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Infantry

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DEPARTMENTS

FRONT COVER "Loading Troops" Vietnam 1966.
By Second Lieutenant Augustine Acuna

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Secretary of the Army

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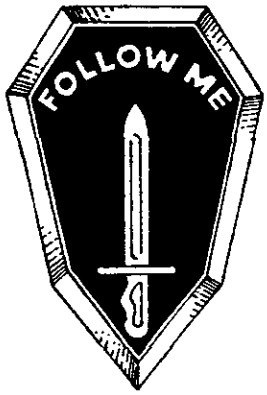

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Commandant's NOTE

MAJOR GENERAL JERRY A. WHITE Chief of Infantry

BOLD SHIFT: Strength in Reserve

In my previous notes in INFANTRY, I have talked about training and materiel improvement initiatives designed to enhance the mobility, lethality, and survivability of early deploying light forces. Such units are essential if we are to establish a credible military presence early enough to deter or counter an aggressor.

One salient lesson of the Gulf War is that putting forces on the ground early demonstrates national resolve, causes the aggressor to hesitate, and provides time for the insertion of heavy mechanized follow-on units to conduct effective ground operations against the enemy's main strength.

This issue of INFANTRY contains two articles that relate to such heavy mechanized forces. One is a company commander's account of his preparations for leading his unit in the attack during DESERT STORM; the other discusses the organization of combat service support assets in a heavy combined arms task force.

In this issue, I want to bring you up to date on a unique training program for Reserve Component units and tell you what the United States Army Infantry School is doing to improve the training of the mechanized force.

Since August 1991, the U.S. Army Training and Doctrine Command has been working on a program designed to improve and sustain the training and the overall readiness of both Reserve Component (RC) and Active Army units. This program is aptly named BOLD SHIFT—because of the innovative approach it entails and because of the shift in emphasis that now offers RC units better training opportunities.

Recent changes throughout the world have redefined the strategic climate in which we live. The threat posed by the former Soviet Union and its surrogates has been largely supplanted by a number of potential aggressors that have smaller, yet equally sophisticated, armed forces which threaten the stability of our allies and hence that of the world economy. Since we no longer can afford to pre-position units close to all potential trouble spots, our force of the next century will have to be highly mobile, decisively lethal, and readily sustainable, while at the same time significantly smaller than in the past.

The importance of realizing the full potential of our force is greater than ever, and it is the leadership of that force that will make the difference when we once again have to commit U.S. soldiers in support of our national interests. BOLD SHIFT specifically addresses leadership training as one of its milestones in strengthening the total force.

DESERT STORM taught us that it is unlikely that we will again have the luxury of a long build-up period before committing the force against an aggressor. Another goal of BOLD SHIFT, therefore, is to reduce the number of training days a reserve component unit will require before being deployed. Training leaders to standard is demanding and requires a great deal of time and resources; it is therefore beyond the capabilities of many RC units, given the limited training time and often austere training resources available to them. But we can conduct this training at Fort Benning, where the subject matter expertise, the facilities, and an environment free of distractions are all readily available.

During Fiscal Year 1992, the Infantry Center has conducted two 14-day training rotations for selected mechanized RC units, and three more such rotations are planned for FY 1993. Beginning in July, the Infantry School's Ranger Training Brigade and the 29th Infantry Regiment hosted two pilot BOLD SHIFT rotations, training Army National Guard leaders from

Texas, Oregon, Alabama, South Carolina, and Washington.

Company E, 4th Ranger Training Battalion, presented the Infantry Leader Course (ILC), which trained unit leaders on current doctrinal standards for individual tasks, taught them how to conduct training to standard at their home stations, and provided them an environment that promoted cohesion. The instructors tailored the ILC to address specific training requirements of the designated RC units.

The Ranger company—working closely with Company C and the Bradley Instructor Company, 1st Battalion, 29th Infantry—conducted training on both mounted and dismounted tasks. Drawing heavily upon the experiences of mechanized units in DESERT SHIELD/DESERT STORM, the two units developed a field training location reminiscent of the tactical assembly areas occupied by units deployed to the Arabian Gulf during the winter of 1991-1992.

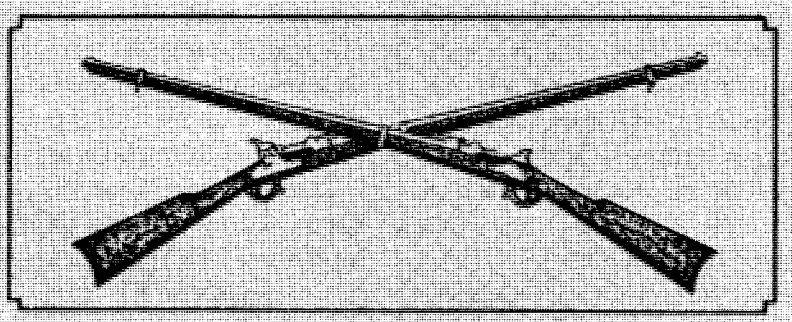
The units in training bivouack at Eelbeck Range, which is approximately 20 road miles from the Main Post cantonment area. This site was selected because it allowed the units maximum training time on the best terrain available, reduced the time required for moving to and from billets, and shielded them from distractions.

Each day of training builds on the previous day's instruction, culminating in a student-led situational training exercise (STX) at the end of each phase. Collective tasks of particular relevance to the mechanized infantry community include occupation of an assembly area, vehicle maintenance operations, planning and conduct of a tactical road march, tactical mounted/dismounted movement, overwatch/support by fire, assault, consolidation/reorganization on the objective, and mount/dismount, as well as all squad and platoon mounted and dismounted battle drills.

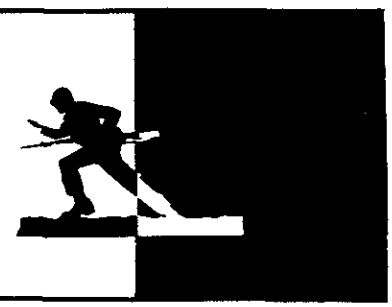
The BOLD SHIFT training methodology provides a unique opportunity for RC soldiers to train at a facility where they have access to the equipment and the subject matter expertise they need, and also to a training area where they can conduct exercises to evaluate and reinforce the skills they are learning.

While BOLD SHIFT represents an innovative approach to the training of RC units, it is based on training principles whose validity has long been established. One of those training principles is focusing training on the unit mission essential task list (METL). Additionally, the soundness of the train-the-trainer approach provides the basis for much of today's leadership instruction. Likewise, the after-action review process is an integral part of field training exercises, and indeed any training event in which immediate feedback and discussion are necessary either to correct or to reinforce a student's performance. Finally, the knowledge and skills imparted to those participating in BOLD SHIFT are taught to tasks, conditions, and standards that have been meticulously developed to meet specific needs of the students, their units, and the Army as a whole.

BOLD SHIFT is certainly an idea whose time has come. If we are to move ahead into the 21st Century and meet the diverse military challenges of a changing world, the combat readiness of our total force—Army National Guard, Army Reserve, and Active Army—is absolutely essential. Our Nation can best offer a credible deterrence to aggression if we demonstrate the ability to project a mix of light and mechanized forces against any potential aggressor. We proved that we could do this when Iraq invaded and seized territories belonging to Kuwait and Saudi Arabia. Through the implementation of such programs as BOLD SHIFT, we will remain ready to fight and win on the battlefields of the future, wherever they may be.



INFANTRY LETTERS



MORTARS AND SMART MUNITIONS

The article "Mortar Employment," by Major Christopher A. Collins in INFANTRY's March-April 1992 issue was well-written, and, as it applies to existing systems, accurate.

But there are differences between what Major Collins ascribes to mortars and what the U.S. Central Command (USCENTCOM) mission needs statement (MNS) calls for. The statement, dated 12 June 1991, calls for smart overlapping fire from all weapons. We specifically included 60mm, 81mm, and 120mm mortars in the requirement for smart munitions. We have since differentiated between guided munitions for positive identification friend or foe (IFF) and smart (fire and forget) munitions. This was done at the Infantry School's request.

The question that drove the development of the MNS was: Can the Army provide the infantryman with the same probability of hitting the target that the Navy achieved in the Tomahawk land attack cruise missile with 15-year-old technology? That hit probability, after a successful launch, was approximately .5. After reviewing the technology, the answer to the question was Yes!

What, then, are the implications? An 81mm mortar with a shaped-charge warhead can defeat about 98 percent of all the armored vehicles in the world today. If a mortar platoon can carry between 500 and 900 rounds, what opposing force can run over an infantry battalion that has a combination of guided and smart munitions consisting of half the basic load?

This combination is an important distinction because of the inherent lethality of smart munitions. A guided munition that assesses the battlefield and provides positive IFF is coupled with a pulse of more than 50 smart munitions that take advantage of the mortar's inherent high rate of fire.

This combination makes for a potent infantry battalion. The pulse of smart munitions could easily be followed by a guided munition to do battle damage assessment and another pulse of smart munitions as necessary. Guided munitions have the added benefit of being effective against dug-in positions and bunkers. A mortar round capable of penetrating armor plate, with an incendiary follow-through, could turn the inside of any bunker into a much-too-warm environment. Fire support computers based on the global positioning system (GPS) with each tube tied to GPS base laser range finders can mean first-volley (not first-round) fire for effect with devastating results against armor, infantry, or bunkers. An 81mm mortar mounted in the back of a HMMWV (high-mobility multipurpose wheeled vehicle) could provide for mobility and shoot-and-scoot that even self-propelled artillery could not match. Light infantry backed by a large-caliber, longer-range guided munition such as the non-line of sight and HIMARS, could become more than a match for opposing forces in a contingency setting.

The military technical revolution that is taking place emphasizes greater mobility and far greater lethality. Smart and guided munitions forward can go a long way toward meeting USCENTCOM's requirement to cut our deployable tonnages by half without cutting our combat capability.

EARL W. RUBRIGHT
Scientific and Technical Advisor
United States Central Command
Macdill Air Force Base, Florida

MORE ACCIDENT THAN DESIGN

The article "Advanced Combat Rifle," by Major Rodney W. Joye (INFANTRY, January-February 1992, pages 10-14) illustrates that the world's rifle ammunition has resulted more from accident than from design.

The 7.62mm NATO round is an optimized .30 caliber rifle round, but the world has generally agreed that this type of ammunition is too powerful for infantry requirements. The Russian 7.62 x 39mm and the German 7.62mm Kurz were designed more to use existing production tooling than for ballistic performance. And, of course, we have 5.56mm NATO because the Colt AR15 and M193 rounds were designed according to a light-bullet, high-velocity philosophy.

The M855 round and Major Joye's proposed 68-grain .22 bullet are attempts to optimize the 5.56mm caliber. Both of these rounds still lack performance at longer ranges. A true optimum combat rifle cartridge would be more like a 6mm bullet of 85 to 90 grains at about 2,800 feet per second from a 5.56mm NATO cartridge case. Such a round would combine light weight, minimum recoil, and reasonable ballistic performance by design.

RICHARD J. WEADER II
Framingham, Massachusetts

EDITOR'S NOTE: A cartridge such as Mr. Weader proposes already exists; it is the 6 x 47mm, developed by Remington for their Model 40XB bench-rest rifle. Although not commercially available, the round is popular among handloaders.

MILITARY HISTORY SYMPOSIUM

The U.S. Air Force Academy will hold the Fifteenth Military Symposium 14-16 October 1992. The theme of the symposium is "A Revolutionary War: Korea and the Transformation of the Postwar World."

For further information, anyone who is interested may write to me at HQ USAFA/DFH, USAF Academy, CO 80840-5701; or call (719) 472-3230.

TIMOTHY N. CASTLE
MAJ, U.S. Air Force

REUNION OF VETERANS OF THE BATTLE OF THE BULGE

Veterans of the Battle of the Bulge will hold their annual reunion in Nashville, Tennessee, 8-11 October 1992. All veterans of this memorable conflict, their families and friends, and interested history buffs are invited to attend.

Plans are also under way for a gala celebration of the 50th anniversary of the battle in December 1994.

Additional information is available from Veterans of the Battle of the Bulge, P.O. Box 1129-P, Arlington, VA 22219-2029.

NANCY C. MONSON

CHOOSE GOOD RADIO OPERATORS AND DRIVERS

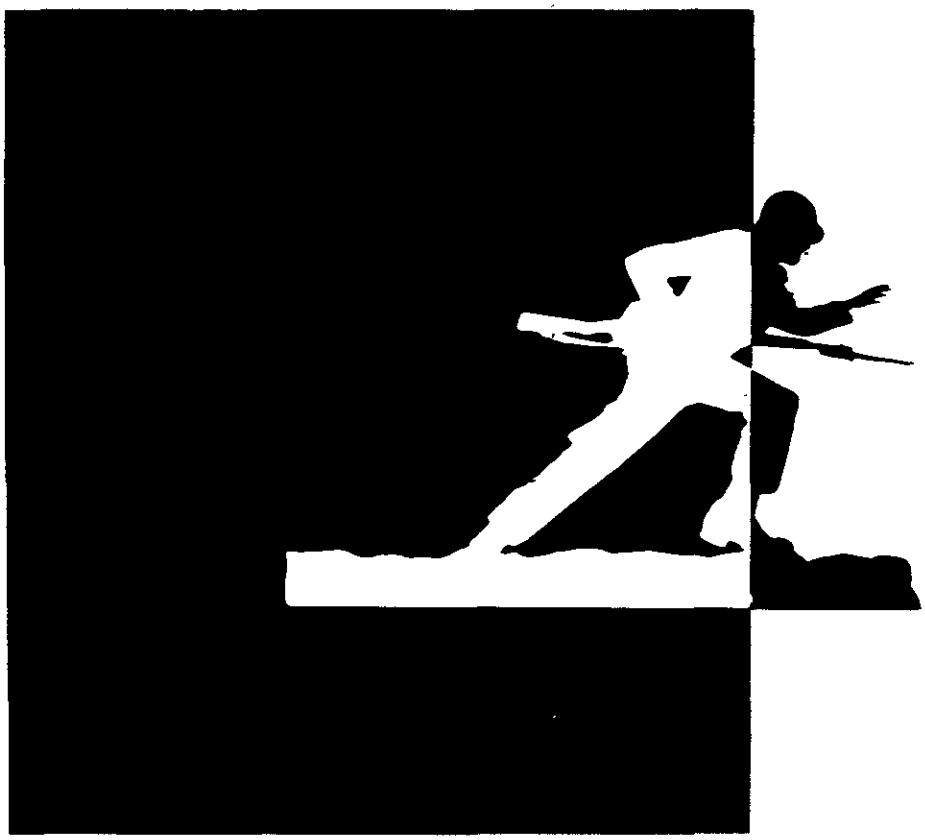
A leader, whether he leads a platoon or a battalion, should choose his radio operator and his driver from among the best soldiers available. His radio operator or driver often speaks for him, and if either fails to represent him well, effective communication goes out the window, and with it goes his ability to command.

