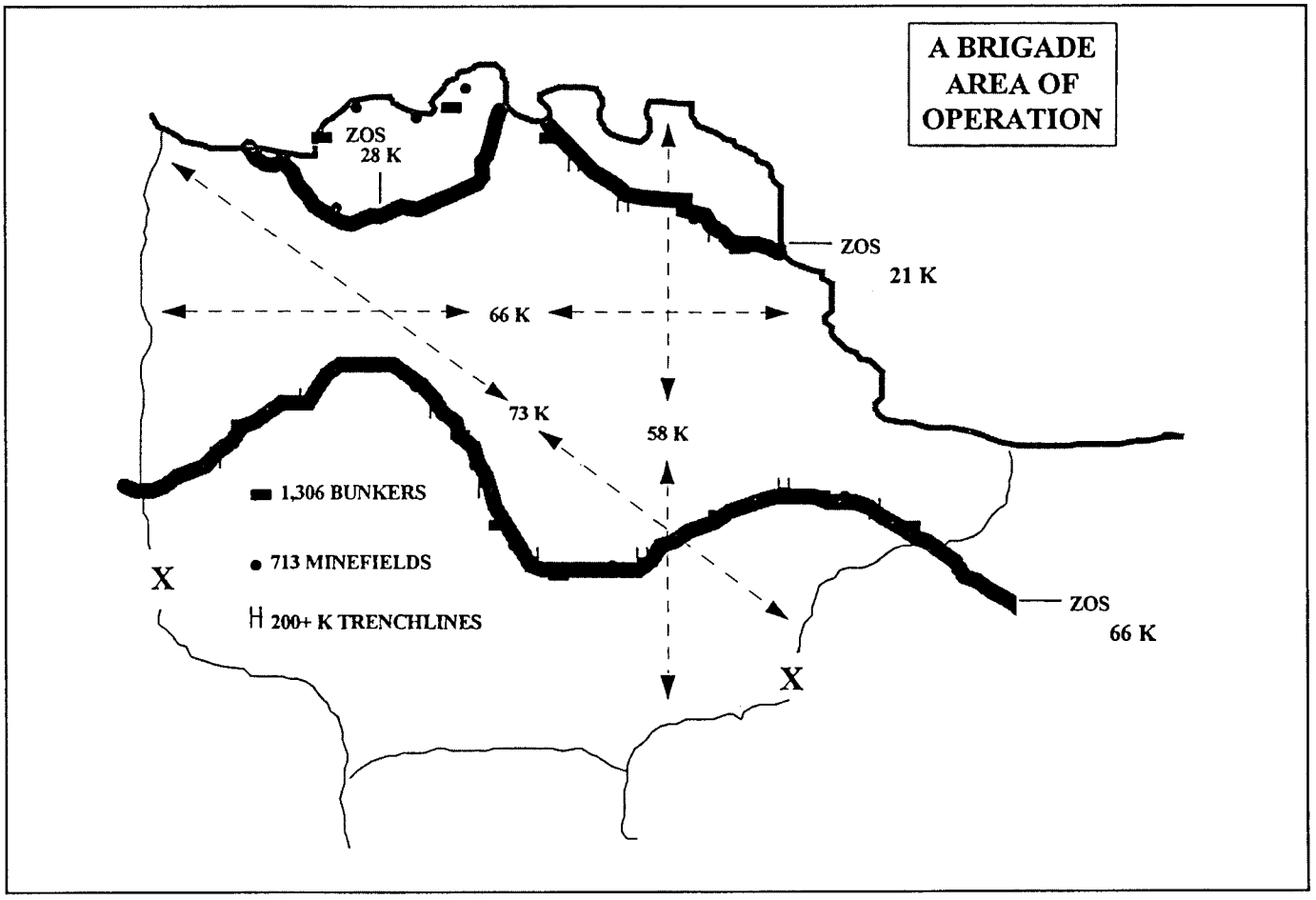


**Figure 2**

Leaders had to balance accomplishing tasks with maintaining impartiality.

In Operation *Joint Endeavor*, U.S. commanders were exposed for the first time to the concept of joint military commissions (JMCs), formally established bodies in which the guidelines for assistance are laid out. The operation required a great deal of direct contact and political interaction between its military commanders and the factions' military or political leaders. The aim of this interaction was to resolve conflicts or secure the consent or cooperation of local leaders, and sometimes the commanders had to bring the protagonists together and negotiate agreements or mediate disputes.

In such situations, commanders could not expect to function successfully using purely military principles and logic. The success of the mission depended on their ability to balance a combination of political power and interests, cultural values, personalities, and perceptions. Leaders in TF Eagle found the JMC process an indispensable part of their mission to guarantee peace in the region.

The stability operations environment provided unique considerations for maneuver and mobility. After the initial positions and lodgement areas were obtained, maneuvering and positioning for advantage sometimes entailed relatively little movement or relocation of forces. The mobility challenges were much the same as in combat environments, except that the forces were not only applying their own mobility assets but also working with faction forces and civil authorities to overcome challenges to mobility.

In conventional combat, units change locations with respect to each other, or add combat power to mass their effects, by changing force ratios. The early phases of Operation *Joint Endeavor* demonstrated that maneuver had little to do with the movement of forces. Following the entry operation, maneuver sometimes took the form of forceful discussion carried out at a JMC, or of movement and positioning to provide security to the opposing factions as they carried out the peace plan. Sometimes, the best way to gain and retain "positional advantage" was to ensure the factions' perception of TF Eagle as an impartial enforcer of the peace agreement.

Because of the extraordinary number of mines in the theater, mine clearing and marking influenced operations at all levels. The ability of the forces to conduct the mission without sustaining casualties demonstrated the proficiency and competency of NATO forces. Such a perception would therefore contribute to the successful achievement of the desired end.

The former warring factions had been engaged in a war of attrition, fighting from trenches and bunkers along battle lines that had changed hands several times. The trench systems were along either side of the confrontation line in the ZOS, and between these trenches were numerous minefields and destroyed villages. The roads through the ZOS had been blocked by minefields, craters, tank ditches, berms, and bunkers.

The minefields off the roads and between the trenches were often difficult to clear because of confusion as to their exact

positioning. Since the battle lines had changed hands, the factions could not guarantee the location of the mines and refused to clear many of these fields. Therefore, until a mine clearing capability could be contracted, many off-the-road regions within the ZOS could not be cleared for civilian use. Although this did not hinder mobility on the primary routes, it did restrict any off-road movement that might be needed.

The portions of the ZOS that were not cleared hindered the continued dismantling of the factions' defensive positions. If minefields could not be cleared, trenches could not be collapsed and bunkers could not be destroyed. And as long as TF Eagle soldiers had to continue operating in the ZOS, the uncleared areas would be a threat to them.

***Because of the extraordinary number of mines in the theater, mine clearing and marking influenced operations at all levels.***

### Planning ZOS Operations

The first step in planning a ZOS operation, as with any other, is to conduct a mission analysis. For most stability operations, the starting point for the mission analysis is the peace agreement. In this case, in addition to the broad tasks to be accomplished and the timelines to be met, several implied tasks were also identified. These implied tasks represented the details of establishing the ZOS—such things as establishing JMCs to determine the factions' courses of action (COAs) for compliance and for establishing checkpoints.

The brigade had only two weeks after deployment in the AOR before the first deadline of the agreement. The commander held his first JMC within four days of the arrival of the first two battalions (the third did not arrive for another month). Because he had deployed several weeks before the brigade's main body, he had been able to discuss general concepts for the separation of forces and the establishment of the ZOS with the faction leaders, and this helped set the stage for the JMC.

At the JMC, the requirements of the peace agreement were read, and the commander instructed the factions to develop the COAs. Within two hours, the plan for the separation of forces and the initial tasks for establishing the ZOS were complete. (In preparing for the JMC, the commander did require his staff to develop a generic COA in case the factions came to an impasse during the conference.)

Much like the JMC, the coordination meetings held between company or troop commanders and the faction leaders (often brigade-level commanders) were key to planning and executing ZOS tasks. Although the broad tasks of compliance (clearance of routes, removal of bunkers) were agreed upon in the JMC, the specific ways those tasks would be done were agreed upon during the coordination meetings.

Initially, the company commanders met daily with the factions at a central location to discuss the plan for the day; then they would execute the missions. These meetings were time consuming, often leaving only six to eight hours to accomplish the tasks. As a result, it was decided that meetings would be held once a week instead. At the weekly meeting, the factions were required to give the company commander a schedule of tasks they would complete during the coming week.

The nature of Operation *Joint Endeavor* entailed both decentralized planning and decentralized execution at battalion and sometimes company level. The brigade's plan was often a compilation of sub-unit plans, developed by battalion staffs from information gathered at daily coordination meetings with faction leaders. More often than not, battalions executed missions on the basis of the brigade commander's intent, broad goals from JMCs, and the results of their daily coordination meetings. Because the brigade staff was not always in the information chain, missions could not be supported or tracked without the battalion's detailed input.

Because of "bottom to top" planning and the high operational tempo, it was essential that TF Eagle units develop a system of tracking the missions. On any given day, a brigade might conduct up to 50 missions, often unrelated to one another, that entailed small unit activities—bunker destruction verification, mine clearance, checkpoint operations, and assessments of local towns in terms of civil affairs, counterintelligence, or psychological operations.

To facilitate the tracking of battalion-level missions, the brigade required the battalions and companies to submit daily reports of unit activities, down to company level, for the following day's operations. The missions, by number and description, were recorded by the night battle captain and briefed during the morning staff update. The battalions were then required to report every two hours on the progress of the missions (including a negative situation report). The information from these reports was then annotated on the tracking worksheet. At mission completion, a closing report was required. The results of the missions were reported on the operations and intelligence net for S-2 analysis. During the mission, spot reports were rendered, as required, which further developed the operational picture of the AOR.

### Establishing the ZOS

The separation of forces was helped along by the willingness of the factions and the early deployment of TF Eagle leaders to effect coordination with them. For the most part, the factions were already separated, but the major task of units was to avert confrontations and ensure that the factions maintained the integrity of the ACFL ZOS.

The factions were required to provide TF Eagle with overlays showing the location of all units, weapons, and equipment—not only in the ZOS, but within the 10-kilometer exclusion zone as well. The factions also had to notify TF Eagle units when any personnel or equipment moved through the zone. Communication was maintained with faction headquarters, and ultimately factional liaison officers were located at the brigade headquarters to facilitate this process.

The TTPs for the separation of forces and the establishment of the ZOS were developed jointly by the faction leaders at the brigade's first JMC.

Aside from the designation of the actual zones, one of the

first control measures established was ZOS blocks, which allowed TF Eagle to track the progress of separation and the establishment of the ZOS.

The first priority was to ensure freedom of movement. This was not just for the task force's convenience but to help the factions restore normal commercial and civilian traffic along the country's main highways. All of this required an enormous effort on the part of the combat soldiers.

As a result, the initial focus of the brigade's efforts was to clear routes within the ZOS. TF Eagle and the factions would accomplish this by "punching holes" through the zone, which entailed the clearance of major routes. Once this was done, both the task force and the factions could focus their efforts on the separation of forces and other requirements of the agreement.

Since part of the implementation of the peace agreement was ensuring freedom of movement through the ZOS, force positioning often became an issue during JMCs as it pertained to guaranteeing that freedom. The faction forces were primarily concerned with the security of their villages, which were often on the confrontation line or just beyond it. It was necessary to emphasize that TF Eagle units would not be positioned by the faction forces, but in a manner decided by the task force commanders.