Effective radio communication, in particular, requires competent, self-confident, authoritative speech. A leader can't do his job tied to the radio, and he can't stay awake 24 hours a day. A radio operator should make all callers feel confident that their messages have been understood and will be delivered promptly. He should also have a healthy share of common sense; a caller can quickly detect a lack of it.

Leaders too often accept without question poor performers who are assigned to them as radio operators and drivers. I did so myself as a lieutenant and as a company commander. If you're a leader, accept only good ones. And if you're in a position to provide these personnel for a higher level, provide only good ones.

A good radio operator, especially, gives a leader a distinct advantage. A poor operator gives him a handicap.

HARRY D. STUMPF
Fort McPherson, Georgia



INFANTRY NEWS

THE 2d ARMORED CAVALRY Regiment was redesignated the 2d Armored Cavalry Regiment (Light) on 1 July 1992 at Fort Lewis, Washington. The regiment, previously part of V Corps in Europe, thus became a part of I Corps.

At the same ceremony, the 199th Infantry Brigade (Motorized) was inactivated and its colors cased.

The 2d ACR was first activated 23 May 1836 as the 2d Regiment of Dragoons. It has seen action in the U.S. Civil War, the Indian campaigns, the Mexican War, the Spanish-American War, both World Wars, and Operation DESERT STORM.

A NEW LIGHT COMBAT vehicle is being developed to provide a direct-fire punch in support of light infantry formations. The XM8 armored gun system (AGS) is scheduled to replace the M551A1 (TTS) Sheridan and to equip other light armor formations beginning in December 1997.

The AGS will have a 105mm main gun that is capable of firing both U.S. and NATO 105mm tank ammunition. It will also have a 7.62mm coaxial machinegun and a commander's weapon mount that can accept either an M2 or a MK19 machinegun. The AGS will be tactically and strategically air transportable to any area of the world in a ready-to-fight configuration.

Six prototype AGS weapons will be produced by March 1994. If these prototypes meet the system requirements during testing, the contractor will be awarded a contract for low-rate initial production. Procurement is planned for 300 systems.

Fielding will begin with the 3d Battalion, 73d Armor, 82d Airborne Division. The AGS will also go to the light armor platoons and companies of the newly designated 2d Armored Cavalry Regiment (Light), at Fort Lewis.

The Infantry School point of contact is CPT Dan Carpenter, Directorate of Combat Developments, DSN 835-1078/1910 or commercial (706) 545-1078/1910.

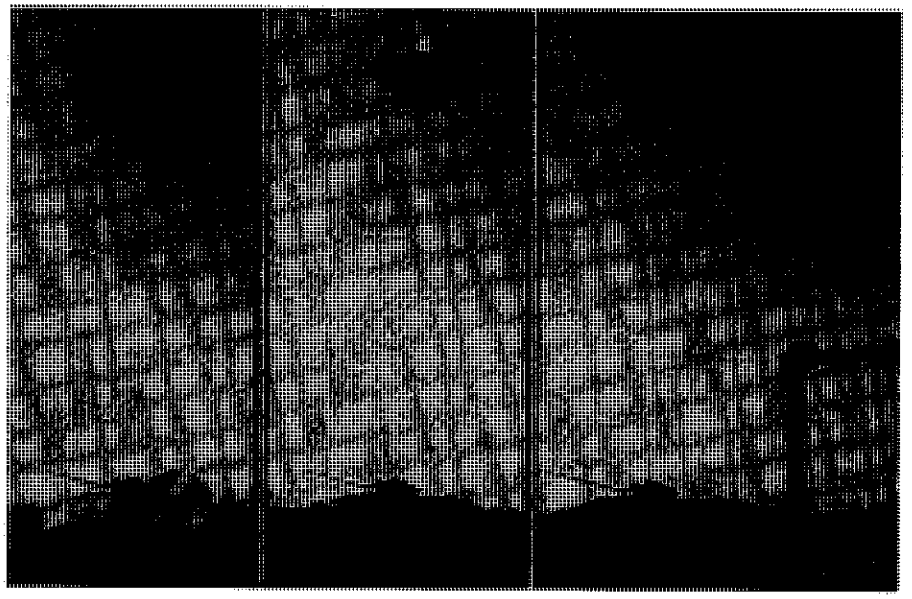
THE ARMY'S NEWEST "SMART" weapon has passed its first stand-alone test against a moving Soviet T-62 tank. The wide-area mine (WAM) used its on-board acoustic and seismic sensors to hear and feel the tank approaching. When the target got within 55 meters (some 165 feet), the mine spun toward the target, tilted 35 degrees to its launch position, and fired. The tank was moving at 15 kilometers per hour, or about nine miles per hour.

The WAM is called a smart munition because, once emplaced and activated, it acts on its own without any direct help. The WAM's memory contains the keys it needs to identify the sound and vibration patterns of most known combat vehicles.

The computer compares what is stored in its memory to the patterns it detects from a vehicle. If what it detects is a target vehicle, the system automatically locks onto the target, turns toward it, and fires a large munition (resembling a hockey puck) over it. When the weapon's downward-looking infarared sensors detect engine heat, a warhead is fired at the top of the target. Since the launch-to-strike time is so short, few moving ground targets can avoid being hit.

Future smart mines are also being designed to attack helicopters, and these will have a multiple emplacement capability.

The first WAMs should be in the hands of troops in five years.



Right photo: WAM (lower right corner) fires sublet munition at moving T-62 tank. Center: Munition is fired as sublet reaches optimum launch position. Left: Tank's fuel tanks explode from impact.

THE RESERVE COMPONENT Infantry Officer Advanced Course (RC-OAC) is changing from a three-phase course to a two-phase course, effective 1 October 1992.

Phase I, taken by correspondence, will consist of 19 hours of common-core material and 101 hours of Infantry-specific material. Phase II, a two-week resident phase, will consist of 111 hours of leadership, combined arms, and tactics instruction.

An officer will have to complete the correspondence phase before attending the resident phase. The time requirement for completing the two-phase course is two years from the date of enrollment.

For officers now working on Phase IIB of the three-phase course (the correspondence portion, branch specific) the original cut-off date was 30 September 1992. This date has been extended to 30 September 1993 for students who have completed Phases I, IIA, and III. Students who fail to meet this completion date will be disenrolled.

Students may apply for the new two-phase Reserve Component Infantry Officer Advanced Course beginning in October 1992.

THE FOLLOWING MANUALS, being prepared by the Infantry School, are scheduled for publication and distribution by November 1992:

FM 7-90, Tactical Employment of Mortars. This manual serves as the doctrinal reference for the employment of mortar squads, sections, and platoons. It contains guidance on tactics, techniques, and procedures, and guidance on how the mortar unit's fires and displacements are best planned and employed to sustain the commander's intent.

FM 21-150, Combatives. This manual contains information and guidance pertaining to rifle-bayonet fighting and hand-to-hand combat, which is divided into basic and advanced training.

FM 7-98, Operations in a Low-Intensity Conflict. This publication provides tactical-level guidance to brigade and battalion commanders and staff officers for planning, controlling, and coordinating combined arms operations in a low intensity conflict environment.

A RIFLEMAN'S BREACHING munition (RBM) program candidate has been selected by the U.S. Marine Corps—the HESH-RAW (high-explosive squash head-rifleman's assault weapon).

The RBM is intended for use in all aspects of military operations in urban terrain (MOUT). Requirements for the munition include the ability to fire it from an unmodified M16A2 rifle and an M4 carbine, to use regular ammunition, and to fire from the cover of small enclosures and from every rifle firing position. The Marines also require that the munition be as light and mobile as possible while still providing enough power to breach urban barriers.

BRADLEY CORNER

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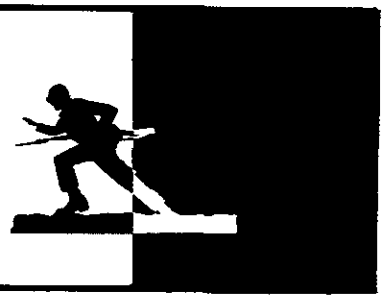
PROFESSIONAL FORUM



North Korean Infantry Battalions
Organization and Equipment

MICHAEL R. JACOBSON

EDITOR'S NOTE: This is the first article in a two-part series on the organization, equipment, and tactics of North Korean infantry battalions. This first part covers organization and equipment. The second part, which will appear in INFANTRY's November-December 1992 issue, will cover tactics.

With the decline of the Cold War with the Soviet Union, and with the defeat of Iraq during Operation DESERT STORM, North Korea has become the United States Army's primary threat. North Korea has an active army of more than one million men, the fourth largest in the world. Since North Korea has one of the most closed societies in the world, however, information about its army is limited.

If U.S. Army infantrymen are to be prepared to meet a North Korean threat, they must become familiar with the organization, equipment, and weapons of North Korea's infantry battalions.

The North Korean People's Army (NKPA) has several types of infantry battalions, as shown in Figure 1. There are more infantry battalions than any other type in the active duty force, and these serve as the organizational basis for the motorized and mechanized battalions.

The NKPA also has special operations force (SOF) units that are designated *amphibious landing*, *seaborne sniper*, or *airborne*. But these terms signify only the planned means of insertion and the associated special training; the units themselves do not differ in structure from light infantry battalions or sniper battalions. Likewise, standard infantry battalions can be inserted by air or sea, but the tactical commands have no organic lift capability.

Infantry. Each infantry division has three infantry regiments, each of which has three infantry battalions. The infantry battalion (Figure 2) has about 476 soldiers and consists of a battalion headquarters, three infantry companies, an 82mm mortar company, and an antitank platoon. The battalion headquarters includes the staff, a signal platoon, and a supply platoon.

Each infantry company has 116 personnel and consists of a company headquarters and three 37-man infantry platoons. Each platoon has a platoon headquarters and three 12-man squads.

The basic individual squad weapon is the 7.62 x 39mm Type 68 (AKM) rifle. The squad also has a 7.62x39mm Type 62 (RPD) or RPK light machinegun and two RPG-7 antitank grenade launchers. The headquarters company has three sniper rifles, and each infantry company has a sniper rifle, the M1891/30. The antitank platoon has about 25 personnel and three 82mm B-10 recoilless guns, four RPG-7s, and three or four AT-3 SAGGER manportable ATGMs (antitank guided missiles).

The battalion's indirect fire support is provided by the mortar company, which has 62 personnel and nine 82mm M1937 mortars. This company consists of a company headquarters and three platoons of three mortar squads each. Normally, the mortar company operates as an entire unit, but the platoons may also operate independently. Mortars are used to destroy personnel and obstacles and to reinforce artillery firepower. The North Koreans have more than 9,000 mortars.

Light Infantry. A light infantry battalion has about 400 soldiers and consists of a battalion headquarters and six light infantry companies. Each company has a headquarters, three or four squads, and a 60mm mortar squad with two mortars. (It is unclear whether the light infantry battalion has a platoon organization.) Light infantry squads

have rifles, light machineguns, and RPG-7s.

The NKPA has two types of light infantry battalions. The first is found in each of the 35 divisions, and the second in each of the 24 light infantry brigades. The divisional light infantry battalion is employed in company or battalion strength, while the light infantry brigade's battalions are employed in platoon strength. The light infantry battalion provides a unique combination of conventional and unconventional capabilities.

Airborne. The army has two types of airborne qualified battalions: light infantry and sniper. Some light infantry battalions of light infantry brigades are airborne qualified. The NKPA may have as many as 72 airborne trained sniper battalions, but large-scale (battalion) airborne operations are unlikely. The An-2 Colt biplane, the primary airborne delivery method, carries up to ten combat troops.

Motorized Infantry. The organization of the motorized (truck-mobile) infantry battalions (Figure 3) is similar to that of the infantry battalions, but they have organic trucks (12 long-bed or 20 short-bed) for personnel transportation. Motorized infantrymen ride trucks to a forward assembly area, dismount, and walk to the line of departure and beyond.

Mechanized Infantry. Mechanized infantry battalions are organic to mechanized infantry brigades and armored brigades. The mechanized infantry battalion (Figure 4) is organized much like the infantry battalion, but it is equipped with 45 armored personnel carriers. Each mechanized infantry battalion has about 504 personnel and consists of a battalion headquarters, three mechanized infantry companies, an 82mm self-propelled mortar company, and a self-propelled antitank platoon. Each mechanized infantry company has 110 personnel and consists of a company headquarters and three mechanized infantry platoons of 37 personnel. Each platoon has a headquarters and three 12-man squads.

The North Koreans have 4,000 APCs. The M-1973 Sinhung VTT-323 APC,

NORTH KOREAN INFANTRY BATTALIONS

	INFANTRY	LIGHT INF	MOTORIZED	MECHANIZED	SNIPER	RECON
# Personnel in Bn	476	400	506	504	NA	400
# Inf Cos in Bn	3	6	3	3	5	5
# Personnel in Inf Co	116	NA	110	110	NA	NA
# Inf Plt in Inf Co	3	NA	3	3	NA	NA
# Personnel in Inf Plt	37	NA	37	NA	NA	NA
# Inf Squads in Inf Co	9	3-4	9	9	NA	3-4
# Personnel in Inf Squad	12	NA	12	12	5-8	5-8
# Mortars x Cal in Bn	9 x 82mm	12 x 60mm	9 x 82mm	9 x 82mm	0	0
# & Type AT Wpns in AT Plt	3-4 x AT-3 3 x B-10 4 x RPG-7	0	3-4 x AT-3 3 x B-10 4 x B-10	3 x AT-3 Veh 3 x B-10 4 x RPG-7	0	0
Recon Plt	No	No	No	No	No	Yes*
# Armored Veh in Bn	0	0	0	30 x APC 9 x SP Mortars 3 x SP ATGM Veh 3 x Arm Cmd Veh	0	0
# Trucks in Bn	7-9	NA	37	15	0	0

NA - Not available.
* - Entire unit is recon.

Figure 1

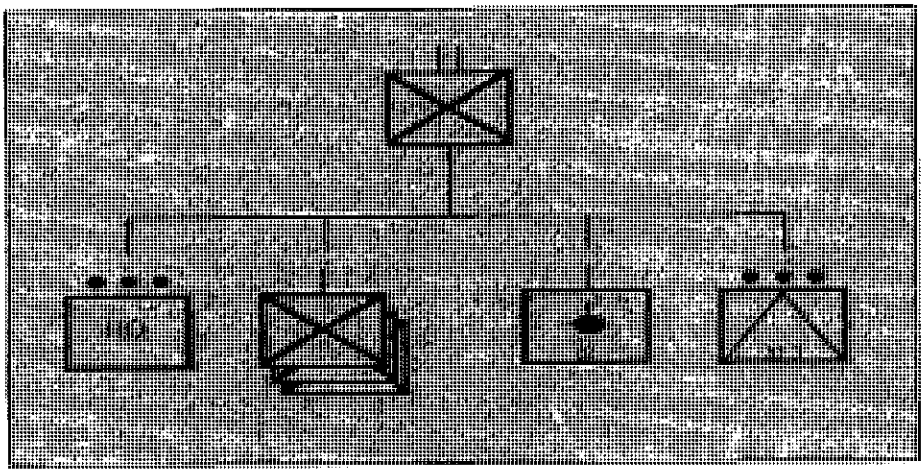


Figure 2. Infantry Battalion

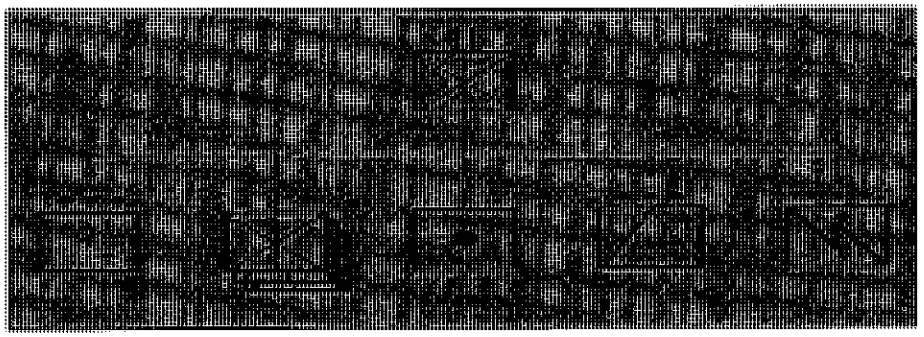


Figure 3. Motorized Infantry Battalion

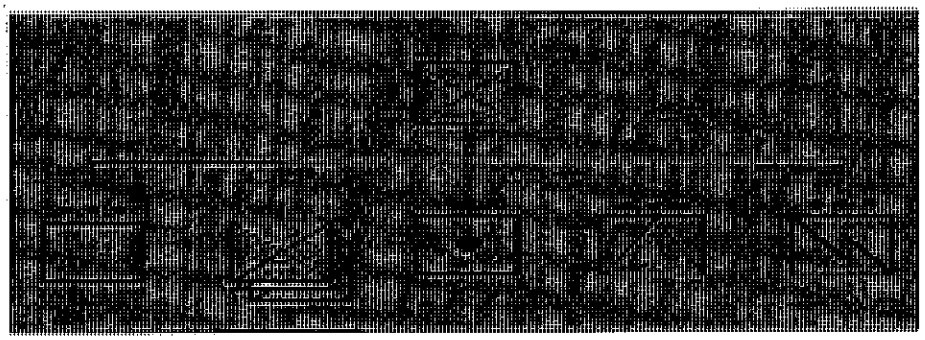


Figure 4. Mechanized Infantry Battalion

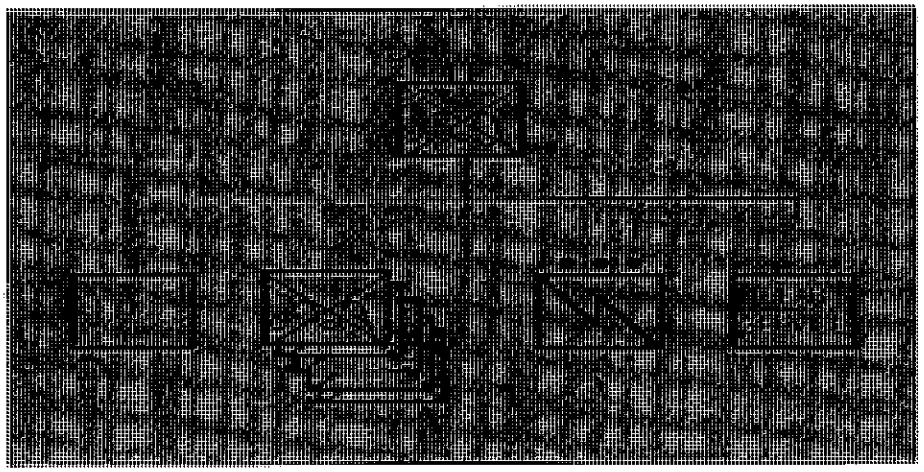


Figure 5. Seaborne Sniper Battalion

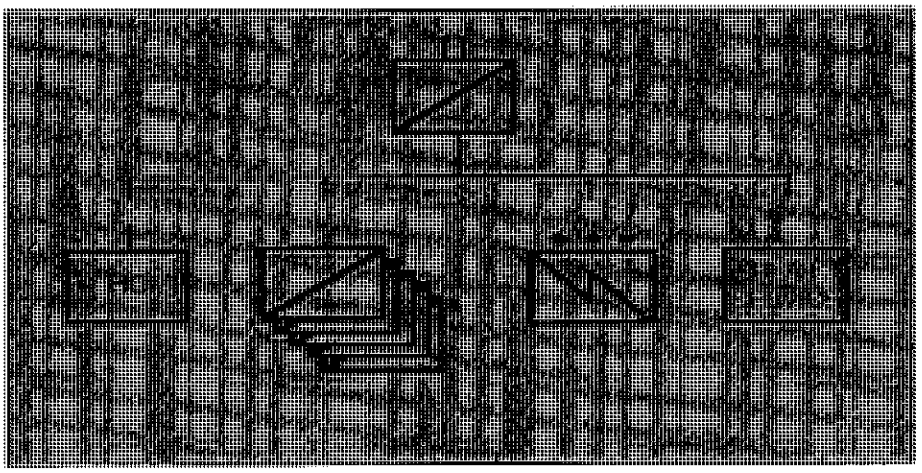


Figure 6. Reconnaissance Battalion

which is produced in North Korea, has become the NPKA standard. The M-1973 APC is a stretched version of the Chinese Type 63 or Type 531 APC. The M-1973 has five road wheels on each side and a turret with twin 14.5mm machineguns, an AT-3 wire-guided ATGM launch rail, and/or SA-14 SAM launchers. The self-propelled mortar company has its 82mm M1937 mortars mounted on either Type 63 or Type 531 APCs or on M-1973 APCs. The anti-tank platoon has three M-1985 ATGM carriers, mounting multiple AT-3 SAGGERs.

Sniper. In the sniper battalion, the term *sniper* is used to signify an elite unit rather than the U.S. Army definition of a trained marksman. A sniper battalion has a headquarters and five sniper companies. Its complete organization is not available.

The battalion is lightly armed, including silenced weapons, such as the 7.62mm NK Type 64 pistol. The companies are organized into sniper teams (usually five to eight men each). Sniper units are designed for guerrilla-type activities, and some are airborne or amphibious qualified.

Naval Infantry. There are special operations force units designated *amphibious landing* or *seaborne sniper* (Figure 5). Sniper battalions that are trained for amphibious operations are called *seaborne* sniper battalions and their organization is similar to that of the sniper battalions. Their primary missions are to conduct coastal reconnaissance, remove obstacles, and attack as the advanced wave during an amphibious landing. Upon completion of this phase of the operation, they occupy and destroy specially selected targets in the enemy rear, support guerrillas, and conduct guerrilla activities. The units designated seaborne conduct raids, while units designated amphibious landing take and hold terrain.

Reconnaissance. The Bureau of Reconnaissance has eight to ten reconnaissance battalions (Figure 6). A reconnaissance battalion has a headquarters and five reconnaissance companies. The battalion is lightly armed, and the companies are organized into

reconnaissance teams, usually of five to eight men each. These reconnaissance battalions conduct strategic and operational reconnaissance.

Weapons and Equipment

The North Koreans either manufacture or assemble various military hardware including the AT-3 SAGGER ATGM, the M-1973 APC, the T-62 tank, and numerous artillery systems. They produce the following infantry weapons: The Type 68 assault rifle; the Type 62, RPK, Type 68, and 14.5mm KPV machineguns; the RPG-7 antitank grenade launcher; and the 82mm B-10 recoilless gun. They produce the following small arms ammunition: 7.62 x 25mm, 7.62 x 39mm, 7.62 x 54mmR, 12.7 x 107mm and 14.5 x 114mm. In addition, they produce 82mm M1937 and 120mm M1938/43 mortars and ammunition.

Type 68 Rifle. The Type 68 is a lighter modified copy of the Soviet AKM/AKMS. It is capable of either semiautomatic or automatic fire. This rifle fires the 7.62 x 39mm round and has an effective range of 300 meters on semiautomatic. It has a practical rate of fire of 100 rounds per minute on automatic or 40 rounds per minute on semiautomatic. The rifle uses a 30-round magazine.

Type 62. The Type 62, a copy of the Soviet RPD, is an automatic, bipod mounted light machinegun that fires the 7.62 x 39mm round. It has an effective range of 800 meters and a practical rate of fire of 150 rounds per minute. Two 50-round belts of ammunition are carried in a drum magazine.

RPK. The North Korean RPK, a copy of the Soviet RPK, is an automatic, bipod-mounted light machinegun that fires the 7.62 x 39mm round. This light machinegun can use 30-, 40-, and 75-round magazines. It bas an effective range of 800 meters and a practical rate of fire of 150 rounds per minute.

Type 68 Machinegun. The Type 68 is a copy of the Soviet PK general-purpose machinegun but with a longer PKT barrel, an odd-shaped butt stock, and a ladder-type rear sight. The Type 68 is an automatic, bipod- or tripod-mounted general-purpose machinegun that fires the 7.62 x 54mmR round. It uses 100-, 200-, or 250-round belts of ammunition. It has an effective range of 1,000 meters and a practical rate of fire of 250 rounds per minute.

Type 1891/30. The Type 1891/30 is a copy of the Soviet 1891/30 7.62 x 54 mmR sniper rifle. The 1981/30 is a bolt-action rifle with a five-round capacity. With the 3.5-power PU or 4-power PE telescope, it has a maximum range of 800 meters.

RPG-7. The RPG-7V is a recoilless, shoulder-fired, muzzle-loaded, reloadable, antitank grenade launcher. It fires a rocket-assisted HEAT (high-explosive antitank) grenade. The grenadier normally carries two rounds of ammunition, and the assistant grenadier carries three rounds. In the defense, 20 rounds of ammunition may be positioned with each grenadier. The maximum effective range is 500 meters for stationary targets and 300 meters for moving targets. At the maximum range of 920 meters, the projectile self-destructs causing a shower of fragments. The RPG-7 grenade (PG-7 or PG-7M) will penetrate 330mm (13 inches) of armor. The RPG-7V has a rate of fire of six rounds per minute. Recently, an antipersonnel round (the OG-7) was also identified.

B-10. The B-10 is an 82mm smoothbore recoilless gun. The HEAT round has an effective range of 400 meters and can penetrate 230mm of armor. The B-10 also fires HE rounds 4,000 meters at six rounds per minute and has a three-man crew.

AT-3. The AT-3 SAGGER is a wire-guided ATGM. The gunner must guide it to the target using a joy stick. The SAGGER can engage targets at ranges from 500 meters to 3,000 meters and can penetrate more than 400mm of armor. In the manpack version, the gunner carries the missile in a fiberglass suitcase. Each three-man team has a control box, four SAGGER missiles, and an RPG-7V antitank grenade launcher. The gunner can fire the missile remotely up to 15 meters from his position, and all four missiles can be fired sequentially. The AT-3 is also mounted on the M1985 ATGM vehicle.

60mm Mortar. The North Korean Army uses the Chinese 60mm mortars; one of them is a copy of the U.S. 60mm M-2 mortar. The Type 31 and Type 63 have a minimum range of 74 meters and a maximum range of 1,530 meters. Each normally uses a two-man crew and fires high-explosive, smoke, and illumination ammunition.

82mm Mortar. The Soviet-designed M1937 is an 82mm smoothbore mortar that can be disassembled and carried in three one-man loads; it has a five-man crew. The M1937 has a minimum range of 90 meters and a maximum range of 4,000 meters. It fires high-explosive, smoke, and illumination rounds and has a rate of fire of 25 rounds per minute. The basic load for this mortar is 25 rounds. The smoke round uses white phosphorus to provide screening and incendiary capabilities. The round is designed to obscure and neutralize enemy observation points and artillery positions. The flying pieces of burning phosphorus can start fires, and the shell fragments can inflict injuries. The illumination round burns for 90 seconds.

120mm Mortar. The Soviet-designed M1943 is a 120mm smoothbore mortar. The rounds can be either drop-fired or lanyard-fired. The mortar has a minimum range of 500 meters, a maximum range of 5,700 meters, and a muzzle device to prevent double loading. It fires high-explosive, smoke, and illumination rounds and has a rate of fire of 15 rounds per minute. Each North Korean infantry regiment has a battalion of 18 x 120mm mortars, and each mortar has a six-man crew.

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Land Navigation
Over Snow-covered Terrain

MASTER SERGEANT DAVID A. PILS

Army units operating in the cold regions of the world often have trouble navigating because snow has concealed terrain features and landmarks.

For example, a helicopter landing zone is set up on what appears to be the only clear, level piece of terrain around. But when an aircraft descends into the blizzard of powdery snow blown up by its rotors, the surface turns out to be ice that is not thick enough to support its weight.

If the soldiers who set up this landing zone had been more suspicious, they may have noticed that the "field" was uniformly flat and level, while most fields have some degree of roll and slope, and that neither vegetation nor fence posts protruded through the snow. Even if the soldiers and the air crew had consulted the map, they may have failed to notice that the area was shown in pastel blue to indicate water drainage. Unfortunately, pastel blue does not show up in brilliant sunshine through dark ultra-violet (UV) protective goggles.