The placement of the soldiers could be accomplished in many ways. The key was visibility. The soldiers had to conduct day and night patrols along all routes and across country that was cleared. To ensure that freedom of movement was retained once established, these forces manned checkpoints along the primary commercial and civilian traffic routes. Elements of TF Eagle had to secure and retain key intersections, interchanges, and bridges.

Route clearance, or ZOS breaching, was the technique units used to clear routes in the zone. Company commanders would link up with their factional counterparts and coordinate the tasks to be accomplished from the schedule agreed upon at the weekly coordination meeting. Linkups would take place on both sides of the ZOS with the respective faction leaders. Faction soldiers (overwatched by TF Eagle units) would begin clearing from their side, working toward the ACFL. Because each faction was concerned that the other was not executing its responsibilities, it was essential that the clearances be conducted simultaneously.

***More often than not, battalions executed missions on the basis of the brigade commander's intent, broad goals from joint military conferences, and the results of their daily coordination meetings.***

The TTPs employed by the brigade included the following steps and performance measures:

Commanders determined which routes had to be opened and then synchronized their resources to facilitate deliberate and faithful execution.

Company commanders held daily coordination meetings with the factions in their AORs. These meetings set the framework for the way the factions would execute their compliance tasks (destroying bunkers, clearing minefields) and the way TF Eagle would verify the completion of those tasks.

The task force received detailed maps marking minefield locations. Coordination was made to determine what equipment the factional units would need to clear routes through their minefields and locate and mark other minefields. The task force soldiers had to be ready to provide the factions with body armor, helmets, medical support, and standard marking supplies. All of this coordination had to be worked out through interpreters on the ground in the days before the clearing effort was to begin.

As U.S. forces moved into sector, the engineers made contact with UN forces in the TF Eagle sector and received accurate information from them. This information was disseminated to other units through sketches, copies of mine markers, and photographs. The UN forces' extensive experience with the mine threat in the region helped with force protection efforts. Units coordinated with all of the factions to clear designated mobility corridors through the ZOS. Either at the JMCs or through commander-to-commander meetings with the factional brigades, times and link-up points were defined and agreed upon. Usually, the schedule was an 0830 linkup with an 0930 work time. At the designated time, the company commander or platoon leader would move to a linkup point.

Simultaneously, both sides would link up with the TF Eagle elements and begin to organize their work for the day. Usually, the mission would be for one or two routes at a time, but initially as many as three per company-size unit to facilitate freedom of movement.

Mobility teams moved to designated checkpoints and made face-to-face coordination the morning of the mission. The lineup for a mobility team was factional engineers, followed by an M1 tank roller, armored combat earthmover (ACE) or combat engineer vehicle (CEV), followed by an engineer squad, followed by a Bradley section or tank platoon and accompanied by a medic. The factions often provided medics as well. After the linkup of forces, the leaders on both sides were identified. The leaders of the clearing teams were further identified, and the company and faction leaders physically linked up. At this point, the team leaders made detailed plans for the day's work.

The teams left together, with the factions leading the clearing teams into the zone. The factional forces gathered the necessary equipment, if they had it, and began to clear mines.

The easiest to clear were the surface-laid mines. The faction engineers gathered them and separated the reusable ones from those that were rusted or semi-destroyed. Many were in bad condition. Some of these were defused and collected, and others had to be blown in place. On-site negotiations were conducted for clearing the shoulders up to 10 meters on either side of the road. The method the factions used for probing was very different from U.S. methods. They had long poles (about one meter) with three-inch spikes on the end. They would walk slowly forward jabbing the ground in front of them. They said

they were primarily looking for antitank mines just below the surface. The factions were very nervous about clearing the PMA-1 antipersonnel mines.

The lanes were cleared in two directions at once; for example, one faction cleared from south to north and another from north to south. The companies provided security for them. One issue that had to be worked out on the ground was a meeting point between the two forces. In one case, one side wanted to stop 100 meters short of where the other side would stop. Company forces on the ground had to push the issue firmly to make sure the job was finished according to the standards of the agreement. Again, the job of carrying out international policy was subordinated to the ranks of lieutenant, captain, and lieutenant colonel.

Mobility work had to be done to finish the tasks on the lanes. Often, berms had to be cut, walls or other mobility obstacles dismantled, and craters filled. The ACE was very useful in this effort. If traffic on a lane was expected to be high, gravel was needed to pour over the filled-in trenches. Otherwise, within 48 hours the earth would sink into the trenches and stop wheeled vehicle traffic on that lane.

***A sensitive aspect of the stability operations was the requirement to verify the extent to which the factions had complied with the agreement.***

Ideally, the factions should have been made responsible for "proofing" the routes they had cleared—ensuring that the area was free of mines—but they did not have the equipment to complete this task to standard. As a result, TF Eagle units often had to proof a route, using an M1 tank with a roller.

Proofing could be a dangerous business; three mine detonations occurred in the brigade's sector during proofing missions. Fortunately, because of the TTPs the units used, these detonations caused no injuries to soldiers and only minimal damage to equipment. These TTPs were developed and refined as a result of the task force's highly successful after-action review and lessons learned program.

### The Verification Process

At times, the process of verifying compliance with the peace agreement was impeded by the number of obstacles and fortifications in the ZOS and the available combat power. Before the tasks could be accomplished, the minefields, bunkers, and trenches had to be identified; the factions had to have the manpower and equipment to execute the missions; and U.S. forces had to have the personnel to verify the process while also executing other missions that were part of the operation.

The factions provided overlays showing the locations of fortifications and obstacles, but these were not always reliable, and the brigade troops were still responsible for confirming them. It was argued, for instance, that to verify the dismantling of bunkers the unit should know the grid and numbers by sector. The grid and numbers should be documented and then annotated as "dismantled or destroyed" in sequence as the factions completed the task. At first glance, this seemed to be a reasonable technique for measuring the tangible success of verification—except for the 1,300 bunkers and 200 miles of trenchlines.

To help confirm the numbers, aerial reconnaissance was conducted over the ZOS with AH-1 and OH-58 helicopters, and this was generally effective in identifying bunkers and trenchlines. But grids were determined using precision GPS (global positioning system) receivers on the aircraft to provide approximate locations. Ideally, the OH-58 should have been equipped with a position and azimuth determining system to get a more definite grid location. Also, a scout weapons team has limited time on station. The problem was compounded by the fact that the brigade's air assets were tasked to reconnoiter another brigade's ZOS as well. Because of the limited station time, the reconnaissance was not nearly as detailed as it might have been. In addition, if the helicopters had had video recording capabilities, the brigade could have conducted a more thorough analysis of the ZOS and completed a more thorough debrief.

Using ground forces to confirm exact grid locations of the obstacles and fortifications would have required more manpower (combat power) than was available to accomplish the task in a timely manner.

One of the task force's primary missions was to conduct ZOS reconnaissance to confirm or deny a faction's compliance with the peace accord. TF Eagle initiated a ZOS reconnaissance board—modeled roughly after a targeting board—whose function was to synchronize intelligence information, reconnaissance assets, and verification requirements into a workable, comprehensive reconnaissance plan.

A sensitive aspect of the stability operations was the requirement to verify the extent to which the factions had complied with the agreement. Task force leaders soon realized the need to ensure that the ZOS reconnaissance was coordinated among air and ground assets, division and maneuver brigade elements, and U.S. and allied forces.

The board met daily at 0815 with the goal of planning reconnaissance missions for 96 hours ahead. The group developed a ZOS reconnaissance matrix that listed each ZOS block, the possible items of interest in each area, and the assets planned to reconnoiter each block, including Army aviation, ground reconnaissance, observation points, tactical air reconnaissance, intelligence, and special operations forces (SOFs). The goal was to reconnoiter each ZOS block every day with a mix of assets and to vary the reconnaissances in time and duration to avoid predictability.

First, fusing current intelligence and operations in a timely manner was difficult, especially in the beginning. The board meeting would produce a tentative fragmentary order (FRAGO) by late morning, but the current day's reconnaissance results would not be available until approximately 1800. This often caused major changes in the next day's plan, and the maneuver units executing the reconnaissance would get changes just hours before execution time. Added to this were the usual difficulties of getting several key staff members to yet another meet-

ing, as well as the challenge of integrating valuable but dispersed SOF assets. As the board drew closer to its goal of issuing a FRAGO 48 hours ahead, the process became somewhat smoother.

Second, there was an initial disagreement on whether the process should be top or bottom driven. TF Eagle was pressing the brigades for information on how much of their ZOS portions they could cover with organic assets, while the brigades were clamoring for the plan on the use of TF Eagle resources.

Finally, the task force members had to adjust their thought processes. Although the targeting board format and the *decide, detect, deliver, assess* methodology were useful as a starting point, many other factors came into play in the stability operations reconnaissance mission. Reconnaissance is fundamentally different from targeting, which in this scenario also involved changing perceptions. Every time a sensitive situation arose, board members had to consider the political ramifications, the input from coalition partners, regional history, and the specific rules of engagement.

The brigade's collection plan, developed from known faction locations, was aimed at verifying continued compliance with the peace agreement through reconnaissance and site inspections. In accordance with the agreement, the factions were required to provide the brigade with overlays of their equipment and weapons collection points within the 10-kilometer exclusion zone.

Although this 10-kilometer zone was not a zone of separation, the TTPs the brigade developed to verify the factions' compliance with the reporting requirements may be useful in future operations.

The brigade S-2 compiled this information on a database with the grid, amounts and types of equipment, the faction organization, and the most recent date it was observed. This information and the overlays were passed to the G-2 for incorporation into the division collection plan. These locations, along with additional sites confirmed by reconnaissance, were designated named areas of interest (NAIs). From the division collection plan, the brigade was required to reconnoiter the designated NAIs to confirm or deny that the equipment or weapons, by number and type, were still being maintained at that location. In turn, the brigade S-2 developed a collection plan that contained a total of 81 NAIs, including those tasked by division. In the brigade plan, units were tasked to conduct either a visual reconnaissance (drive-by) or site inspections.

***In accordance with the agreement, the factions were required to provide the brigade with overlays of their equipment and weapons collection points within the 10-kilometer exclusion zone.***

The NAIs were assigned priorities for reconnaissance: every 5 days, every 7 days, every 10 days, and every 14 days. (There was a period of increased tension between the former warring factions and TF Eagle that resulted in the collection sites being reconnoitered every two days.)

To facilitate this process and focus the collection and verification procedures, the brigade S-2 developed a system to coordinate the effort over time with a "10-day forecaster." This provided the day-by-day reconnaissance tasking by unit. If it was determined that a faction had moved equipment, or if increased amounts were identified at a collection point, a unit would be tasked to notify the collection site commander that he was delinquent in complying with the peace agreement.

This procedure assisted the verification process. Although the grids of collection points provided by the factions were sometimes 500 to 800 meters off, reconnaissance confirmed the locations, giving the brigade S-2 fairly accurate information with which to begin his collection planning. The requirement was still to verify continued compliance, and any change in the composition or disposition of weapons or equipment could indicate noncompliance. Because of the vast number of collection points, there was a potential for focusing the entire intelligence collection effort on these sites. This would have placed great demand on the units and may have deterred reconnaissance and surveillance planning to identify other significant faction activity. Still, the plan developed by the S-2 to collect and verify, by priority, over time left units free to conduct other reconnaissance missions.

The procedure was also effective in facilitating "stability engagements." Units periodically used combat camera crews to photograph equipment at the sites, which often identified changes in the composition of equipment. In cases where the factions had not notified IFOR of the changes, the photographs were used to demonstrate noncompliance and force them to submit reports and updates in a more timely manner.