This situation could have been prevented if an intelligence preparation of the battlefield (IPB) had been conducted before the operation and if better maps had been available.

Such an IPB is conducted at division level by the engineer terrain team and by the staff weather officer under the supervision of the G-2. Together, these staff members analyze the military aspects of terrain in the division's area of operations, and also the effects of weather upon that terrain. The map operational products, climatological summaries, current weather data, and forecasts that they produce are primarily intended for staff planning. To the extent that these products are distributed down to battalion level, however, they can also enable S-2 sections to provide IPB support for battalion tactical operations.

Map operational products in black-and-white are not practical for navigation in mountains. Units that frequently operate on mountainous terrain—such as the 3d Battalion, 172d Infantry (Mountain), the 10th Special Forces Group (Airborne), and the 6th Infantry Division (Light)—should have 1:12,500-scale topographic maps overprinted with water drainage and avalanche hazard information. The production of such maps would require support—available on request—from the topographic engineers found at echelons above division.

The colors on the maps would have to be intense so they could be read in brilliant sunshine through dark UV protective goggles. For example, *medium blue* could indicate water drainage. In the northern hemisphere, *yellow* could indicate potential powder avalanche zones—northern slopes of 25 to 45 degrees (28 to 50 percent); and *orange* could indicate potential slab avalanche danger zones—southern slopes of 25 to 45 degrees. (In the southern hemisphere, the yellow and orange would be reversed.) *Red* could show known (historic) avalanche chutes, and *medium green* could show heavily forested areas that obstruct avalanches.

The staff weather officer prepares overlays that template current weather data—wind direction and force, temper-

ature, and depth of snowfall. This data is used along with the terrain team's map operational products to depict the way changing weather conditions affect terrain. *(See Annexes B and C, Field Manual 34-81 for specific effects and critical meteorological values.)*

Leaders should keep in mind that weather is not just a winter consideration, particularly in arctic and high-alpine regions. The effects of weather upon snow-covered terrain in these regions can change dramatically during the warmer months, and daily thaw-and-freeze cycles can trigger avalanches.

It is difficult to estimate range in snow-covered terrain. Keeping a pace count is impractical for a soldier on skis or snowshoes, as is measuring the kilometers traveled with a 50-meter length of Type II nylon (parachute suspension) line. Fortunately, laser range finders — and to a lesser degree, split-image (parallax) range finders — are practical and highly accurate.

In high-alpine regions, altimeters are also used along with maps and compasses to determine location. Altimeters are sensitive to changes in barometric pressure, however, and it takes experience to differentiate changes in altitude from changes in weather. In one of my units, for example, when a sudden change in barometric pressure preceded visual signs of an approaching storm, our altimeter gave us the first indication. If we had not dug snow caves immediately, instead of climbing on toward the summit, we surely would have died from hypothermia in a few hours. (Sometimes, the most reasonable course of action is to wait for better weather conditions.)

In arctic regions, land navigation is also made more difficult by large magnetic declinations, by limited hours of daylight during winter months, by the lack of landmarks, and by the disappearance of existing landmarks during white-out conditions. Loran (long-range navigation) beacon and GPS (global positioning system) locators are not affected by these factors, but care must be taken to keep liquid-crystal displays from freezing. Locators with light-emitting-diode displays are preferable, because they are much more rugged.

Crevasses present another navigation hazard commonly found on glaciers. The crevasses that have formed over convex terrain, such as those at the leading edges of glaciers, tend to be open at the top, tens of meters across, and tens of meters deep. The crevasses that have formed over concave terrain, such as those at the bases of mountains, tend to be narrow at the top and are sometimes concealed by snow bridges. Although hidden crevasses are extremely dangerous for soldiers on foot and in vehicles, they are often safe to cross on skis.

Navigating over snow-covered terrain requires deliberate planning. As with many other military activities that present special dangers and challenges, this skill is also improved by training. One such training opportunity is the 6th Infantry Division's Northern Warfare Course. Those who complete this course are awarded skill qualification identifier E, Northern Warfare Expert. *(Some helpful manuals for training are FM 5-33, Terrain Analysis, 11 July 90; FM 31-71, Northern Operations, 21 June 71; FM 34-81, Weather Support for Army Tactical Operations, 31 August 89; FM 34-130, Intelligence Preparation of the Battlefield, 23 May 89; and FM 90-6, Mountain Operations, 30 June 80.)*

Even professional mountain guides sometimes have difficulty navigating over snow-covered terrain. For example, when guides who have survived avalanches are asked why they chose routes across avalanche hazard areas, they often reply that they had hiked along these routes in summer and "knew the terrain." Their mistake is in failing to recognize that mountain terrain changes when it is covered with snow.

To overcome hazards in snow-covered terrain and navigate successfully, an Army unit must use the IPB process, use well-prepared map operational products, pay attention to the available weather information, and take full advantage of cold region training opportunities.

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The Light Infantry Chaplain

CHAPLAIN (MAJOR) KENNETH L. SAMPSON

A light infantry battalion places certain distinctive requirements on its personnel—physical stamina, tolerance for change, initiative, risk-taking, small-unit operations. To be effective, a light infantry battalion chaplain and his assistant must possess some of these traits as well as others specifically related to the demands of their positions.

On the basis of my experience as a chaplain in light infantry combat units for more than eight years, I would like to offer some advice to battalion and company commanders on what your chaplain and his assistant can do for you and how you can guide them, integrate them into your unit, and tap their abilities. *(See also "The Battalion Chaplain," by Lieutenant Colonel Cole C. Kingseed, INFANTRY, July-August 1991, pages 14-16.)*

The battalion chaplain interacts daily with soldiers, noncommissioned officers, officers, and family members. As a result, he can often read the pulse of the unit, and his advice on the spiritual, moral, and morale climate of the command is invaluable. The chaplain will have information on a whole checklist of items that can help you develop your unit into a more effective fighting force. Is mail coming and going regularly? Are the soldiers alerted to the danger of heat or cold injuries? Are new soldiers and wives welcomed into the unit? Does a private have any knowledge of the mission he is on? Are schedules for religious services honored? Seek his input at weekly training management or command and staff meetings, or in personal discussions.

The chaplain is professionally trained to counsel, teach, and provide insight into a variety of areas. As a trusted and accessible member of your unit, he can provide the first line of support for the prevention or alleviation of such crises as suicide attempts, domestic violence, and marriage or family issues. He can offer insight on stress, grief, and battle preparedness. He can help with family member briefings and family assistance programs. Alcohol and drug abuse, moral leadership, and organizational effectiveness also fall within the areas of his training.

Refer soldiers and family members to him. Notify him of emergencies, hospitalized personnel, or soldiers in civilian or military confinement. He is usually on a first-name basis with the people at post assistance agencies. He can also offer confidentiality and act as a "safety valve"—someone on whom your personnel can unload their frustrations, without fear of reprisal or consequences. In this process, a soldier can experience renewed balance and perspective.

The chaplain is often the best trained communicator on your staff. Allow him blocks of instruction time for training your platoons and companies. Let him give your soldiers new insight at safety briefings and in moral guidance, spiritual development, and battle preparedness classes.

As a commander, you are responsible for the religious, spiritual, moral, and ethical well-being of all the personnel in your command, and the chaplain is there to support you in fulfilling this responsibility.

As an ordained minister in the denominational or religious group he represents, a chaplain is called upon to provide religious support for your unit. Use him to meet the spiritual needs of your soldiers and their family members. His presence—whether passing through the barracks, the dining facility, the motor pool, or the charge of quarters area—can bolster the spirit of all soldiers.

In garrison or on field training exercises the soldiers may be either "psyched up" or "stressed out," battling fatigue or boredom, depending on their individual situations. Family members may also experience the isolation of a distant post or the absence of a husband and father. The chaplain can often step into such an environment and serve as a living symbol of faith and offer much-needed stability.

To a young soldier hard at work digging a foxhole, the chaplain often represents more than his traditional role as a pastor, priest, or rabbi; he may also represent a distant father, mother, grandparent, coach, or older brother.

He performs ceremonies or provides religious services and instruction (baptisms, marriages, worship, spiritual growth, and study). He also helps ensure that the free exercise of religion is observed in the unit.

You can help your unit ministry team further by emphasizing the following areas:

Soldiering. The members of the unit ministry team must establish their credibility in a light infantry combat unit. It is good for the soldiers to see their chaplain look and act like a soldier. There is no better way for him to develop respect and confidence among the soldiers. Make sure he knows how to wear his load-bearing equipment, carry his rucksack, and perform basic soldiering skills. Stress the value of road marching, map reading, and surviving on the battlefield.

Physical Readiness. To undergo the rigors of the light infantry soldier, the chaplain must be in extremely good physical condition. He also gains credibility through daily physical training and regular road marches with different platoons and companies. Allow him opportunities for remedial PT if he needs it. Assign a well-motivated NCO or officer to coach him and help him make the most of his abilities. Soldiers appreciate knowing their chaplain is working hard to improve or maintain his physical conditioning.

Field Training. Keep the chaplain focused on field training, because this, too, improves his credibility with the soldiers. When units are training hard, encourage him to be there. The more miserable the weather and the more difficult the training, the more the soldiers need him. He doesn't have to be in the field for long—usually an evening meal, an overnight stay, and breakfast with the soldiers is enough.

By being positive, looking for simple pleasures, and demonstrating that one can survive and even enjoy cold nights and frosty mornings, he can inspire others to "love the field." In "traveling light and freezing at night," with feet blistered and sore, the chaplain shares hardships with the soldiers. These experiences become opportunities for bonding and establishing camaraderie and unit identity, and also for future ministry.

The chaplain must know the unit's mission. To help him, make sure he contributes to the operational planning process, files a religious support plan, and keeps up with the flow of the battle. This is a key to relating spiritual guidance to what the soldier must do and endure.

Spiritual Substance. Amid these efforts to relate to the soldiers, the chaplain is also unique among your staff officers. He often combines the enthusiasm and imagination of a youth director, the stamina of a scout leader, and seemingly limitless compassion. He may be tempted to engage in a flurry of activity—night ambush training, company reconnaissances, hospital visits, day patrols—thinking he is effective only when he is as frenzied as other leaders around him; you may need to temper this enthusiasm to make sure he maintains his spiritual substance.

A chaplain is in the "soul caring" business. By listening, observing, and caring, he can sense the spiritual and religious climate of the unit. And you should make sure he gets the time he needs to keep his own spiritual reserves high.

Consider his schedule. If he has been with a platoon in the local training area overnight, make sure he takes the afternoon off. Also, allow him a full day each quarter for spiritual reflection and prayer at a local retreat center. And when he works Sunday morning and evening, for example, see that he has an opportunity to spend some extra time with his family during the week.

S.L.A. Marshall once said that "it is the touch of human nature which gives men courage and enables them to make proper use of their weapons." Your chaplain can often provide this touch of human nature so necessary to the soldiers and their families. He can help increase the moral courage that is so vital to survival on the battlefield. The spiritual message he represents and proclaims can minister to the deepest needs of the soldiers. Take advantage of these abilities, and use him to enrich your entire command.

Chaplain (Major) Kenneth L. Sampson served as chaplain of the division artillery, 7th Infantry Division, and as a battalion chaplain in Korea. He recently completed a tour as a brigade chaplain in the 10th Mountain Division at Fort Drum, New York, and is now attending the U.S. Army Command and General Staff College. He is a graduate of Westmont College, Santa Barbara, California, and of the Trinity Evangelical Divinity School.

Task Organizing CSS

LIEUTENANT COLONEL WAYNE C. AGNESS
CAPTAIN JEFFERY S. BESS
CAPTAIN GREGORY A. WATT

We in the Army have spent a great deal of time and effort devising the best mix of combat units for our combined arms battalion task forces. But we have not devoted this same attention to the combat service support (CSS) assets needed to support these forces. The key to sustaining a task force effectively begins with the assurance that the cross-attachment of CSS assets is complete.

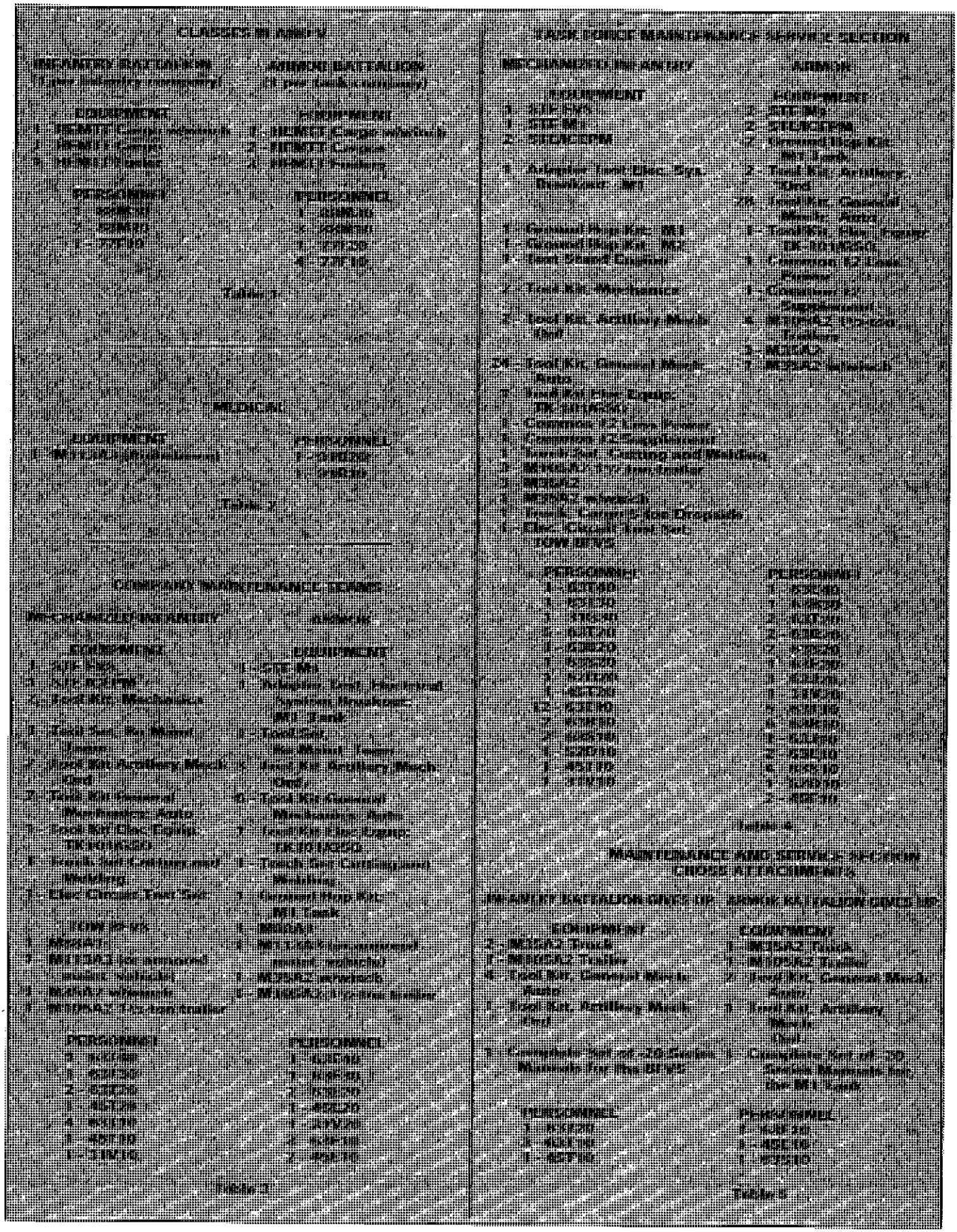
We must do CSS planning concurrently with our tactical planning, although doctrinal guidance for this has not been abundant. Task force organization is determined by the brigade headquarters. Once the maneuver task organization is determined, CSS assets must be task organized to sustain the unit for combat operations.

For the purposes of this article, we are discussing the organization of a balanced task force and using Tables of Organization and Equipment (TOEs) 07246L2 (equipped with Bradley fighting vehicles) for the mechanized infantry battalion and TOE 17376L2 (equipped with M1A1 tanks) for the armor battalion. (TOEs provide a common basis for outlining the principles for the cross-attachment of CSS assets, while MTOEs vary.) For purposes of this discussion, we will look at cross-attachment by class of supply and by CSS sub-functional areas.

Class I. The cross-attachment of mess support is not required. The only adjustment needed is a new headcount for each task force to allow the mess section to prepare the correct number of meals for each company, company team, and separate platoon.

Classes III and V. The support platoon for each battalion is divided into the headquarters element, a transportation section, Class III/V squads, and a mess section. The headquarters element and the transportation section remain intact during cross-attachment. The Class III/V squads are organized as shown in Table 1.

When two companies are cross-attached for a balanced task force, each battalion gives up two Class III/V squads. By cross-attaching the squads instead of individuals and individual vehicles, the commander maintains unit integrity, and each squad leader (88M30) retains positive control of his personnel. In addition, the habitual relationship between each Class III/V squad and the particular company it supports leads to more effective resupply operations.



CLASSES IN ARMY V

INFANTRY BATTALION

(Type Infantry Company)

EQUIPMENT

PERSONNEL

Table 1

MEDICAL

EQUIPMENT

PERSONNEL

Table 2

COMPANY MAINTENANCE SECTION

MECHANIZED INFANTRY

ARMOR

EQUIPMENT

PERSONNEL

Table 3

TANK FORCE MAINTENANCE SECTION

MECHANIZED INFANTRY

ARMOR

EQUIPMENT

PERSONNEL

Table 4

MAINTENANCE AND SERVICE SECTION

CROSS ATTACHMENTS

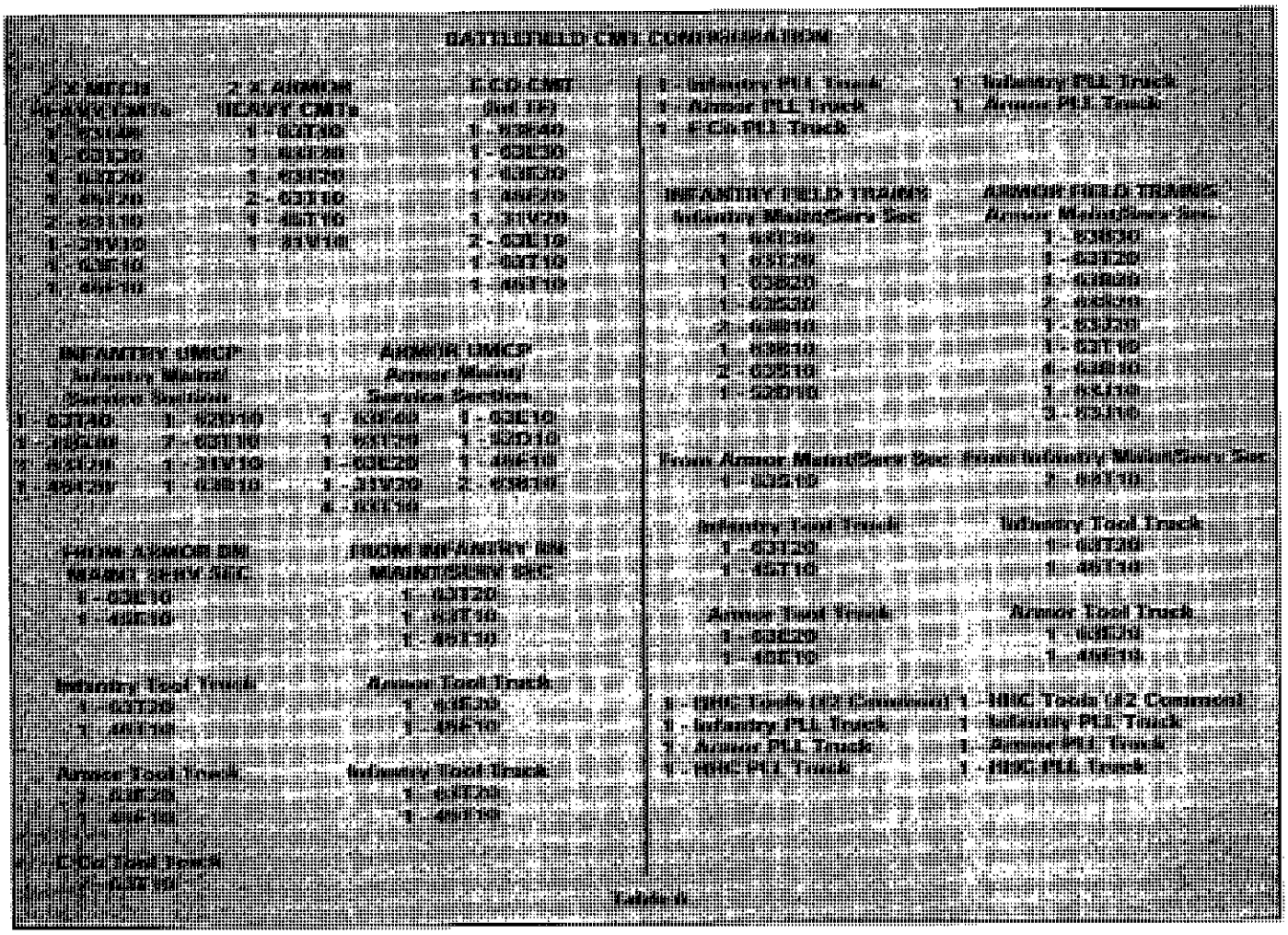
MECHANIZED INFANTRY BATTALION ONLY

ARMOR BATTALION ONLY

EQUIPMENT

PERSONNEL

Table 5



Medical. The ambulance squad that habitually supports a company remains with that company during cross-attachment. The squads for both infantry and armor units are identical (Table 2).

The combat medic section is also affected by cross-attachment. An infantry battalion is authorized 13 combat medical specialists (91B10) and an armor battalion is authorized four. When two infantry companies are cross-attached, six combat medical specialists should be cross-attached from the infantry battalion to the armor battalion to provide medical coverage for the dismounted infantry platoons (one per platoon).

Maintenance and Class IX. Company maintenance teams (CMTs) are organized as shown in Table 3. The team that habitually supports a company remains with that company during cross-attachment.

In addition, each company's prescribed load list (PLL) is cross-attached. This includes one M35A2 truck with trailer, one 76C10 clerk, and all repair parts for that company. The tool truck and PLL truck are positioned in the Unit Maintenance Collection Point (UMCP) or the field trains, depending upon the battalion maintenance officer's (BMO's) maintenance plan.

Each mechanized infantry CMT is authorized slings but not a ground hop kit. A unit can establish ground hop kits, however, by ordering the required Class IX parts and configuring them to form a kit. Each CMT should have a complete set of -20 series manuals for each type of vehicle it maintains.

The unit must also consider cross-attaching maintenance personnel between companies. When a platoon of tanks or Bradleys is cross-attached, the appropriate hull-and-turret mechanic must also be cross-attached, depending on the number of mechanics available, the current maintenance status, and the maintenance priority.

When companies are cross-attached, personnel and equipment should also be cross-attached between the battalion maintenance and service sections. Cross-attaching maintenance service section personnel and equipment will allow the BMO to have mechanics in the appropriate MOSs—along with tools, manuals, and other equipment—in the CMTs, the UMCP, and the field trains. This will permit echeloning of repair capability and the assets to do repairs in forward areas. The maintenance and service section is organized as shown in Table 4.

When cross-attaching two companies, the maintenance and service section should cross-attach the assets as shown in Table 5. This will allow the armor task force BMO to place additional Bradley mechanics in the UMCP or the field trains, depending on the cur-

rent maintenance status. These additional mechanics can be organized into contact teams to reinforce the CMTs as the BMO deems necessary.

The heavy wheel vehicle mechanics (63S10) must be cross-attached because of the increased number of heavy expanded-mobility tactical trucks (HEMTT) the infantry task force will receive in the cross-attachment of Class III and V squads. The armor task force has only four M1 tank hull mechanics and two turret mechanics in the maintenance and service section, one of whom is an NCO. This allows for only one hull mechanic and one turret mechanic to be cross-attached to the infantry task force. The commander should consider pulling mechanics from the tank CMTs to allow the infantry task force BMO to echelon his maintenance assets among the CMTs, the UMCP, and the field trains.

After the maintenance assets have been cross-attached, assets can be arrayed on the battlefield in the general configuration shown in Table 6. This configuration is based on a balanced task force with two infantry-heavy teams and two armor-heavy teams. These assets can be shifted on the basis of the current tactical situation and maintenance status.

Sustaining the force is the logistician's job, but it is the commander's responsibility. The cross-attachment of CSS assets must be accomplished with the same degree of detail that we now devote to combat and combat support assets. A precise cross-attachment of CSS assets based on task organization will give the logisticians the means to plan properly and adequately, and to prepare and execute combat service support operations during combat operations. It will allow for the total support a task force needs to accomplish any tactical mission it may be assigned.

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NEOs
The New Mission

LIEUTENANT ROBERT L. BATEMAN

The image of a helicopter hovering above a large group of people on top of the U.S. Embassy in Saigon in 1975 is a familiar one, but few people think of it as a military operation. Yet that is exactly what it was—a noncombatant evacuation operation (NEO).

NEOs have been around as long as the infantry, and the mission is still to get civilians out of harm's way. But in the past 30 years, our nation's ability and need to conduct these operations have increased dramatically. Traditionally, this has been the province of the U.S. Marine Corps and the Fleet Marine Force. More recently, however, it has become one of the major contingency missions for the Army's light infantry divisions.

The concept behind a NEO mission is deceptively simple—to move U.S. civilians and allied personnel ont of the area of actual or potential hostilities. The reality can be staggeringly complex, involving Army, Navy, Air Force, and Marine Corps personnel aside from the civilians themselves. Further, since the entire operation comes under State Department control, the requirement for clear communication, thorough understanding of operational terms, and agreement on a course of action is particularly critical.

On the battlefield, the light infantry is prized for its flexibility, its ability to maneuver on and dominate restrictive terrain, and its orientation toward night operations. All of these characteristics are essential to NEOs.

The NEO is now the primary contingency mission in many light infantry divisions, but it was only recently that the Army began to train seriously for these complex missions. The Army has no published doctrine on how to con-

duct NEO missions. In fact, very little has been produced on the subject at any level. The 82d Airborne Division has a NEO handbook, as does the 7th Infantry Division, but the 25th Infantry Division may have come the farthest with a complete NEO mission training plan (MTP) created by its 3d Brigade. The material presented here will provide a basic background and understanding of the NEO mission, as well as a few suggestions on executing it for those junior leaders who will be involved in it on the ground some day.

A NEO mission can be defined loosely as any military operation that has as its primary focus collecting and processing civilians and moving them out of an actual or potential combat zone or area of civil unrest. The civilians may be U.S. citizens, allied civilians, indigenous friendly personnel, or anyone the State Department may designate, and the threat level may vary dramatically.

NEO missions are executed any time the U.S. Government decides that the lives of U.S. civilians living or working in a foreign country are threatened by activities in or around that country. Additionally, political considerations often dictate that the decision to evacuate not be made until the last possible moment. Obviously, this means that a NEO mission is almost always considered an emergency. This built-in dichotomy can make a NEO mission especially frustrating to a unit commander, and this frustration may show its effect down to platoon and squad level operations.

Since the definition of NEO covers a wide range of possible scenarios, NEOs are categorized into three basic types—permissive, semi-permissive, and non-permissive.

A permissive NEO is the easiest to execute because of highly favorable conditions. No resistance to the evacuation is expected. The host nation's military and civil law enforcement agencies have control in the area of operations (AO) and are able and willing to help in the evacuation process. In these conditions, the NEO can be conducted at a slower pace, and the search for and processing of the evacuating civilians can be more thorough. But this type of NEO is also the least likely because of the political considerations; when the situation is this good, it is unlikely that the State Department will recommend evacuation in the first place.

A semi-permissive NEO, as the title suggests, is slightly more complicated. It is characterized by an increased threat to the force and the civilians from civil disorders and potential terrorist activity. Additionally, the host nation may be indifferent to the situation or may not be able to help even if it wants to do so. The evacuations of Saigon and Monrovia, Liberia, are prime examples of this type of NEO. Planning considerations in this case require a secure lodgement area and probably an airfield (ideally located together) since the host nation cannot or will not provide them.

The non-permissive NEO is the most difficult and also the most likely form. In this type of operation, hostilities are under way or imminent in the AO. This type may also be used when the host nation is actively opposed to the evacuation of the civilians, or when the population in the AO is under the control of armed forces that have both the ability and the intent to interfere with the evacuation. (Intelligence agencies will warn of terrorists or criminals who may try to disrupt the evacuation.)