A battalion air liaison officer (ALO) coordinated for an AC-130 aircraft to orbit the units' area during hours of darkness and identify faction movement or violations. Ground forces and an F-18 were also tasked to be prepared to react to any sightings by the AC-130.

The ALO coordinated with the AC-130 and night vision equipped F-18s for direct communication during a night mission. The concept of the operation required that the AC-130 be on station for one hour. The ALO, battalion commander, and S-2 positioned themselves at a central location. The AC-130 would fly over this location, and the ALO would mark the position with an infrared strobe to identify the start point (as the hub of a spoke system). From his position, the ALO gave the AC-130 a heading and distance to known unit checkpoint grids. Ground forces at these locations, which also had infrared strobes, were required to shut down their vehicles to prevent additional heat signatures. The AC-130 was directed to orbit the area to identify movement. The ground forces were prepared to react to sightings by way of communications through the battalion commander. F-18s would be used as an extra means of identification as well as a show of force, if necessary.

The ground forces did not have reflective tape, which would have made it easier to distinguish between friendly units and factions. Because of restrictions from the Combined Air Op-

erations Center, the AC-130 could not fly close enough to the Croatian border to observe two critical checkpoints. This coordination must take place well before the execution of a mission. The AC-130 is designed to observe pinpoint targets, and it takes up to 15 minutes to effectively establish its pattern, resulting in slow movement from point to point. This significantly reduces the amount of work that can be accomplished during one hour of station time. A unit should request three hours for time-on-target and should reduce the number of targets to ensure thorough reconnaissance of the AOR.

The Joint Surveillance Target Acquisition Radar System (JSTARS) was also used in the verification process. The brigade was supported by one ground station module (GSM), which received JSTARS information. Initially, the JSTARS monitored large sectors, making it difficult to analyze specific areas. As a result, the S-2 narrowed the focus of the JSTARS by orienting the system on NAIs for specified periods of time. He also gave the GSM operators (who performed limited analysis) priority intelligence requirements and likely patterns to look for and observe.

JSTARS had certain limitations (particularly in this environment) that precluded its employment as a stand-alone collection asset. Nevertheless, the brigade experienced several successes with the JSTARS:

- It identified large movements out of towns that were to be transferred between factions. After the S-2 was alerted to these movements, civilian and military operations personnel were sent to the location to determine the reasons for the movements.
- In addition, JSTARS confirmed a ferry site that was being used to move military equipment. The site was designated an NAI for a period of several days, and the moving target indicator detected the movement across the river.
- Two or three tanks were identified in an assembly area by a fixed target indicator and confirmed, to some degree, by a SAR photograph.
- A railhead where armored vehicles were being loaded was identified near a key town.
- The JSTARS database also confirmed the exact date movements began.

The ZOS had to be patrolled daily, and the units in sector had to verify that all the factions remained clear of their former positions, that the zone had no weapons, and that it allowed freedom of movement for civilian traffic.

This was a herculean effort, given the size of the sector and the number of other tasks associated with the mission. The numerous roads and trails and the vast distances were made worse by the poor conditions of the road network. The peace agreement also required TF Eagle to man certain fixed checkpoints, and in a JMC, the factions agreed upon joint patrols within the ZOS. The brigade identified the need to develop a standard border-surveillance plan with the intent of establishing a series of checkpoints along the ZOS. There was at least one base camp in each company sector of the ZOS. Each sector would have at least one permanent checkpoint along the primary roads, and more could be added if necessary.

The zone would be patrolled daily by the air assets. The air patrols would be conducted at least once during daylight hours and once after dark. They would patrol the entire trace of the ZOS unless a specific region required close scrutiny. Random ground patrols would go out daily, some mounted and some on foot. The plan required both day and night reconnaissance.

The mounted patrols were assigned a series of checkpoints; they approached each checkpoint carefully, stopped and dismounted, observed the region for any changes since the last patrol, reported any observations, then mounted and moved to the next checkpoint. The vehicles would have a specified time between checkpoints, and the base would monitor reporting to track progress and identify any possible problems in the zone. Ground patrols were conducted in much the same manner. (As of the time this article was written, the details for the joint reconnaissance with the factions had not yet been worked out.) The entire zone was covered by observation and patrol within a set time period, such as 48 to 72 hours.

TF Eagle units faced the problem of ensuring that the vacated positions within the ZOS were not reoccupied at night or during other periods of limited visibility. Dismounted patrols during the day walked through the trench lines and bunker positions with a guide from the factions. The intent was to show that the faction forces had evacuated the trench lines. There were reports, however, that some of the bunkers along the trench lines contained loaves of bread and had folded blankets on the wooden bunks; this resulted in the decision to develop a plan to verify that the bunkers were actually vacated during the night.

Although foot patrols through the trenches would be dangerous at night, there was the alternative of patrolling the routes with M-3 Bradleys and above the ZOS with scout weapons teams. Through the use of passive and thermal optics, the patrols could determine whether there were any unusual heat or light sources in the "vacated" regions. If personnel were identified, it would be necessary to confront the factions with the information and let them know their violations were being monitored.

The success of this ZOS operation can be attributed to many factors, including excellent pre-deployment training at the Combat Maneuver Training Center, soldiers and leaders who were mentally and physically prepared for the mission, and the willingness of the factions to comply with the peace agreement.

Most important, however, TF Eagle units executed the tasks in accordance with their training, adopted and refined TTPs when required, and maintained flexibility in both the planning and the execution of the mission.

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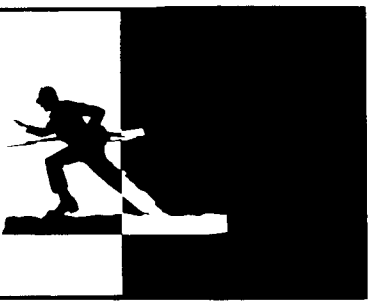

# Situational Training Exercises

## In Stability and Support Operations

LIEUTENANT JOHN BRENNAN

Now, more than ever, infantry units are deployed to stability and support operations in which the goal is peacekeeping, peacemaking, or peace enforcement.

Recent operations in Somalia and Haiti, and now Bosnia, show that such operations are the future of the Army's force projection. The problem is that the Army has never given these missions the training time they deserve. And the primary reason for this is that these missions do not appear on the unit mission essential task list (METL). Just because they are not on the METL, however, is no reason that units should not train and prepare for them.

The best way to solve this problem would be to publish a standard mission training plan (MTP) that addresses the requirements of stability and support operations. Until then, commanders must provide their soldiers with training and knowledge that will prepare them for these nontraditional missions. The infantry company commander can develop sound training from the conventional principles he already uses.

One of the most profitable ways to train is through situational training exercises (STXs). These exercises are critical to training for today's new missions, and many units are developing STXs for such possible situations. This article will discuss methods for practicing and developing appropriate training techniques at the tactical level.

The commander must include training for stability and support operations as part of the company's METL, describing it as a broad task so that it includes all of the possible missions. It is his responsibility to determine the battle tasks that should fall under the mission essential task. The next critical step is to lock-in time on the training calendar. At this point, these contingencies have become a "real" mission for the company and can be trained on accordingly. Following this, the commander reviews the battle tasks and determines the conditions and standards for each. Associated with each of these tasks should also be a checklist of subtasks and standards. The significant difference here is that there are no field manuals or published list of subtasks to study. One way to develop the list of subtasks may be from studying the Center for Army Lessons Learned (CALL) reports on Haiti and Somalia. This organization publishes some tactical tips on dealing with stability and support operational missions.

When it is finally time to start training on these tasks, the commander must clarify one very important point: that these operations are absolutely different from any other kind of warfare an infantryman has ever experienced, and that the rules of engagement (ROEs) drive everything. They protect the soldier from the citizen by means of self defense, and protect the citizen from possible unwarranted aggressive actions by the soldier. The rules must be reinforced throughout the entire training process.

The significance of the ROEs cannot be stressed enough. They are the guide for executing any stability and support mission. They are so important that it may become necessary to have someone from the Judge Advocate General (JAG) corps come and explain the ROE process to the company. And when it comes time to conduct training, it will be helpful to have a JAG representative present to assist in ROE development and ensure ROE compliance. He may prove invaluable in the after-action review process and in Law of Land Warfare training. In any event, every tactic the platoons develop must stay within the boundaries of the ROEs. It is the commander's responsibility to see that it does.

In starting off, it may be helpful for the company to divide the work, while building company cohesion and expertise. In other words, assign each platoon a type

of task that supports a possible mission of stability and support operations, and let them develop tactics and training for that task. Once a platoon has become the subject-matter expert for that task, they can begin training the other platoons by means of situational training exercises (STXs). For instance, 1st Platoon can study checkpoint operations, 2d Platoon can develop patrolling techniques, and 3d Platoon can concentrate on convoy security. Other areas to be studied should be evenly divided throughout the unit.

Where do we find these situations? If there is someone in the unit who has experience with operations of this nature, find out who they are. If not, CALL continually publishes reports on missions involving stability and support operations; for instance, CALL Publication No. 93-1, Somalia, contains a section on STX training. Here is a list of situations our soldiers have encountered in Somalia and Haiti:

- Refugee relocation.
- Drive-by shooting.
- Finding a dead body.
- Civilian casualty.
- Projectiles thrown.
- Belligerent roadblock demanding tolls.
- Appeal for medical assistance.
- Civilian criminal apprehended.
- Land mine discovered.
- Weapons discovered at checkpoint.

Someone must respond to each of these situations, but the platoon leader or commander may not be present to direct the response. The individual soldier must therefore be trained to respond in a manner consistent with the ROEs and the commander's intent.

In a way, this training is already conducted in the Army. For example, when the commander becomes a casualty, the executive officer (XO) has to take over. This situational training gives the XO an opportunity to deal with an ever-changing situation. He learns from it and will be more confident in his response if placed in that situation again. Squad leaders and individual soldiers need to have the same experience to develop confidence. Today's infantry soldier is smart and resourceful. He needs opportunities to use his own initiative in furthering the commander's intent, within the ROE. And this is an important goal of STXs.

The following patrolling scenario may serve as a test case for the way the ROEs will control a soldier's menu of responses:

*A squad is responsible for patrolling a four-square-block area in a city. There are two primary routes into the area; the rest are alleyways and dead ends. The squad's mission is to remove belligerent roadblocks and checkpoints from the area and maintain a force to deter future placement of them.* During one of the dismounted patrols, the squad runs into a roadblock. The four civilians have placed a car across the road and are inspecting all vehicles that come into the area. Specifically, *they are looking for weapons or contraband and occasionally stealing money* from the detainees. They are all armed with *AK47 and M16 rifles. They have one rocket-propelled grenade launcher.*

What does the squad leader do?

Any reaction must meet the requirements of the ROE and the mission, and soldiers can develop this skill through STX training. For instance, if the response is to set up a base of fire and assault across the road block, then the commander does not intend to find a peaceful resolution and improved relations. The following reaction, on the other hand, reflects the commander's real intent of maintaining peace and sustaining the force:

- Report the situation.
- Request an interpreter to support the action.
- Set up the support team in a position to provide fire support.
- The search team approaches the road block in a non-hostile manner (smiling, not pointing weapon).
- The squad leader and interpreter approach the civilians; the search team stands off and observes. They are looking for an intent to move to hostilities.
- Ask why they have set up a road block.
- Listen to what they say. Find out their reason for doing it; it may be that peacekeeping forces could take on this mission.
- Inform the civilians of the rules (that road blocks are not authorized under the present agreement between forces). Attempt to reach a peaceful resolution (it may include a guns-for-money swap).