Obviously, this is the most complex form of NEO. In addition to conducting a civilian-oriented mission, the unit involved must also be prepared to engage in combat operations at any point. These dual requirements can lead to some very involved rules of engagement (ROEs).

Generally, noncombatant evacuation operations are executed in five phases:

- Alert.
- Deployment to an initial staging base.
- Evacuation site operations—consisting of marshalling, evacuation control center operations, and deployment of the evacuees to a safe haven.
- Safe haven operations.
- Redeployment.

Ideally, the staging base can be eliminated when marshalling and evacuation take place at the same location. Such a site must have an airfield capable of accepting C-141 aircraft. It should be close to the civilians' homes and work places, and it should be relatively defendable (outside major urban centers or known bases of hostile forces). In that situation, the unit executing the NEO has to be prepared to do so immediately upon arrival, because the staging base activities (crossloading, mission planning, and the like) have to be done before deployment. In either case, the unit's real work begins as soon as it arrives at the marshalling site.

MARSHALLING

The marshalling process is the heart of the entire NEO. This is the phase in which the civilian evacuees are first contacted, collected, screened, and prepared for their movement out of the AO to the safe haven. This is also the point where the command is most dispersed and therefore vulnerable to hostile forces. Finally, this can be one of the most frustrating phases for the junior leaders as they contact and deal with civilians whose attitude can range from profusely thankful to belligerent and resentful, and as they also deal with the constant threat of encountering hostile forces and getting into combat. All of this must be done while the unit is trying to coordinate the activities of any attached civil affairs, emergency ordnance disposal, translator, military police, military intelligence, and psychological operations units.

The NEO marshalling team can be any size from platoon through battalion, depending on the mission. The deciding factors are the threat capabilities, the number of civilians to be evacuated, and the dispersion of those civilians from a central location. In any case, the marshalling team is generally split into three elements—the search teams, the security and control team, and the process team.

In the best situation, the search team may not be needed at all. Every U.S. Embassy is required to have an evacuation plan on file to aid in the evacuation of all civilians in the country. The plan

is supposed to provide centralized locations where U.S. civilians will gather before evacuation, and these sites are to be accessible by aircraft and easy to find. Soccer stadiums and playing fields are often selected for this reason. Too often in the past, though, these plans have been hopelessly out of date by the time they were needed. The planned landing zones might be occupied by urban buildings, for example, or power lines may have gone up around the site. Today, many of these plans have been updated, and most embassy staffs work to ensure that they remain current. But it is still possible that an Army unit will be confronted with an out-of-date plan.

The method adopted by the State Department to implement the evacuation plan is the warden system. In this system, a prominent man or woman in the U.S. community is selected to be the "warden" for several other U.S. civilians (anywhere from two to 20). The warden must know the home addresses, the work locations, and the home and business phone numbers for all the people on his list. Additionally, if he does not know them personally, he should at least be able to recognize them on sight. When the State Department notifies the Embassy to prepare for evacuation, the Embassy notifies the wardens. The wardens then notify the people on their lists, telling them the date, time, and location for the evacuation, along with any restrictions (on baggage, items that will be considered contraband, pets, and the like).

This is where the search teams come into play. If little notice has been given before the evacuation, many of the civilians may not have been contacted. When the marshalling team lands at the marshalling site, they must be prepared to go out and look for those civilians. Wardens can make this job a lot easier if they are available, but when the unit arrives it may find only an empty field and a list of names and addresses. Then the entire focus must shift to finding the civilians and moving them to the marshalling site.

Fully half of the unit may be used for this task, and the task organization depends on how small each search team can safely be. That, of course, depends upon METT-T (mission, enemy, terrain, troops, and time), and the commander on the ground must decide.

Each team should be well briefed on the rules of engagement and should also know the rules regarding personal possessions (one carry-on bag with toiletries, clothes, and valuables), animals (none), and what constitutes contraband (drugs, weapons). Then the team members go out and do their best to contact everyone they are assigned, telling them where to go and what to take with them. If they arrive at a home and nobody is there, the general rule is to leave a message on the door and carry on with the search. If they find a U.S. citizen who knows of the evacuation but just doesn't want to go, they also need to know what to do in that situation. (U.S. citizens always have the right to refuse help.) They may believe the situation does not warrant their leaving and may decide to stay. A search team leader who faces such a situation should extend the offer again and if that fails, note the date and time, the civilian's name, and the circumstances.

In addition, the embassy will have provided a list of U.S. citizens it expects to be evacuated from a specific site and may also have provided a list of third-country nationals who are to be evacuated for humanitarian or political reasons.

At the marshalling site itself, the rest of the unit should be organized into three elements—process, control, and security. These elements may later be augmented by the return of the search teams, but only the control element should be varied by the circumstances. The security element should not be changed, for obvious reasons, and the process element is a specialized group that has had additional training just for that purpose.

The mission of the process team is to prepare the evacuees for eventual overseas movement to the safe haven (a friendly major power or, most likely, the United States itself). Doing this quickly and efficiently in a potential combat zone can be a challenge, and many of the functions may be eliminated to save time and move the civilians back to a safer location in-country. In any case, since processing must be done before overseas movement, it is best to get it done as soon as possible.

Generally, this mission will need at least one platoon to operate well. A light infantry rifle platoon (with attachments) can perform a process team mission.

The process team is broken down into five elements: reception, recording, search, medical screen, and debrief.

At the reception station three soldiers from the rifle platoon meet the evacuee and record his identification (preferably a passport), screen the embassy-provided list for his name, and have him sign a waiver or consent form.

Attachments at this site may include civil affairs personnel and a translator for non-U.S. nationals the government may want evacuated. At least one NCO should also be at the site to greet each civilian. He reminds the evacuee of the definition of *contraband* and explains what will take place at the five stations of the processing line. He ensures that the evacuee does not enter the line with more than one bag or with any visible items of contraband (animals and plants are the most common).

At the recording station, the civilian is again asked for his name and social security number and is entered on a passenger manifest according to status (determined by the embassy-provided list). If the civilian's status is changed—by the discovery of drugs or weapons at the search station, for example—these manifests are also changed. Generally, this station has four soldiers so that more than one person can be processed at the same time.

Next is the search station, where it is again helpful to set up two teams to speed the process. If any Military Police are attached to the unit, this is probably the most critical place to use their experience. Everything must be searched, every carry-on bag and every person who is to be evacuated. (The only exceptions to this are diplomatic bags and persons, but that is an entirely different problem of its own.)

Generally, a search team should consist of three men—one to search bags, one to do body pat-down searches, and one to provide security. If there are two teams, at least six men are needed, plus one NCO to oversee the operation.

Additionally, a "hot box" is needed where any contraband within the perimeter can be placed. Anything the soldiers of the process team find that may be contraband, that has any intelligence value, or that may be dangerous is brought here, evaluated, or disposed of as appropriate. If the NCO believes it is important enough, he may bring it to the attention of the process team platoon leader. Meanwhile, it saves time for every soldier to know that if he finds something questionable or that he thinks may be dangerous, he takes it straight to the hot box and then gets back to his station. The hot box should be at least 35 meters from the process line, perpendicular to the search station, or, if possible, around the corner of a building or below ground. This site should be manned by one of the EOD personnel (if there are any) or at least by an NCO.

The last two sites are the medical screening and debriefing stations. At the medical screening site, the attached medic or doctor checks each person quickly on the way through, concentrating mainly on symptoms of some form of communicable illness that could be a hazard. He may also give first aid at the site if time and circumstances permit.

Finally, the evacuee arrives at the debriefing site where the officer in charge (OIC) or an attached intelligence NCO may check for any potentially helpful intelligence he may have. It is highly recommended, however, that this station *not* be run by the OIC but rather by the attached intelligence NCO or officer. The OIC of the process team will have more than enough on his hands and should not be tied to this one station.

That, in a nutshell, is how a processing station can be run during a NEO. Of course, any necessary shortcuts can be taken when there is not enough time for the entire process.

The evacuation of noncombatants from a potential or actual combat zone is a mission which must often be executed on short notice. A commander who recognizes this as a contingency mission and trains and organizes for it will most likely be able to complete this critical mission quickly and without inordinate casualties to either the noncombatants or his force. The keys to a successful noncombatant evacuation operation are detailed training and coordination to ensure that every member of the team knows his job and does it right the first time.

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Operation DESERT STORM
Crossing the LD

CAPTAIN THOMAS E. BERON

Leaders preparing for combat must try to anticipate all the things that can possibly go wrong. Then they should make plans for dealing with these contingencies when they occur. Such plans can prevent disaster, as my company learned during Operation DESERT STORM.

For six months, our battalion training had focused on engaging and defeating the Iraqi Army. Our mission for the upcoming operation was relatively simple. We would conduct a flanking movement to strike deep into the enemy's rear area, cutting lines of communication and then establishing blocking positions to prevent his retreat. My job, as antiarmor company (Company E) commander, would be to provide long-range TOW fires wherever the battalion commander needed them.

Leaving the task force tactical operations center after the final line-of-departure briefing, I felt relieved. I would return to my company and pass on the order to begin the attack, and in two hours we would be in enemy territory. Soon the apprehension and doubt would give way to action and challenge.

My soldiers, sections, and platoons were well trained and ready for combat. The six months in country before the war had allowed us to prepare tactically, physically, and emotionally. The command and control glitches had been worked out. Equipment shortcomings had been identified and corrected. The nervousness and fear of the unknown had been addressed, discussed, explained, and finally accepted. Our confessions had been heard, our sleeves were rolled up, and we were ready to fight.

Mission analysis indicated that the first phase of the operation, the drive to the Euphrates River valley, would hold little opportunity for my company. A mechanized infantry antiarmor company is basically a defensive unit, one that

is not made for firing rapidly on the move. It was the operation's final phase that was tailor-made for the TOW II missile.

The Euphrates River valley was large, flat, and open, with long-range visibility possible. Through this valley would pass the Iraqi armor, either coming or going, reinforcing or retreating. To us, it would make no difference which direction the tanks were traveling; we would find them, create an engagement area, and turn it into a kill zone. In the valley, the only thing that would matter would be how many TOWs were shooting. The problem was that what lay between us and the Euphrates kill zones was 284 kilometers of rocky desert. It wouldn't matter how well trained we were, how tactically proficient we were, or how much courage we had if we didn't get our ITVs (improved TOW vehicles) to the valley in force.

In preparing to accomplish this task, we focused on three areas: We would make sure the soldiers understood the problem and were ready to give their best effort to maintenance; we would streamline the company maintenance team's standing operating procedure (SOP) so they could repair any breakdowns quickly; and we would develop a plan for using the equipment and personnel from any track that did break down during the movement.

Convincing the soldiers of the importance of operator-level maintenance was relatively easy. They *wanted* to go fight and understood that a breakdown might keep them out of the battle. At the same time, all of them knew the road home went through Iraq, and all of them wanted to get home.

For the skeptical and timid, I made sure to point out that there was no telling how long it would take the battalion maintenance team to locate and repair one of our disabled vehicles. Meanwhile, the task force would move on, leaving the vehicle crew to wait alone in the Iraqi desert.

This logic seemed convincing, but streamlining the company maintenance team SOP was slightly more challenging. Since our PLL (prescribed load list) truck was in the combat trains, we had to carry some repair parts with us for quick fixes. We used historical data to determine which parts were most likely to break on this kind of mission and established a mini-PLL on the maintenance track that moved with the company.

Next we established a time-of-repair cutoff to decide which tracks the company mechanics would try to repair and which they would leave for battalion to collect. We decided that 30 minutes was the most we could allow for repair. Anything that would take more than that would be left for battalion. We drilled the mechanics to perform like a race-car pit crew on a disabled vehicle to determine the problem, the solution, and how long the repair would take. Each member had an area of expertise that he would troubleshoot first.

With this preparation complete, the executive officer and the first sergeant were left to supervise the maintenance team during the operation and to make decisions on repairs.

The most complex element of the plan was how to use the equipment and personnel that we took from disabled tracks. My platoon leaders and I all designated the tracks we would jump to if our own broke down. Other key leaders would be bumped according to space, losses, and needs at that particular time. The XO, who would act as a roving troubleshooter in his HMMWV, would supervise all crossloading.

Since an ITV has racks for only ten missiles, we decided to crossload TOW rounds only if empty racks were available. And since TOW equipment is historically temperamental, we planned to take as much M220 equipment as possible off any track that was deadlined. We established a priority list of items to take and saw that each track had a copy of the list on its fuel cell. The XO would decide what equipment we would distribute, load it onto his HMMWV, and ferry the various components around to the remaining tracks. The SOP, once it was in place and well rehearsed, seemed sound.

The LD plan began to unfold nicely. All the companies found their particular crossing points and started moving through the Iraqis' berm at the Saudi-Iraqi border. Once the lead elements of Company E began moving over the top, I completed the last-minute checks on my own track. The maps were up and the follow-on map sheets were laid out in order, ready to replace those no longer needed. Unbroken chemlights were in place for use in marking my ITV as a coalition vehicle at night. Extra grease pencils and alcohol pens were stored, and smoke and pyrotechnic devices were positioned according to load plan. The Loran was wired into position with 89 way points plotted, and the external antenna was erected. I had everything I would need, and an SOP to locate it. Then disaster struck.

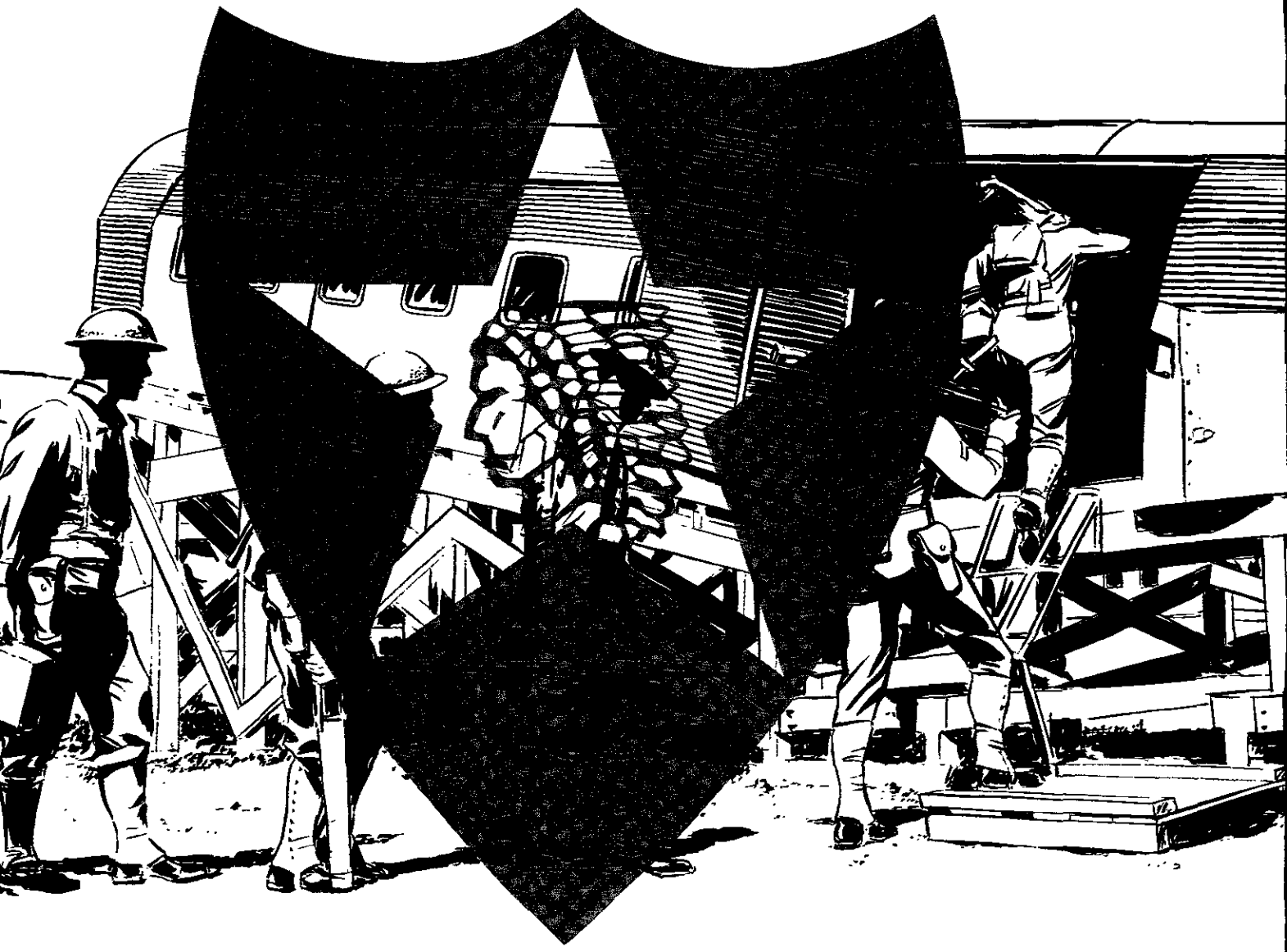
I knew something was wrong, even before the driver's voice crackled over the intercom. The lurch and then the lack of forward momentum were warning enough. "Sir, I think the transmission's gone." I couldn't believe it. My own track was deadlined 100 yards short of the LD!

Cursing the unfairness of it all, we went into action. The call went out that my track had a problem. The mechanics came forward to troubleshoot, and my attached rifle platoon leader came to pick me up. (How naked I felt when I jumped across to his track with only my weapon and my map.)

As we pulled away, though, I looked back to see the mechanics swarming around the dead track like ants. Twenty minutes later, I heard the good news that my track was fixed and coming to catch up with me. The mechanics had replaced a U-joint and had secured an uncooperative hose with a black web belt. That's what I call a pit crew!

Anticipation, planning, and rehearsal had prevented a disaster before it started. Company E reached the Euphrates River Valley with all of its tracks.

Captain Thomas E. Beron commanded Company E, 2d Battalion, 18th Infantry, 197th Infantry Brigade (now 3d Brigade, 24th Infantry Division) during Operation DESERT STORM. He is now assigned to the Armed Forces Inaugural Committee in Washington. He is a 1984 graduate of Tulane University.



The 2d Infantry Division ("Air-borne")

JOHN M. MANGUSO

The exploits of the Army's airborne divisions in World War II are well known. But few students of history are aware of the role the 2d Infantry Division played in the development of the airborne concept.

Following World War I, the division was stationed at Fort Sam Houston, Texas, one of the largest and most active Army garrisons at the time. Histories of the post call it "the cradle of the airborne infantry," usually without further comment or explanation. This claim is rooted in the parachute drops of infantry machinegun units from the 2d Division at Brooks Field in 1927. But that is just the start of the story.

On 20 August 1940, the Office of the Chief of Staff of the Army directed a study of "the proper organization, equipment and tactical employment of parachute and air transported" troops. On 15 September, Major William C. Lee visited San Antonio to discuss the concept of "air infantry" with the

staff of the 8th Corps Area, headquartered at Fort Sam Houston. San Antonio newspapers at the time credited the post with being "the point of origin for the new military arm. . . parachute troops." The 501st Parachute Battalion was organized the next day.

The 2d Division—occasionally referred to at the time as the "Army's guinea pigs" because of its frequent role as a test-bed for new equipment and tactics—conducted plane-loading tests at Duncan Field in San Antonio in November and December 1940. Loading practice on mock-ups of transports had been conducted earlier at Fort Sam Houston, but this time real aircraft were used—two C-39 transports (a variant of the Douglas DC-2) and one B-18 bomber. Troops of Company H, 9th Infantry, loaded machineguns and an M-3 37mm antitank gun and their crews and ammunition. The load was about 3,500 pounds per aircraft.

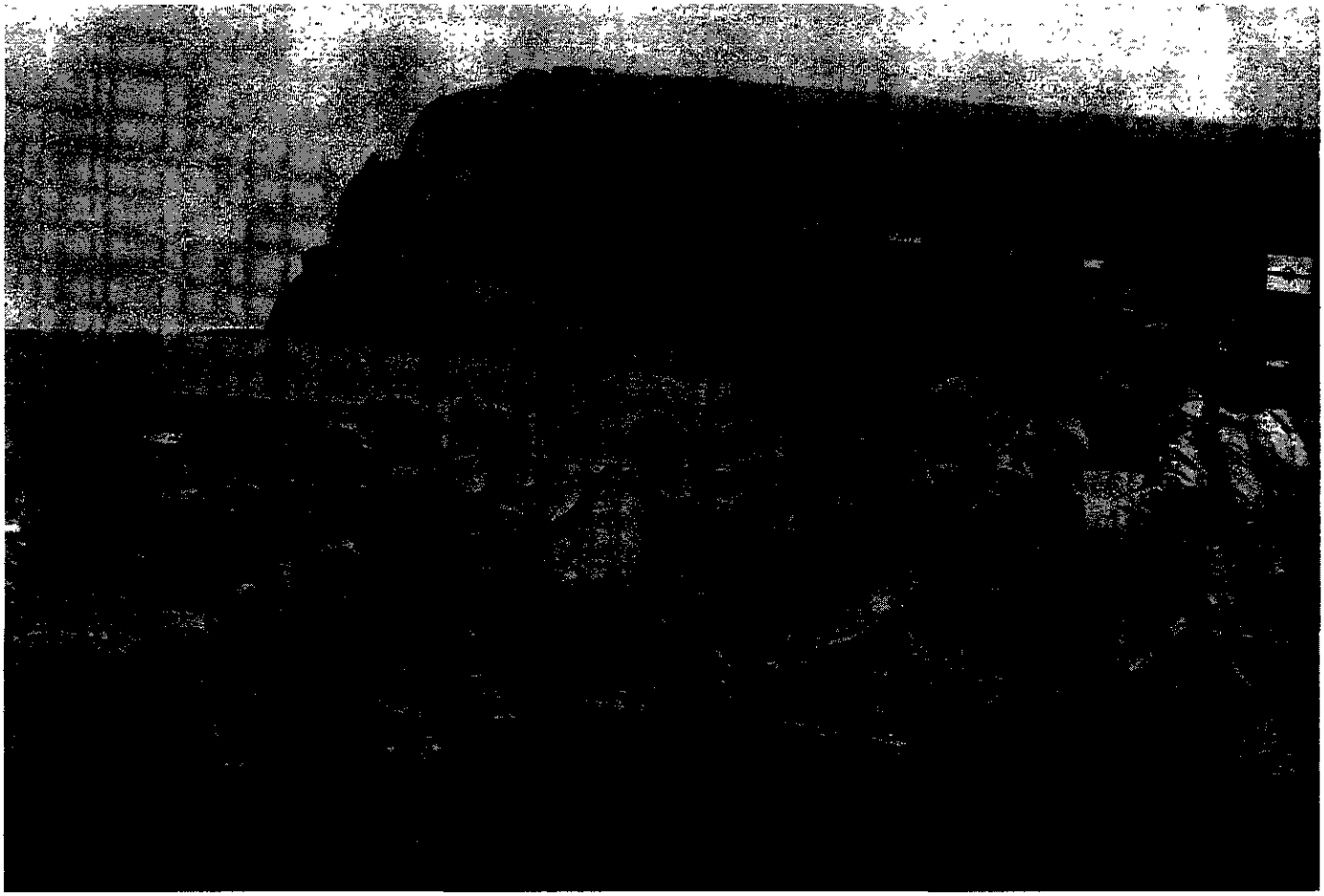
In June 1941 a newspaper article noted the development of "blitz tactics" by the 2d Division. Photos showed a 37mm gun being loaded onto a transport mock-up and an interior view of a transport in flight with a 37mm gun and crew. The article indicated that the experiments at Fort Sam Houston in moving troops rapidly by air complemented the parachute training of units at Fort Benning, Georgia. It refers to the 2d Division as "air-borne" troops used to follow up advances made by the parachute troops.

Field Manual 100-5, *Field Service Regulations: Operations*, dated May 1941, outlined the concept for the use of "Troops Transported by Air" in much the same manner: The parachute troops, attached to the air-landing troops, constitute the advance guard of the force. Missions for the air-transported force included seizing and holding objectives along with other forces, conducting envelopments by air, mounting surprise attacks as feints or diversions, and attacking enemy positions otherwise unassailable by ground forces. The air-landed force, it was noted, did not have to be a specially organized unit. It was to be a standard infantry division with air transport and parachute units attached to it in a task force arrangement.

The summer of 1941 saw significant advancements for the parachute forces at Fort Benning. The 502d Parachute Battalion was organized in July, and William C. Lee, by now a lieutenant colonel, was appointed to command the Provisional Parachute Group. Another battalion was organized in Panama as the 550th Infantry Airborne Battalion, and the Army also began to experiment with gliders.

In the Louisiana Maneuvers in 1941, a single parachute company from the 502d conducted two air drops while the 2d Infantry Division participated as a straight infantry division.

In the November Carolina Maneuvers involving the 1st Army and IV Corps, an airborne task force was organized



Heavy machinegun section with C-47 during October 1942 maneuvers. By this time, the 2d Infantry Division had been issued the M-1 steel helmets, but they still used M1903 Springfield rifles.

Post newspaper coverage of the 9th Infantry's operations in the North Carolina maneuvers.

under Lee's Provisional Parachute Group. These maneuvers were to be the first large-scale movement of U.S. airborne troops. The airborne task force was to include the 88th Infantry Airborne Battalion, the Army's first designated air-landing unit, but the 88th Battalion, organized in September, was not yet ready. (Note the terminology then in use. The units' designations depended principally upon the way they arrived on the battlefield. They were called "parachute battalions" and not "parachute infantry battalions," while the air-landing units were designated "infantry airborne battalions.") The 3d Battalion, 9th Infantry, of the 2d Infantry Division, commanded by Lieutenant Colonel C.J. Hirschberger, was substituted for the 88th Battalion, and the battalion was streamlined down to 467 men, or about the same size as the 88th Battalion.

Lieutenant Colonel Charles Kerran, Jr., executive officer of the 88th, was sent to San Antonio to take charge of the air movement, assisted by Captain Leroy Yarborough, Jr., also of the 88th. Although there is no record of any parachute training for the 2d Division, photos of its 3d Battalion, 9th Infantry, show the troops wearing seat-type parachutes while loading the transports. The battalion was then moved by air in two echelons from Duncan Field and Kelly Field to the Carolina Maneuver Area.

The airborne task force, based at Shaw Field, prepared for an assault on Pope Field near Fayetteville, North Carolina. Lee's airborne task force assaulted Pope Field on 19 November with a parachute drop by the 502d Parachute Battalion. This attack failed when the defenders executed a pre-planned counterattack and theoretically eliminated the parachute unit. The scenario was then altered to permit the air-landed attack by the 3d Battalion, 9th Infantry. Then, the air-landed assault demonstration was conducted for reporters, and another airborne mission captured and destroyed an important bridge. During their deployment from San Antonio to the Carolinas and back, the 9th Infantry soldiers logged 27

hours in the air.

The Army—after these maneuvers, and considering its experiences with airborne operations in Europe—came to believe that future parachute operations would have to be conducted by larger units, including glider units, and supported by ground forces. Entire airborne regiments and divisions would be needed. The Army therefore converted the 82d and 101st Infantry Divisions into airborne divisions in August 1942.

The Airborne Command continued to train the 2d Infantry Division in air-landed operations. In October 1942, the division intensified its training in preparation for airborne maneuvers. All three of its regimental combat teams—the 9th, 23d, and 38th Infantry Regiments—along with the division staff, received training in air movement. For this exercise, all non-air-transportable equipment and all non-essential personnel were deleted from the tables of organization and equipment. At least 11 mock-ups of C-46 and C-47 transports were built at Fort Sam Houston.

Several C-47s towing CG-4A WACO gliders landed on the parade ground at Fort Sam Houston. Familiarization rides and practice loading were conducted with the loaded aircraft towing the gliders taking off again from the parade ground. (One veteran of this phase of the training explained that the aircraft took off northward, or toward the post hospital, then banked to the right. This was done, he explained, so that if a plane should crash on takeoff it would come down on post instead of in the city of San Antonio.)

Instructional teams were sent from the Airborne Command, and a "flying command post exercise" was conducted. Due to a shortage of aircraft, the final phase of the maneuver included the movement of the division by combat teams, rather than in a single echelon, to secure airfields near Brackettville and Del Rio, Texas, a distance of about 150 miles, on 24 October.