The point is that the squad leader needs to know what measures the commander has authorized for dealing with the civilian population.

This last scenario, while exhaustive, *will* occur in some form during stability and support operations. And it incorporates many other issues of operations other than war—negotiations, patience, and understanding of how to operate under the ROEs. It is important for soldiers to see how the "approved solution" demonstrates the commander's interpretation of the ROEs. Again, the overall intent of the STX is to allow the squads to train as squads, while allowing the commander the opportunity to trouble-shoot the soldiers' responses to the ROE and the operational environment.

In conducting this kind of training, MILES equipment is invaluable. The company will also need volunteers to serve as the opposing force and appropriate equipment and dress (civilian attire, foreign weapons, and an automobile). One asset that is found on every post is military police support. Military policemen have received extensive training, through STXs, on disarming hostile suspects, negotiations, self defense, and the use of force. Their support and guidance will prove very useful to the training.

Another asset may be found within the company: soldiers who have foreign language skills. An interpreter may not always be available. From time to time, include soldiers from other branches and specialties to assist in the training. These might include civil affairs, psychological operations, or engineers. When possible, recruit support from the families in the company to act as civilian bystanders. Not only will this improve the reality of the training, but it will give the families an appreciation for what their soldiers are doing.

For this training to be effective, the members of each platoon do not need to see their comrades' performance initially; but the time will come when they need to learn from the others' successes and mistakes. To support this idea, the opposing force should present the same

situation and planned responses to each squad. While a squad is going through, the other squads are often left out of the training and therefore miss an opportunity to learn. The negotiations should be videotaped for the benefit of later review. After each squad has moved through the STX, immediately move to a classroom where the squads can watch and critique their own performance and that of the other squads. It is critical at this time that the leader explain how certain responses either supported or violated the commander's intent and the ROEs. A violation of the ROEs should be taken extremely seriously. Another approach might be to stop the scenario as an ROE violation occurs and address it immediately.

There are several ways to "spice up" the scenario. First, change the initial response the civilians give—have them disband peacefully or open fire. Then add a nosy civilian crowd that keeps wanting to see what is going on, children running around the area, dogs, and other things that will tend to distract the soldiers. The closer the situation is to real life, the better prepared the soldiers will be. Remember to make it easy at first and then gradually more difficult. Once the desired response from your subordinates has been achieved, it must be rehearsed as a battle drill.

Another way to reinforce this training is to publish short summaries of the situation and the response. Before a deployment, the squads and platoons can pull out these sheets and refresh their memories on the appropriate responses and how the ROEs were reflected. Here also the platoons can share information on their specific areas of expertise (cordon and search, convoys, checkpoints, and the like).

Training to successfully execute stability and support operations requires a certain mindset. As soon as a unit finds out it will be involved in such a mission, the leaders must begin developing that mental readiness. The more time a unit can spend going over ROEs and conducting STXs, the better.

Commanders and leaders will recognize the training principles of this kind of training from traditional METL training. The ideas and characteristics are similar, but the situations are quite different. Trainers must always go back to the goal of STX training, which is empowering our individual soldiers with the ability to think under the stresses of stability and support operations, the tenacity to react to the difficult situations it presents, and the initiative to meet mission requirements while sustaining the force.

The missions of the future may well be more diverse and demanding than ever before, but—with the training that situational training exercises can provide—the U.S. Army will be ready to deploy, do the job right the first time, and return home.

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# Field Trains and the BSA

## What Each Should Expect from the Other

**MAJOR SCOTT T. GLASS**

Most battalion task forces operate their field trains out of the brigade support area (BSA). The BSA, which is the base of operations for the forward support battalion (FSB), is designed to afford the best mix of rear area defense and brigade maneuver task force sustainment. Although some field trains commanders see problems with this arrangement, I believe that view is based on a misunderstanding of what the field trains owe the BSA and what they are entitled to expect in return.

Pushing critical support from the BSA forward to a maneuver task force is demanding, even under the best of circumstances; it is further complicated by terrain, weather, enemy attacks, or nuclear, biological, chemical (NBC) operations. In the middle of this tough situation is a maneuver battalion headquarters and headquarters company (HHC) commander who is often being pulled in several different directions at once.

His task force commander and staff expect him to push combat service support (CSS) forward quickly. The FSB commander, being responsible for BSA security and staff, also expects the field trains commander to participate fully in rear area defense. The HHC's own task force commander may or may not fully support the field trains' participation in rear defense operations.

Although there is no set way to perform this critical juggling act, both missions can be carried out successfully with adequate planning, advance preparation, and communication. The keys to success are understanding requirements, maintaining effective communications with the FSB/BSA, and practice.

The requirements can be found in Field Manual (FM) 63-20, *Forward Support Battalion,* or FM 63-1, *Support Battalion and Squadrons, Separate Brigades and Armored Cavalry Regiment.* These references spell out BSA doctrine, and knowing the doctrine gives the HHC commander an excellent basis for knowing what he can expect and what is expected of him.

For complete understanding of the requirements and success in the BSA, an HHC commander absolutely must have an up-to-date edition of the FSB's tactical SOP. From this SOP, he can extract reports and coordinations for which he is responsible to the BSA. He can then build a timeline in his field trains SOP for each requirement.

A field trains SOP should outline a set of priority of work and essential coordinating actions; this SOP and the BSA tactical SOP must agree. If they don't, any conflicts must be worked out with the BSA staff.

For example, the field trains SOP may set a different minimum time period for connecting communication wire with the BSA command post than that outlined in the BSA tactical SOP. The field trains commander should work with the BSA staff to ensure that his SOP priority of work dovetails with his requirement timeline.

What do the FSB and BSA expect from the field trains? Exact requirements vary from unit to unit, but as a general rule, the FSB/BSA staff expects the following:

**Attend a daily BSA update meeting.** If the field trains commander cannot attend, a soldier with decision-making ability must be designated to go in his place. This meeting is simply too valuable to miss; this is where most of the information the BSA owes to the field trains is disseminated.

**Occupy, secure, and defend designated terrain in the BSA defense scheme.** Part of this requirement will be tying in with units left and right, 24-hour security, maintaining NBC alarms, emplacing crew-served weapons, digging fighting positions, and keeping a reaction force. Patrols and observation posts (OPs) will probably be a part as well. Tactical SOPs contain specific details.

**Observe pre-planned field artillery targets in the assigned area.**

**Maintain communications with the BSA at all times.** No FSB/BSA will accept failed communications with a field trains command post.

**Send the required reports at designated times.** These can range from logistical updates to such defense-oriented data as sector sketches.

**Pass applicable intelligence and defense data immediately to the BSA tactical operations center (TOC).** This information may come from a variety of sources—OPs, patrols, and debriefs of returning logistics drivers.

**Relocate to a new BSA as part of the BSA movement plan.** This includes moving in accordance with a published timeline.

On the surface, these steps may sound like distractions that keep field trains from building logistical packages (LOGPACs) to send forward. But they are all necessary to the security of the supplies.

***BSA payback comes in the form of survivability and defense assistance that no field trains operating outside the BSA could provide for itself or expect from its parent battalion.***

In exchange for these necessary actions, the BSA owes the field trains a considerable amount in return. This payback comes as survivability and defense assistance that no field trains operating outside the BSA could either provide for itself or expect from its parent battalion.

The tactical SOP outlines specific assistance with movement, survivability, and defense plans that the FSB/BSA TOC must provide to each field trains commander. If this assistance is not provided routinely, a field trains commander should ask for it and be firm about it. After all, the tactical SOP probably says he is entitled to it.

Again, information on the amount and the quality of assistance varies from one unit to another. Generally, however, the BSA owes the field trains the following information and actions:

**Area of operations.** The BSA staff assigns each tenant unit terrain with left and right limits to secure and from which to conduct CSS operations. Normally, the brigade and FSB staffs select a BSA site that can support the battalion task forces equally. Field trains commanders must be told their area in advance of BSA displacements so they can reconnoiter the new site. Field trains commanders, ideally, should have a significant amount of input on site selection, particularly when the new location is a great distance from the task forces.

**Operations orders (OPORDs).** Field trains should receive timely copies of each OPORD the BSA produces, especially when the BSA is due to displace. These should include graphic overlays.

**Field artillery targeting plan.** The BSA gets a limited number of preplanned targets. The BSA S-3 assigns the targets to units fronting key terrain for observation and calls for fire.

**NBC operations.** Field trains receive NBC strike and contamination intelligence from the BSA, and being included in any decontamination operations is of paramount importance. Each field trains should be assigned a decontamination priority in accordance with its parent battalion's mission.

**Daily intelligence updates.** The BSA S-2 keeps the trains commanders aware of the threat in the rear area to help prevent enemy interdiction of task force LOGPACs.

**Obstacle and engineer support plan.** If a tenant unit is assigned a high-speed avenue of approach in its area of operations, the BSA must plan obstacles on it. The BSA coordinates and assigns priority to engineer support for digging countermobility obstacles and survivability positions.

**Reaction force assistance.** If a ten-

ant unit is attacked, the BSA reaction force will assist if needed.

**Enemy air threat early warning and air defense artillery.** The BSA is tied into the early warning net for enemy aircraft and must send this information quickly to tenant units. The BSA also coordinates and prioritizes air coverage from Stinger missile teams.

**Use of communications systems.** If a field trains does not have access to mobile subscriber equipment (MSE), it can make some use of the terminal at the BSA TOC. This also applies to tactical fax machines.

**Attack helicopter assets.** If the BSA is threatened, it can request attack helicopters from supporting aviation units or the brigade reserve. A field trains operating alone would have little chance of being granted this request.

Few of these services or advantages are readily available to a field trains from its parent task force in similar quality or quantity.

### BSA CSS Advantages

Being in the BSA gives tenant units several advantages that improve the field trains' ability to sustain their parent task forces:

**Heavy lift assets.** If the supported brigade has dedicated heavy helicopter assets, the BSA is most likely the focal point for their pick-ups. Field trains commanders in the BSA are well placed to assist in lifting critical Class III and V supplies forward.

**Direct access to bulk Class III and V supplies.** Locating near the Class III and V stocks required for task force sustainment enables field trains to draw them and meet emergency needs more responsively. Proximity to these stocks cuts down on the support platoon's travel time. A field trains operating alone would have to go back to the stocks, draw them, and then move forward again.

**Limited CSS blackouts.** If a task force field trains operates outside the BSA, it may have to move frequently to preserve concealment and security. During these moves, sustaining the task force is a difficult task that may be interrupted altogether. The BSA provides some stability for field trains and helps prevent or limit CSS blackouts.

**Proximity to vehicle and personnel casualties.** A field trains commander operating as a part of the BSA can quickly respond to casualties and vehicles evacuated to the BSA for treatment or repair. Quick feedback can then be sent back to the parent task force.

**Convoy security.** The BSA is responsible for coordinating security for the CSS moving forward over the main supply routes. BSA field trains receive intelligence and military police assets to help keep LOGPACs secure during movement.

**Base security.** When LOGPACs move forward, only a few soldiers remain in the field trains site. If this site is in the BSA, it can count on any defensive assistance needed.

***Field trains commanders, ideally, should have a significant amount of input on site selection, particularly when the new location is a great distance from their task forces.***

The daily BSA meeting is the mechanism by which all this information is disseminated and essential coordination is executed, and the field trains commander must be there to receive it.

What happens if the information and actions from the BSA are not satisfactory to the field trains commander? What if he needs some help with his defensive tasks? What if the timeline conflicts with his mission requirements? Such things can happen. This is where the open communications channels and mutual respect developed during prior training events with the FSB staff will pay big dividends.

### Training Events

Since so much information and coordination are required, practice is necessary to make a winning BSA team out of several task force field trains. Command post exercises (CPXs), field training exercises (FTXs), and officer professional development sessions all provide opportunities for practice.

Whenever the FSB/BSA is included in a brigade or division level CPX, the field trains commanders can participate with a leadership cell. As a minimum, the cell should be made up of the field trains commander, the XO, the first sergeant, and two communications specialists. The cell should use the wire, FM radio, and MSE equipment it would be expected to use during wartime.

Unfortunately, field trains rarely participate with the FSB during CPXs, and this is a lost opportunity. These exercises are prime events in which to learn the tactical SOP, familiarize all personnel with reports and information, and give the FSB staff some combat arms insight. If a field trains commander is new and has yet to deploy with the BSA, participating in a CPX is an excellent way to get acclimated.

Entire field trains cannot always deploy to the field when the BSA does. Although the goal should be to exercise the FSB-field trains link every time, on rare occasions, training calendar conflicts prevent it.

If the supporting BSA is deploying, however, and your maneuver battalion is not, a field trains commander should consider sending a group similar to the CPX cell. Members of this group can improve their grasp of the tactical SOP, replicate tactical movements, and walk through the occupation of a BSA. Even though only part of the field trains is present, the BSA becomes used to dealing with each as an entity.

Most FTXs eventually get around to having the field trains operate out of the BSA, but some of the training value is lost. The following are two ways to increase the amount of training time:

**Move under FSB/BSA control to the initial BSA instead of meeting them later.** This method entitles the field trains to a developed BSA defense and occupation plan from the FSB staff before movement.

**Keep the field trains with the BSA until task force elements go back pure and the field trains revert to battalion control.** The longer the training with the FSB/BSA staff, the more systems can be practiced.

Even when the deployment is over, the

job is not done. Field trains commanders can benefit from attending the FSB/BSA after-action reviews (AARs), although many fail to attend. Granted, HHC commanders are always busy, but AARs produce lessons learned, and the BSA/FSB always benefits from a field trains commander's input during an AAR.

It is extremely rare for field trains commanders to be included in FSB/BSA leader professional development programs. A field trains commander who hasn't been invited should ask the FSB S-3 for invitations to events concerning BSA operations. Although not all of the scheduled topics will apply, most of them will benefit from his attendance and input. The HHC XO and other field trains leaders will also benefit from attending.

The goal of the FSB commander is to provide responsive CSS to sustain fighting task forces. This includes defending CSS assets when necessary, which can be done only with the participation of the field trains. If field trains leaders can build productive training relationships with the BSA and FSB staff, these relationships will only increase the BSA's inherent CSS and security advantages. As a result, the task forces receive the combat service support they must have to fight and win.

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# The Platoon Drill Attack

## Is It a Drill or Not?

**CAPTAIN DAVID M. TOCZEK**

Looking forward to the 21st Century, the U.S. Army has begun to consider how to modify its organization, doctrine, and tactics to better face future threats. At least one task force has laid the groundwork for restructuring infantry units from the fire team to battalion level. When organizations change, the tactics that they will employ usually change as well.

One such document under scrutiny is the April 1992 edition of Field Manual (FM) 7-8, *Infantry Rifle Platoon and Squad.* Specifically, many question the validity of Chapter 4, Battle Drills, and one drill in particular: Battle Drill 1, Platoon Attack. By examining the battle drill's definition, we will see that the platoon attack is, in fact, a battle drill. More important, even if it were not a battle drill, it should be kept in FM 7-8 as a guide for platoon leaders training their platoons to maneuver in contact.

As defined in FM 25-101, *Battle Focused Training,* a battle drill is "a collective action rapidly executed without applying a deliberate decision-making process." A battle drill has the following characteristics:

- Requires minimal leader orders to accomplish and is standard throughout the Army.
- Requires sequential actions that are vital to success in combat or critical to preserving life.
- Applies to platoon-sized units or smaller.
- Involves trained responses to enemy actions or leaders' orders.
- Represents mental steps followed for offensive and defensive actions in training and combat.

In short, a battle drill allows a platoon or smaller unit to execute collective and individual actions with a minimum of leader decisions and directives.

Although this definition is accepted by all doctrinal manuals, it is not without fault. A troublesome qualifier in this definition is the term "deliberate decision-making process." What exactly characterizes a "deliberate" decision-making process? During any battle drill, the leader must conduct an estimate of the situation, even if it is abbreviated. For example, when conducting Battle Drill 5, Knock Out Bunkers, a squad leader must answer several questions, including the following:

- How many bunkers are there? What is the enemy's strength?
- Can I properly suppress with my lead fire team? Do I need to move it to a better position?
- Which route should I take with the assault element? Will the terrain cover my movement? Will I mask my support element's fire?
- When I'm done, will I have enough personnel to continue the mission?

These basic questions cover the enemy, terrain, and troops portions of METT-T (mission, enemy, terrain, troops, and time). To conduct the drill, the squad leader must develop courses of action, wargame them, compare them, and decide how he will mass his combat power. If we define a "deliberate decision-making process as involving even an abbre-

viated estimate, then *no* battle drill—with the possible exception of Battle Drill 3, React to Contact—can meet the true definition of a battle drill.

If we concede that using the estimate process during a battle drill does not prevent it from being a true drill, then a platoon attack should also be considered a drill, because it meets the requirements of the definition. Platoon attack also clearly fits the characteristics of a drill as listed in FM 25-101:

- It requires minimal leader orders and is standard throughout the Army.
- If conducted correctly, it does have a certain sequence of events. (Attacking without locating the enemy or gaining fire superiority first usually leads to trouble.)
- It applies to both platoons and squads.
- It is a trained response to enemy actions.
- It outlines the mental steps necessary for destroying the enemy.

Putting aside for a moment the question of whether the platoon attack is a drill, we should look at reasons for keeping it in FM 7-8. Without the five-step framework of the platoon attack, the platoon leader has no doctrinal reference to fall back on to reduce his decision-making process if he must attack. Many believe that the platoon attack is nothing more than a hasty attack. That may be so, but there is no manual that outlines the steps for a hasty attack. ARTEP 7-8 MTP, *Mission Training Plan for the Infantry Rifle Platoon and Squad,* outlines collective tasks that make up a hasty attack, but it does not have an all-inclusive task. If we are striving to reduce the time a platoon leader needs to decide on the best course of action, we need an outline of the bare essential actions for the platoon leader to follow.

As a senior platoon trainer for the Infantry Officer Basic Course (IOBC), I observed that lieutenants usually reduce platoon attack to two steps: *Actions on Contact* and *Attack.* By skipping *Locate the Enemy* and *Suppress the Enemy,* IOBC platoons usually do not place enough fire on the enemy to make maneuvering possible. If they do—by not properly identifying enemy positions—the students either miss enemy positions or do not use the terrain to their best advantage. FM 7-8 was printed in a pocket-sized format to encourage platoon leaders to use it as a reference in the field. If the platoon attack is removed from FM 7-8, platoon leaders will not have a doctrinal reference that reinforces the idea that all five steps are critical to success.

Many will argue that IOBC platoons are artificial organizations that do not mirror the level of training found in actual line platoons. This is to some extent true, but the lieutenants learn their basics at IOBC, and training them properly through the use of the platoon attack better prepares them to train and maneuver their platoons in the field.

Purists will argue that the platoon attack is simply not a battle drill and should not be included. If that is the case, a possible solution is to call it something else. ARTEP 7-8 Drill, *Battle Drills for the Infantry Rifle Platoon and Squad,* considers the platoon attack a "combat drill." A combat drill differs from a battle drill, although ARTEP 7-8-Drill is not clear on the distinction. By maintaining the platoon attack as a combat drill, we could alleviate the point of contention over its nomenclature.

Looking closely at the definition and characteristics of a battle drill, we can see that platoon attack is, indeed, a battle drill. If the number of leader actions precludes its definition as a battle drill, then we should refer to it as a combat drill.

Whatever we choose to call it, we need to keep the platoon attack as part of FM 7-8. By reinforcing the five steps to a platoon attack, we will be setting our platoon leaders up for success, and training them in a skill that will spell the difference between success and failure in combat.

**Captain David M. Toczek** served as an IOBC senior platoon trainer in the 2d Battalion, 11th Infantry, and is now a company commander in the 3d Brigade, 3d Infantry Division, at Fort Benning. He previously served as a rifle platoon leader, a company executive officer, and battalion adjutant for the 3d Battalion, 325th Infantry, in Italy. He is a 1988 graduate of the United States Military Academy.

# Light Scouts in Korea

## A Recommendation for Success

CAPTAIN GUY B. PARMETER

Any professional soldier who keeps up with current events realizes that there is an increasingly high probability for overt hostilities on the Korean peninsula. Agreements between the United States and South Korea call for an immediate U.S. response to any North Korean aggression against South Korea. Implied in this is the rapid deployment of U.S. forces in the event of hostilities. The leaders of these forces can begin their preparations for such a contingency by conducting an analysis of the circumstances under which they may fight.

An examination of the terrain and its effects on operations, as well as the tactics and organization of units forward deployed in Korea, provide the basis for a solid preparation plan. The leaders of light infantry scouts can prepare to play a particularly important role in preparing their own units for combat operations.

The Korean Peninsula is the ideal place for combined arms operations. Because the terrain is characterized by mountains and valleys, armored and mechanized columns absolutely must work closely with light dismounted forces.

The steep mountains present significant obstacles to an attacker while providing excellent fields of fire to the defender. The Koreans have developed the valleys into scattered villages and rice paddies. In the winter months, the frozen paddies can support any type of vehicular traffic. The rest of the year, armored and mechanized columns are confined to the road networks, which weave throughout the mountains. Regardless of the time of year, military traffic generally sticks to the roads, converging every few kilometers at tactically critical choke points. The heavy columns required to defeat an armored threat must maintain the initiative and freedom of movement, and the light forces that can secure the choke points will contribute to the success of armored and mechanized elements.

The 2d Infantry Division in Korea is tailored to the threat and the terrain. It has two U.S. brigades with three battalions each. The 1st Brigade has one armor and two mechanized infantry battalions; the 2d Brigade has one mechanized infantry and two air assault battalions.

During operations, the two air assault battalions would fall under division control. The division would then attach them to the brigades as necessary to seize critical terrain and clear choke points. This arrangement facilitates a habitual relationship in which it is second nature to plan and train for combined arms operations.

The typical brigade field exercise mirrors the way the unit would conduct combat operations. The brigade alerts and forms into tactical assembly areas. The light battalion air assaults to seize a critical choke point, after which the heavy forces pass through to destroy the bulk of enemy forces several kilometers beyond the choke point. Ideally, this entire brigade operation takes about 72 hours to execute. Given this operational relationship and arrangement of forces, the light battalion commander must be prepared to execute operations within 24 hours of an alert notification and to complete his mission within 48 hours.

The light battalion is crucial to the continuous movement of forces on a Korean battlefield. The unit must have planning procedures that are as brief yet as thorough and deliberate as possible. Before committing the entire battalion, the commander also needs a clear picture of the enemy forces he will fight. This is necessary to ensure that the battalion can accomplish its mission within the limited time available.

Of all the forces available to the light battalion commander, his scout platoon has more indirect influence on the outcome of the operation than any other. When employed in accordance with the conditions to be encountered on the Korean battlefield, the scouts increase the efficiency of the entire battalion. An examination of scout actions in the framework of four of the battlefield operating systems (BOS) reveals the benefits of minor modifications to the traditional scout mission essential task list (METL):

**Maneuver.** By performing an area reconnaissance of the battalion landing zones and objective areas, as well as a route reconnaissance from the landing zone to the objective, the scout platoon can greatly reduce the time a battalion needs to infiltrate to the objective. Upon completion of the reconnaissance, the scouts can position guides to link up with the battalion. This decreases the maneu-

ver unit's chances of navigational errors, unnecessary exposure to difficult or impassable terrain, or chance contacts with enemy observation posts, patrols, or obstacles.

**Firepower.** The scouts can provide immediate, eyes-on, indirect fire control to the fire support officer or battalion commander on an objective area or along main avenues into an objective area. This enables the scouts to isolate the battlefield; thereby enabling the battalion commander to conserve the majority of his line company soldiers for the fight for the objective. And by the time the main body arrives, the scouts will have had 12 to 24 hours to observe the terrain and should have an in-depth knowledge of the fire support officer's preselected targets. This gives them an advantage over troops that have only recently arrived in the area in that the scout fire missions and subsequent adjustments have a better chance of finding their targets.

**Intelligence.** The primary mission of any reconnaissance element is to provide battlefield information. Timely and accurate information enables the commander to capitalize on an enemy's weaknesses and identify windows of opportunity. The scouts' information can confirm or deny, or update, an S-2's situational template and let a commander know exactly what he's up against. The scouts can determine the accuracy of the situational template through detailed reconnaissance. The difference between what is shown on the template and actual enemy dispositions may require an entirely different course of action for the battalion and the brigade. For example, if the scouts discover a regiment where the S-2 has templated a company, the commander will probably recommend to his boss an alternate attack route or ask for more forces with which to attack his objective. This demonstrates the importance of sending 24 men into an area to identify actual dispositions instead of sending 700 men to attack an objective with nothing more than an estimated situational template.

**Command and Control.** More often than not, the terrain in Korea hinders FM communications between forces. For example, two units separated by less than

**MISSION ESSENTIAL TASK LIST**

| INDIVIDUAL/COLLECTIVE TASK | FM | TASK NUMBER |
|---|---|---|
| Route reconnaissance | 7-92 | 7-3-1059 |
| Area reconnaissance | 7-92 | 7-3/4-1042 |
| Establish OP/Perform surveillance | 7-92 | 7-3-1069 |
| Conduct link-up | 7-8 | 7-3/4-1064 |
| Employ fire support | 7-8 | 7-3-1006 |
| Establish communications relay | 7-8 | 113-571-1016* |

*Related task. Execute according to the commander's intent.

**SAMPLE TRAINING SCHEDULE**

| WEEK | DAY 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1 | ZERO/ QUALIFY WEAPONS | TA-50 PLT EQUIP INSPECTIONS | METL/ SOP CLASSES | THREAT TRAINING | THREAT TRAINING |
| 2 | SOP REHEARSALS | STX | STX | STX | THREAT TRAINING |
| 3 | ALERT/ PLANNING — DEPLOY | | FTX | REDEPLOY | REFIT |
| 4 | ALERT/ PLANNING — DEPLOY | FTX | LIVE FIRE CQB | LIVE FIRE IAD | REFIT |

Figure 1

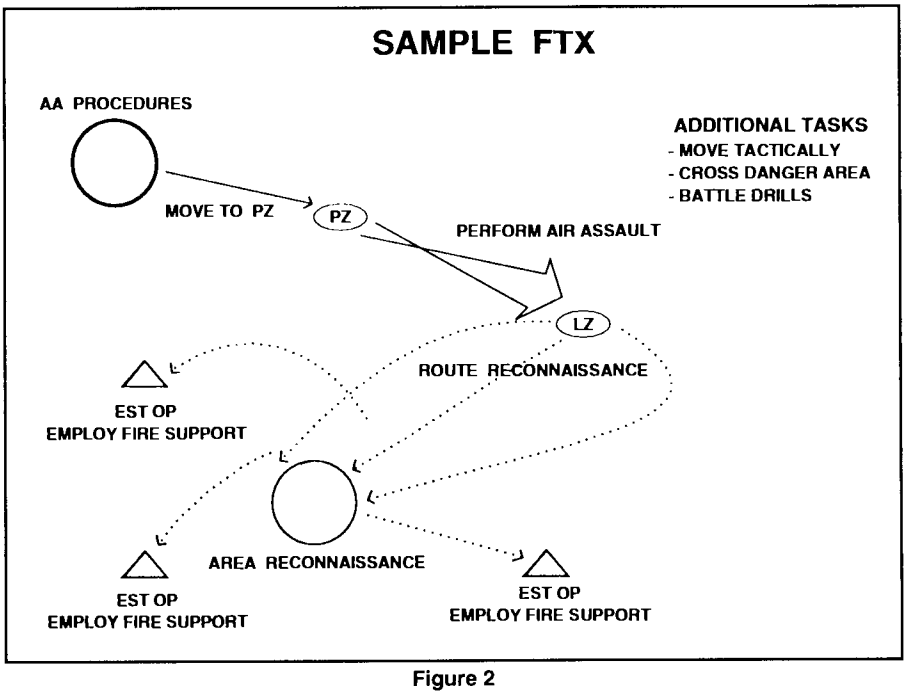



Figure 2

a kilometer may find themselves unable to communicate unless one or the other occupies the high ground. On one particular mission in 1993, a battalion had just conducted an air assault and formed for an infiltration to attack an objective. The battalion commander landed with the battalion main body and attempted to communicate with the brigade commander in a UH-60 flying several kilometers away. The brigade commander continually called the battalion commander for situational reports, but neither commander could reach the other directly. The scout platoon command post, which could hear both commanders, acted as a relay station until the battalion commander moved to a higher elevation along the infiltration route. The scout command post also relayed communications between the company commanders and the battalion commander, since the battalion had three separate infiltration routes to the objective. In this capacity, the scouts provided the means of instant communications between all maneuver commanders in the area, enabling the commanders at all levels to maintain control of their units.

As demonstrated in the analysis of these BOSs, the scouts can greatly influence the outcome of an operation. By planning and training to execute certain critical tasks, they can efficiently and accurately help the battalion and brigade commanders develop the first 24 hours of the battle plan. Success in these first 24 hours directly determines a mission's overall success.

A recommended approach to light scout platoon preparations for operations in Korea begins with a suggested Mission Essential Task List (see table), a one-month (20-day) training calendar (Figure 1), and a sample field training exercise (FTX) (Figure 2) and also includes live-fire training and threat training.

The live-fire training consists of close quarter battle (CQB) exercises and immediate action drills (IADs). CQB live-fire training develops individual reflexive firing techniques. One soldier tactically travels down range inside a fire lane. Targets pop up at various distances and angles with respect to the firer. This training enables the soldier to develop the ability and confidence to acquire and engage targets while moving tactically. Each team member should go through this exercise, but it is especially helpful to the team point man.

IAD training accomplishes the same objectives except that it develops the team instead of the individual. The training calls for the team to conduct live-fire maneuver drills in accordance with ARTEP 7-8 Drill, *The Infantry Rifle Platoon and Squad.* The exercises should include the following drills: *React to contact, Break contact,* and *React to a near and a far ambush.*

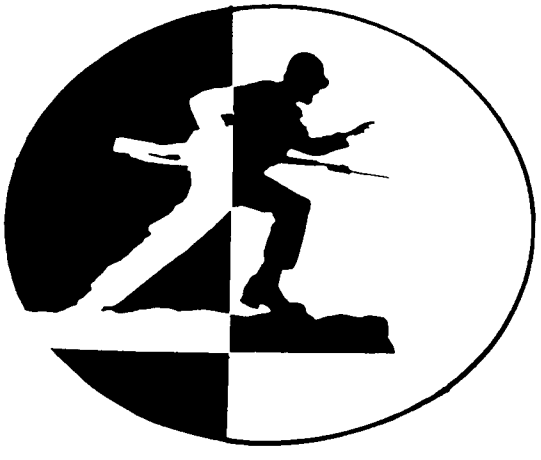
The terrain for these exercises should mirror that of Korea—narrow ridgelines and steep uphill and downhill routes. The immediate action drill live-fire training gives the team and individual members the confidence to maneuver in any type of terrain without worrying about the abilities and intentions of the other members.

Threat training acquaints the soldiers with the potential enemy. An unclassified guide to the North Korean threat produced by the 2d Infantry Division G-2 covers dispositions, forms of maneuver and doctrinal templates, unit structures, and equipment. (Any service member can get copies of the guide by asking his unit intelligence section to request them from the 2d Division G-2.) Practical exercises should follow any form of threat classes. Threat weapons familiarization and firing, slide shows, and model identification all provide excellent ways to reinforce classroom instruction.

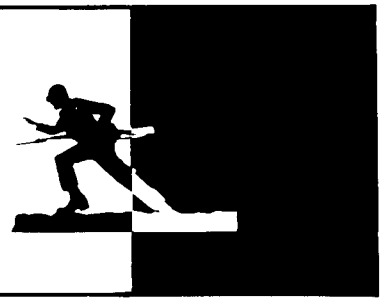
Given the U.S. Army's relationship to the situation in Korea, it would benefit every American soldier to gain an understanding of the circumstances under which he may be called upon to fight. Leaders must have the foresight to develop solid training plans that address the challenges of the potential battlefield in Korea.

Leaders at all levels can use these recommendations as they apply to their units. Light scouts are a valuable asset, and can give the commander the edge he will need to meet and defeat even the most determined of enemies.

**Captain Guy B. Parmeter** was assigned as a rifle platoon leader, a scout platoon leader, and long-range surveillance company executive officer with the 2d Infantry Division in Korea. He subsequently served in the 3d Infantry and is now assigned to the Military District of Washington. He is a 1991 graduate of the United States Military Academy.



# BOOK REVIEWS



***The Regiment: Let the Citizens Bear Arms!* By Harry M. Kemp. Nortex Press, 1990. 395 Pages. $24.95.** Reviewed by Lieutenant Colonel Albert N. Garland, U.S. Army, Retired.

This is a fine battle history of one of the 196 combat infantry regiments that served in the European Theater of Operations during World War II—the 109th Infantry Regiment.

A National Guard regiment from Pennsylvania, the 109th was one of three organic infantry regiments of the 28th Infantry Division, officially nicknamed the "Keystone" division, unofficially referred to as the "Bloody Bucket" division. (Both nicknames refer to the division's shoulder insignia; the subtitle of this book is the regiment's motto.)

Harry Kemp served with the 109th throughout its war years, first as an enlisted man, later as an officer. In fact, his service with the regiment dated from January 1937, when he enlisted in Company M, a heavy weapons company. He remained with that company—commanding it when the 109th went into battle for the first time in Normandy in early August 1944—until early February 1945 when he was promoted to major and assumed command of the regiment's 2d Battalion.

Kemp remained in the Army after the war, transferred to the Regular Army, commanded an infantry battalion during the Korean War, and served in various other command and staff positions before retiring in 1971.

Despite his transfer to the Regular Army, Kemp is a staunch defender of the National Guardsmen who served in the 109th and the division during World War II. A few, like him, served with the regiment throughout and were noted for their bravery and leadership abilities. At one or two points in his book, Kemp can't resist taking a dig at Regular Army officers.

He traces the regiment's activities from its pre-World War II days through the hectic days of federalization in 1941, its training at various places in the United States, its move overseas to Wales in late 1943 and then on to England in 1944, its combat experiences, and finally its time as an occupation force and eventual return to the U.S., and its demobilization in late 1945.

Based on his personal experiences, interviews with survivors from the regiment, and official and unofficial records, Kemp's battle narratives are well done. For me, at least, they brought back many memories, since I commanded an infantry rifle company in Europe in 1944 and 1945. I was particularly pleased to see him recognize the regiment's three heavy weapons companies, units often overlooked by other writers. I do wish he had moved his sketch maps into the appropriate chapters instead of grouping them at the back of the book.

The 28th Division spent a total of 196 days in combat and suffered 24,840 battle and nonbattle casualties, many of them in the hell of the Huertgen Forest and the ice and snow of the Bulge. Yet only one soldier from the division was awarded the Medal of Honor—Technical Sergeant Francis J. Clark, Company K, 109th Regiment. Kemp places the blame for this neglect mainly on Major General Norman D. Cota, who commanded the division during most of its combat days. As Kemp puts it, "...Major General Cota, and the Division Awards Board (mostly, if not all, noncombat types) believed that the risks of death in war were all-pervasive and those who lost the gamble were just statistics regardless of how they performed as individuals."

Kemp is also critical of Cota and other senior commanders, up to and including General Dwight Eisenhower, for the Huertgen Forest debacle that cost the regiment and division so dearly.

Of considerable interest is Kemp's account of the actions, trial, and execution of Private Edward (Eddie) Donald Slovik, one of 14 replacements assigned to the Regiment's Company G late on the evening of 25 August 1944. Slovik was gone before daylight, an apparent deserter. Eventually found, he was tried and sentenced to death "by musketry," and the sentence was carried out by a firing squad from the 109th on 31 January 1945. Here again, I wish Kemp had put the Slovik story all in one place, possibly as an appendix, instead of scattering it throughout the book.

Kemp notes that during the war, 2,864 members of the U.S. armed forces were tried for desertion, and 49 received death sentences, but only Private Slovik was executed. (The 95 other U.S. executions of military personnel in the European Theater were for "heinous crimes," not for desertion.)

The book does contain a few minor errors, but they are harmless. For example, we did use smokeless powder in our ammunition (pages 13-14), and the M1 rifle had an eight-round clip, not a five-round. And it was P-47 fighter-bombers, not P-45s (page 280).

I recommend this book to infantrymen everywhere as a fine example of men in battle. It also offers great examples of the way a unit goes about the business of fighting a war despite the loss of key leaders and combat-experienced soldiers. The 109th's strength turned over several times during the course of its fighting days. The way the survivors met the challenge and went on to win battles is a story in itself, a grand story that men like Kemp can point to with pride.

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***Secret Army, Secret War: Washington's Tragic Spy Operation in North Vietnam.* By Sedgwick Tourison. Naval Institute Press, 1995. 389 Pages. $32.95.**

***Tet 1968: Understanding the Surprise.* By Ronnie E. Ford. Frank Cass & Company (distributed by International Specialized Book Services, 5804 N.E. Hassalo Street, Portland, OR 97213-3644), 1995. 218 Pages. $16.00, Softbound.** Reviewed by Dr. Joe P. Dunn, Converse College.

These two books, by authors whose knowledge of the language allows them to use Vietnamese sources, are important early works as the veil begins to lift on clandestine operations and intelligence successes and failures against Hanoi. The first focuses heavily on the controversial intelligence activities of the Gulf of Tonkin event in 1964, the other on the equally controversial intelligence questions surrounding the Tet Offensive of 1968.

"Wick" Tourison spent eight years in Southeast Asia, where he became the U.S. Army's first interrogation warrant officer. He later served with the Defense Intelligence Agency on prisoner of war/missing in action (POW/MIA) issues and finally on the staff of the Senate Select Committee on the subject.

His first book, *Talking with Victor Charlie* (1991) discussed interrogation operations in Vietnam. *Secret Army, Secret War* relies on

interrogations and interviews to recount a more tragic saga. The Central Intelligence Agency (CIA) began insertions of South Vietnamese commandos into the North in 1961, and by 1964 judged that most of the operatives were killed, captured, or under Hanoi's control. Still, a renewed effort begun in 1964 by the Studies and Operations Group, Military Assistance Command Vietnam (MACV), met with no greater success. By 1968 more than 500 agents had been lost in the North. The families of the commandos were told that they were dead, yet 20 years later more than 300 of them were released from Hanoi's prisons.

This book is the story of the ill-fated South Vietnamese, some of whom spent 30 years in captivity. It reveals the poor conceptualization, planning, and conduct of the operations, and the indifference, if not perfidy, of U.S. intelligence officials who continued to send agents to their tragic plight long after it was known that the program had been compromised.

The book also raises questions about the real meaning of the Gulf of Tonkin incident, including whether the U.S. may have been engaged with Chinese PT boats rather than North Vietnamese. The author asserts that the pre-1964 operations were to protect CIA activities in Laos and had little to do with North Vietnam itself. Finally, the account treats the commandos' captivity experiences and the United States' record of distancing itself from its former allied operatives, who paid heavily for their association with U.S. covert activities.

The book will raise some degree of controversy, and the claims are difficult to verify, but it is an interesting read in a part of the story of the Vietnam war that is just beginning to open up.

While Tourison reveals a covered-up tragedy, U.S. Army military intelligence officer Ronnie E. Ford challenges the argument that the U.S. experienced a disastrous intelligence fiasco during Tet 1968. He uses newly available North Vietnamese documents to reinterpret Hanoi's military strategy and the so-called "intelligence surprise" of the Tet Offensive.

Ford contends that the U.S. intelligence was aware that the North Vietnamese planned a major offensive during Tet and also that the American concentration on Khe Sanh was not ill-placed. Westmoreland's pounding of the People's Army of Vietnam there prevented them from initiating a second wave into the South. The U.S. intelligence failure was limited to the fact that MACV misinterpreted the extent of the attack, its level of coordination, and its purpose. Also, they expected the offensive to begin after the Tet holidays. But they were not entirely incorrect since Hanoi's original date was pushed forward when Westmoreland refused to extend a Tet truce. The change caught both the U.S. and National Liberation Front forces by surprise and resulted in significant military failures on both sides.

Ford concludes that the intelligence failure that did occur was created by the diffusion of military, political, and diplomatic intelligence in Vietnam; bureaucratic infighting, especially between MACV and CIA analysts; and undue political pressure to show quantitative progress in the war. The study is a very useful addition to the literature.

Neither of these books is the definitive word; both barely scratch the surface of larger issues. But they are intriguing works that raise important questions and whet our appetite for further opening of the records on important subjects.

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***Mobile Guerrilla Force: With the Special Forces in War Zone D.*** **By James C. Donahue. Special Warfare Series. Naval Institute Press, 1996. 205 Pages. $28.95.** Reviewed by Michael F. Dilley, Davidsonville, Maryland.

The mission codenamed Blackjack-31 is very reminiscent of the one assigned to Merrill's Marauders in Burma. The plan was to send a Special Forces A-team and more than 200 Cambodians into an area controlled by the Viet Cong to conduct guerrilla operations for at least a month, being resupplied by air every four or five days.

When he first heard the plan, Captain James Gritz told his commander it wouldn't work, that the force would be discovered and wiped out within a few days. Ten days later, Gritz was given the mission and told to recruit his force and make the plan work. This is the story of that mission, told by one of its participants.

Author James Donahue was the assistant platoon leader of 3d Platoon on Blackjack-31. The mission was significant because it took the war to the enemy on his terms, that of a guerrilla operating deep in "Indian country," hitting and running, then fading back into another part of the vast, almost endless forest of the Viet Cong "secret zone" known as War Zone D, where U.S forces had not operated before.

Just as Gritz's force was completing its training and preparing for insertion, a U-2 reconnaissance plane crashed in the jungle south of Song Be, and someone had to recover its classified "black box" device. Colonel Francis Kelly, commander of the 5th Special Forces Group, decided to send Blackjack-31, and his trust was well-placed. Gritz and his company found the device in four days—an auspicious beginning for their mission.

In early January 1967, the force entered War Zone D to establish ambushes, booby-trap base camps, reconnoiter specific areas, check out a former French fort to see whether it was suitable for a Special Forces camp, and to conduct bomb damage assessments of air strikes it called in. During the mission, one of the Special Forces soldiers received a direct commission; Gritz held an appropriate ceremony in the jungle, complete with a small flag, a pocket Bible, and the oath of office.

Donahue writes about this mission in a straightforward, first-person account, telling how it unfolded from the viewpoint of 3d Platoon. To keep the reader informed of the progress of other elements when the entire company is not together, he uses radio reports of their activity to "Swamp Fox," Captain Gritz. This is an interesting and effective device, one that makes the reader feel he is there with the 3d Platoon, moving through the humid, triple-canopy jungle, catching snatches of conversation over the radio hand-set. Donahue tells what he sees, hears, tastes, feels, and smells, whether he is on patrol, crawling in a small tunnel pushing a dead VC body in front of him, establishing a security force for a river crossing, or ambushing an enemy base camp.

This book is sweaty, gritty, yet human. The men of Blackjack-31 are real and alive, eating, sleeping, and fighting. The book is hard to put down. I highly recommend it for those who will plan operations and especially for those who will lead others into combat.

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***Divided Waters: The Naval History of the Civil War.*** **By Ivan Musicant. HarperCollins, 1995. 473 Pages. $30.00.** Reviewed by Dr. Charles E. White, Infantry School Historian.

Without question, the United States Navy played a pivotal role in the preservation of the Union during the U.S. Civil War. The Navy had a threefold mission: Blockade the Confederate coast and capture its ports; support the Army in riverine and amphibious operations; and protect seagoing commerce from Confederate raiders. While the Navy accomplished all of its missions during the war, its story remained largely untold until now.

Ivan Musicant's *Divided Waters* is a comprehensive study of the U.S. Navy during one of the most challenging periods of its history. On the eve of the American Civil War, the Navy was a "drowsy, moth-eaten organization." Its institutional memory reached

back to its last great endeavor, the War of 1812, during which several senior captains of 1861 had fought as mere child midshipmen. Navy leadership in 1861 was "largely uninspiring," with no admirals (an aristocratic title shunned by a service born of the Revolution), and "virtually devoid of promotion opportunities." To make matters worse, one-fifth of its officers had left to organize and command the new enemy, the navy of the Confederate States of America.

Four horrific years later, at the end of the war, the U.S. Navy had become "arguably the most powerful sea force in the world." In 1865 it totaled 670 ships, a number not remotely seen again until the massive buildup programs of World Wars I and II. Led by an impressive fleet of turreted, ironclad monitors (equipped with 8-inch rifles and 15-inch smoothbore cannon), the Navy in 1865 was "unmatched afloat." In 1861 it had 1,500 officers and 7,500 enlisted men. By 1865 these numbers had increased sevenfold, the rank structure had been expanded, and eight admirals headed the Navy Register.

Foremost among the men who transformed the Navy is Gideon Welles, who served as Secretary of the Navy for eight years. Welles was a brilliant man, a ruthless administrator, a good strategist, and an excellent judge of talent. It was Welles who broke with tradition and began to buy the best for the Navy. He established the tradition of feeding sailors fresh, wholesome food. He also began the practice of comparative testing before spending large sums for clothing and equipment. Additionally, he demoted clerks who could not do their arithmetic, and demanded regular, accurate reports and audits from the department. More than any other person, Gideon Welles was the driving force behind the modern U.S. Navy.

This book is a captivating history of the Navy during the Civil War. Musicant, recipient of the Samuel Eliot Morison Award for Naval Literature, recounts the Navy's epic struggle in an era that changed forever the face of naval warfare. He draws upon personal diaries, letters, and combat journals to bring his story to life. No longer will the Navy's contribution to preserving the Union during the Civil War be a mere footnote in history.

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***Clinton and Post-Cold War Defense.* Edited by Stephen J. Cimbala. Praeger, 1996. 216 Pages. $55.00.** Reviewed by Colonel George G. Eddy, U.S. Army, Retired.

In this book, Stephen Cimbala will surely raise some eyebrows among military personnel when he writes that "Clinton's intellectual failings in defense were not the product of ideological leftism, as critics mistakenly have charged, but of inexperience in setting priorities and in picking spots." The only one here who is mistaken is Cimbala, for the President's written and spoken words leave little doubt about his perceptions concerning the role of the military.

Cimbala contends that "Clinton is hardly on the left-liberal end of the security spectrum," and further says, "That he is so perceived among many military officers may tell more about the conservative drift of the American military, since the advent of the all-volunteer force, than it does about Clinton's alleged anti-militarism." Readers of this book may conclude that Cimbala is somewhat less than totally unbiased.

For those who want to chance a look at them, however, some of the book's essays are worthwhile. With budget reductions, the ability to respond quickly and effectively in the expected unconventional warfare environment ahead (witness Somalia, Haiti, and now Bosnia) will be seriously challenged if military readiness is predicated upon preparing for the type of campaigns that characterized the World War II European conflict, and most recently the Gulf War, with massed formations of tanks and artillery.

In view of all this, authors Don M. Snider and Andrew J. Kelly note in their essay "Causes for Concern," "The administration's failure to properly address the interrelationships between strategy, forces, and budgets threatens to produce the worst possible tradeoffs in both dimensions—a force that is unready today and that will enter the twenty-first century unready for the future." In basic agreement, Sam C. Sarkesian concludes that the U.S. remains ill-disposed and ill-prepared to respond to unconventional conflicts. He believes that the United States should not be involved in operations other than war "unless the issues are clear and the political and military objectives well defined, and there is a certainty that the U.S. will win."

Given the clearly biased viewpoint of the editor, and despite sensible arguments from some of the authors, prospective readers should find a worthwhile book, such as *America's Armed Forces: A Handbook of Current and Future Capabilities,* edited by Sam Sarkesian and Robert Connor, Jr. (Greenwood Press, 1996; reviewed in March-April 1996 issue of INFANTRY).

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***Undaunted Courage: Meriwether Lewis, Thomas Jefferson, and the Opening of the American West.* By Stephen Ambrose. Simon & Schuster, 1995. 511 Pages. $27.50.** Reviewed by Colonel Cole C. Kingseed, U.S. Army.

The Lewis and Clark expedition was the greatest expedition of discovery in American history. Exploring the uncharted regions of the newly acquired Louisiana Purchase, Meriwether Lewis and William Clark, together with their patron, President Thomas Jefferson, made an invaluable contribution to the development of the American West. *Undaunted Courage* brings Lewis, the captain of the expedition, to life in a brilliantly told narrative that confirms Ambrose as this country's premier biographer.

The unsung hero of this book is Thomas Jefferson, whom Ambrose calls the greatest empire builder of all. In an age of imperialism, his mind encompassed the North American continent. Concerned about foreign encroachments upon the unexplored wilderness, Jefferson summoned Lewis, his private secretary, and commissioned him to command an expedition to the Pacific. His specific instructions were to explore the Missouri River and its tributaries and to determine the "most direct and practicable water communication across this continent for the purposes of commerce."

Lewis's first task was to ask fellow officer William Clark to join him in this enterprise, and Clark accepted. Lewis left Pittsburgh on 31 August 1803, and when Clark joined him in mid-October, the most famous partnership in American exploration began. Ambrose speculates what it must have been like when the two adventurers shook hands and discussed the plan to explore the continent. Unfortunately, there is no record or description of that meeting.

From the spring of 1804 until their return to St. Louis on 22 September 1806, Lewis and Clark explored the West. They brought back a treasure of scientific information and introduced new approaches to exploration and systematic record-keeping. They were the first to explore the vast expanse of the north central plains and the Pacific Northwest from an easterly direction.

For Lewis, however, the expedition also brought disappointment. He had failed to find an all-water route across the continent; there was no Northwest Passage. Additionally, many Indian tribes, notably the Nez Perce and the Sioux, remained enemies of the United States. Moreover, Lewis was not up to the task of publishing his journal, nor was he particularly adroit in the administration of the Territory of Louisiana, of which he was appointed governor in March 1807.

His remaining years brought none of the success and fame that had accompanied the

expedition. Malaria, coupled with deep depression, left him in misery. On 11 October 1809, after several failed attempts, he committed suicide. In Jefferson's view, Lewis's death had deprived his country of one of her most valued citizens, and it was left to others to publish the journals from the expedition.

The disillusionment of Lewis's final years and his premature demise should in no way detract from his great achievement. Inspired by Jefferson, he had filled in the broad outlines of the previously uncharted northwestern part of the continental United States. Although he may have regarded his expedition as a failure during his lifetime, by the end of the century his dream of continental empire had been fulfilled. To Stephen Ambrose, Meriwether Lewis remains the greatest of all American explorers and in the top rank of the world's most adventurous.

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***This Terrible Sound: The Battle of Chickamauga.* By Peter Cozzens. University of Illinois Press, 1992. 675 Pages. $39.95.**

***Chickamauga and Chattanooga: The Battles That Doomed the Confederacy.* By John Bowers. HarperCollins, 1994. $28.00.**

Reviewed by Major Don Rightmyer, U.S. Air Force, Retired.

The major two-day battle of Chickamauga—fought in August 1863 along the northern Georgia creek of the same name—and the associated battle at Chattanooga have garnered recent attention from two Civil War historians.

Peter Cozzens' *This Terrible Sound* is especially noteworthy because it is the first comprehensive work ever published on that battle and is likely to hold that distinction for many years to come. The only previous work of any note is Glenn Tucker's *Chickamauga: Bloody Battle in the West* (Bobbs-Merrill, 1961).

Cozzens, a State Department foreign service officer, received a great deal of critical acclaim for his first Civil War history on the battle of Stones River—*No Better Place to Die* (University of Illinois Press, 1994; reviewed in INFANTRY, July-August 1995). This current work is an even more worthwhile historical effort.

Cozzens describes in detail the numerous unit movements and actions between the armies of Braxton Bragg and William Rosecrans in the dense forests of Georgia. During the night after an arduous first day of battle, James Longstreet's corps from Robert E. Lee's Virginia army arrived to aid in Bragg's continued efforts against the Northern army. The second day's conflict ended in a Northern rout and would have resulted in a complete Union disaster except for General George Thomas's stand at Snodgrass Hill, which earned him fame as the "Rock of Chickamauga."

The Union army retraced its steps to Chattanooga after the defeat and soon found itself under siege on the banks of the Tennessee River. Rosecrans was soon replaced by Ulysses Grant, who eventually lifted the siege and led his army to victory in the battles of Lookout Mountain and Missionary Ridge.

John Bowers's coverage of the two battles in *Chickamauga and Chattanooga* is acceptable, although his narrative is somewhat superficial in details. This shorter work would serve as an excellent overview of the Chickamauga-Chattanooga campaign and provide the background for more detailed reading on the individual battles. Cozzens' book is a major Civil War history, and anything else pales by comparison.

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**RECENT AND RECOMMENDED**

***Getting It Right: American Military Reforms After Vietnam to the Gulf War and Beyond.* By James F. Dunnigan and Raymond M. Macedonia. William Morrow, 1995. 320 Pages. $23.00.**

***Barons of the Sky: From Early Flight to Strategic Warfare.* By Wayne Biddle. Simon and Schuster, 1991. 366 Pages. $22.95.**

***Fighting for Air: In the Trenches with Television News.* By Liz Trotta. Simon and Schuster, 1991. $22.95.**

***The Commandos: The Inside Story of America's Secret Soldiers.* By Douglas C. Waller. Originally published by Simon & Schuster, 1994. Dell Publishing, 1995. 469 Pages. $5.50, Softbound.**

***Incredible Victory: The Battle of Midway.* By Walter Lord. Published in hardcover by Harper & Row, 1987. Harper Perennial, 1995. 331 Pages. $12.00, Softbound.**

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***Chickamauga and Chattanooga: The Battles that Doomed the Confederacy.* By John Bowers. Originally published by HarperCollins, 1994. Avon Books, 1995. 266 Pages. $12.50, Softbound.**

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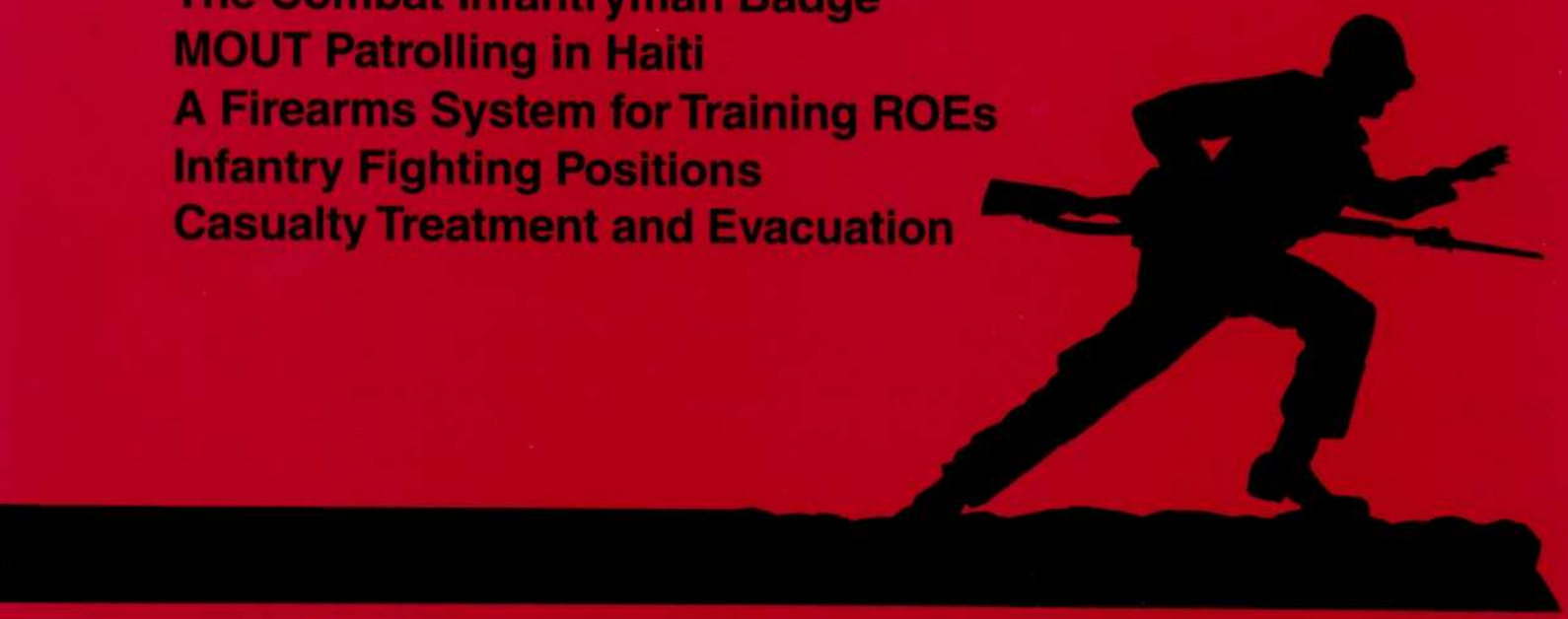

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