As usual, parachute troops made the first assault. Cavalry units from Fort Clark defended the airfields. By way of comparison, in the German air assault against Crete in May 1941, the initial assault force of two reinforced parachute regiments was projected about 200 miles from its bases, followed later the same day by two more parachute regiments. The air-landed 5th Mountain Division arrived the following day.

This exercise by the 2d Infantry Division and the 1st Troop Carrier Command was observed by a host of visiting officers whose names are familiar to students of airborne history. The group included Brigadier General Elbridge G. Chapman, Airborne Command; Brigadier General Joseph M. Swing, Division Artillery Commander, 82d Airborne Division; and Brigadier Generals Don F. Pratt and Anthony C. McAuliffe of the 101st Airborne Division.

Although the exercise was successful, the 2d Infantry Division's days as an airborne division were at an end. The division was transferred to Camp McCoy, Wisconsin, in November of 1942 for a four-month program of winter training and, of course, to test equipment for use in extreme cold weather. In October 1943, the 2d Infantry Division began its movement overseas to Europe.

Considering the record of achievement of the 2d Infantry Division and the airborne divisions in overseas combat during the war, it is not surprising that the airborne training of the 2d Division is not so well known. Today, we tend to think of "airborne" in terms of the parachutes used within those units. But in the formative days of the Army's airborne forces, there were *parachute* battalions and *air-landed* battalions. Both types traveled to the battlefield by aircraft and were literally "airborne" forces. By this definition, the 2d Infantry Division, during 1941 and 1942, was indeed an airborne division.

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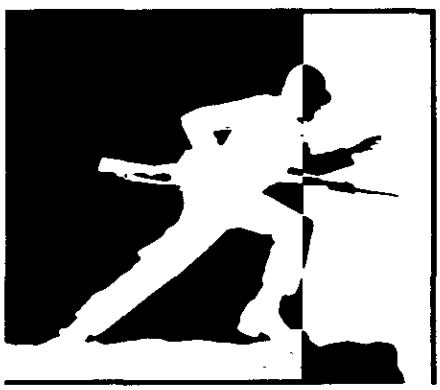
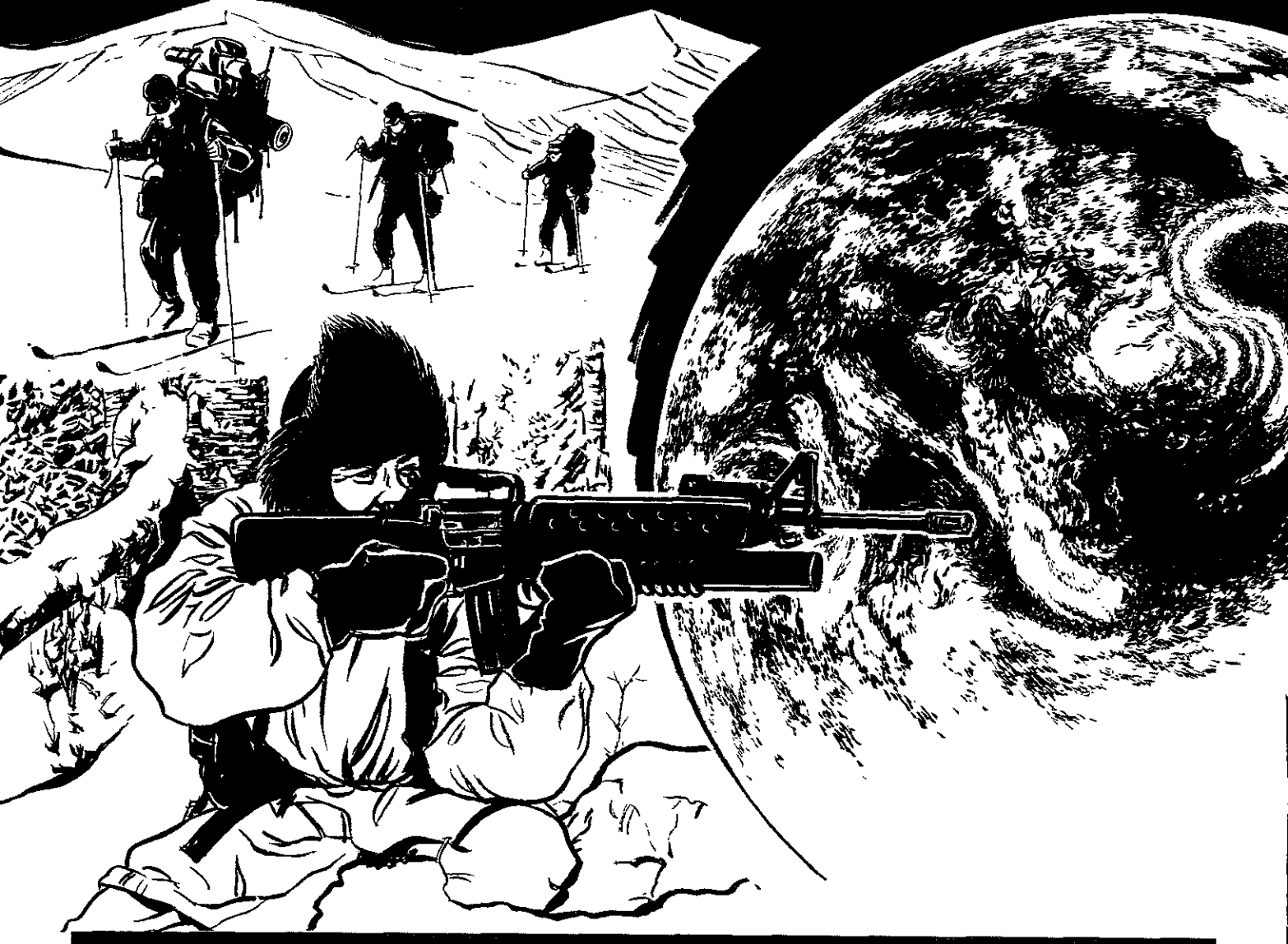




COLD REGIONS:

ENVIRONMENTAL INFLUENCES ON MILITARY OPERATIONS, PART 2

BRIGADIER GENERAL PETER W. CLEGG
COLONEL ROBERT H. CLEGG

EDITOR'S NOTE: This article is the second in a two-part series on the environment in cold regions and the way that environment affects military operations. The first part (in the July-August issue) detailed the climatic conditions and the terrain found in these regions and discussed the resulting effects on observation and fields of fire, cover and concealment, and movement. This second article discusses the influences of these conditions on soldiers, equipment and facilities, support, and combat operations. (Please note a correction to the first article on page 28, second paragraph: The U.S. Army did not engage in operations in Iceland in World War I. Rather, our first World War II deployment was to Iceland.)

In cold climates, survival rapidly becomes the major concern. Even with the soldiers' survival assured, cold still

affects their performance by inflicting physical injury upon them and impairing their psychological stability as well. Precipitation, wind, and terrain intensify the effects of temperature and influence safety. Although soldiers cannot acclimate to cold as they can to heat, training in the effects of cold conditions allows them to take certain precautions.

The cold kills. During Napoleon's withdrawal between Berezina and Vilna, 40,000 soldiers perished from cold in four days. A fresh division numbering 15,000 dispatched to assist lost 12,000 to the cold in three days. At the same time, Russian losses to the cold numbered 83,000.

During their winter war with the Soviet Union in 1939-1940, the Finns destroyed the first two divisions invading their country using harassing operations on skis, isolating groups of forces from supplies, and hitting the easily detected Russian field kitchens. The Soviets suffered 48,000 men killed and 158,000 wounded or injured in the early fighting, mostly from the cold. From 1 January to 31 March 1942, the Germans sustained 14,236 casualties from frostbite. Overall, during Operation Barbarossa, the Germans lost some 100,000 soldiers to frostbite, including 14,000 who required amputations.

In November and December 1950, U.S. units in Korea suffered 7,000 non-battle casualties, primarily from frostbite (35 cases per 1,000 soldiers in the combat zone). Cold injuries peaked when the intensity of enemy activity increased; soldiers had to leave sheltered positions, lie on the frozen ground, and stand guard at night. On the Kot-o-ri plateau in early November, temperatures dropped to -8 degrees Fahrenheit, winds were 30 to 35 miles per hour, and U.S. soldiers experienced their first shock of cold. Even though the temperatures would be colder (-25 degrees Fahrenheit) as the winter progressed, the effects of this first shock wave were severe. Within two days, more than 200 men in a single regiment collapsed from the cold. Stimulants had to be used to counter depressed breathing. The 7th Division treated 142 men for frostbite as early as 23 November. (Americans in Korea learned that the hot temperatures, characteristic of cold regions in the short summer, also caused major problems. On 7 August 1950, for example, temperatures reached 120 degrees Fahrenheit, and the heat prostration cases were six times the number of enemy-inflicted casualties.)

It is the cold of the long winter, however, that presents the major challenge. In the plains of Russia, the temperature regularly drops to -60 degrees Fahrenheit, in winter, and in Korea -30 degrees is not unusual. These temperatures are also routine in Canada and Alaska.

Frostbite, the major threat, can occur at 32 degrees. Its symptoms are numbness and tingling, and discoloration (with first a red appearance, then pale or waxy white, and, for darker-skinned soldiers, a grayness). Once a soldier has had this injury, he becomes more susceptible, and black soldiers are more susceptible than others. The use of alcohol or drugs speeds the loss of body heat and increases susceptibility. Keeping the blood circulating is a preventive measure, as is proper clothing. Layers of clothing must be worn loosely and head gear is imperative, since much body heat is lost through an uncovered head.

With warmer temperatures of up to 50 degrees and wet conditions, trench foot becomes a problem, because feet perspire more readily than other parts of the body. Changing socks regularly to keep feet dry is the preventive measure and leaders must ensure that this is done. Other concerns, such as dehydration, hypothermia, fatigue, poor hygiene, and lack of nutrition, all lead to reduced performance and susceptibility to heat or cold injuries.

In below-freezing temperatures, contact with liquids is hazardous. Fuel spilled on a bare hand leads to immediate frostbite. Falling through ice on a lake or stream can result in hypothermia, another killer. Water does not have to be freezing to cause injury; however at 60 to 70 degrees Fahrenheit, it can cause loss of consciousness in two hours. In water up to 40 degrees, a soldier may lose consciousness in only 15 minutes. During the Korean War, for example, men of Company L, 3d Battalion, 17th Infantry began to wade into a shallow stream in air temperatures of seven degrees below zero. When it became apparent that they would be frozen almost immediately, they were called back. Their clothes had to be cut from them, and the abortive crossing resulted in 18 frostbite cases.

Cold injury results from unpreparedness. Both the likelihood and the extent of injury can be reduced if soldiers are active and properly clothed. (It is better to be slightly cold than overdressed, since perspiration can become excessive and speed up heat loss.) Dryness causes perspiration to go unnoticed, so water intake becomes as important as in desert climates. *(See "Environmental Influences on Desert Operations," by Colonel Robert H. Clegg, INFANTRY, May-June 1992, pages 28-34.)* Lack of activity, which may be unavoidable in combat situations, can be a prime cause of cold injury. Sitting in foxholes or even lying on the ground, whether to fire weapons or repair vehicles, increases susceptibility. Soldiers must be kept moving.

Shelter is vital but hard to find. In 1941, the 6th Panzer Division in Russia occupied open terrain in temperatures of -50 degrees. The division sustained 800 frostbite cases daily. When the soldiers found hand tools useless for digging foxholes, they blasted craters into the ground and built improvised shelters, thus reducing frostbite cases to four a day.

Personal hygiene is another preventive measure. Sanitation can be difficult (especially waste disposal), but attention to it is critical. Nutrition is also critical. Troops burn up a lot of energy working in cold temperatures. In the Korean War, soldiers ate candy for energy at alarming rates (six or seven Tootsie Rolls in 10 to 15 minutes).

Logistics requirements in cold regions (for food, water, fuel, and clothing) are more than twice the requirements in warmer climates. This places an increased workload on soldiers, who can easily be burdened with more than 90 pounds of clothing and equipment. The depth of snow or mud also makes foot movement exhausting, and fatigue makes soldiers more susceptible to injury. Rotation and rest periods are required. Sleeping in vehicles, however, is just as unsafe

in cold regions as anywhere else, because of the danger of carbon monoxide from heaters. And unheated vehicles are colder than tents.

Many other aspects of cold-region operations cause problems for soldiers. Vast flat areas covered with snow reflect solar energy and produce snow blindness as well as sunburn. In Arctic summers, when the ice and snow melt, the abundant moisture brings with it mosquitoes and flies. These insects distract the soldiers' attention and cause discomfort, which can lead to mistakes and injuries.

A psychological hazard called "arctic hysteria" results from short days, long nights, persistent cloud cover, and cold temperatures. This ailment is characterized by passivity, low morale, depression, insomnia, claustrophobia, and suicidal tendencies. In below-zero temperatures, these states of mind are killers, because they lead to personal neglect, inactivity, and carelessness. Fear of isolation and freezing to death can get out of control. German accounts during World War II reported soldiers who became apathetic and indifferent, which destroyed their will to survive.

Arctic winds intensify the effects of cold by creating wind chill. As air moves across the flesh, the body loses heat. At -20 degrees Fahrenheit with a wind of 25 miles per hour, the wind chill is -75 degrees Fahrenheit. Or if a soldier is riding in an open vehicle moving at 20 miles per hour into a wind of 10 miles per hour with a temperature of 15 degrees Fahrenheit, the wind chill is -25 degrees, and that soldier's exposed flesh will freeze in one minute. The blast from propellers and rotors creates the same situation. Strong winds such as the williwaws of mountainous coastal regions kick up debris that can cause injury to soldiers. Trees and structures blown down by strong winds also cause injuries. Winds are responsible for blizzard conditions that can disorient soldiers, isolate positions, and lead to life-threatening situations.

The terrain in cold regions can also be a source of injury to soldiers. The rocky surfaces of volcanic mountains lead to foot and ankle injuries. On steep slopes of Alpine-like mountains, rock falls and avalanches occur regularly. During the Korean War, the bare 60-degree slopes of the Naktong Mountains, coupled with 100-degree temperatures, caused more U.S. casualties than enemy action. Glaciers are dangerous because they move, and huge blocks of ice fall off. Soldiers have disappeared into crevasses and have been crushed.

Effect on Equipment and Facilities

During World War II, the Soviet commander of the Southwestern Front encouraged his comrades by saying: *The great danger for the German command is that the first big change in the weather will knock out all their motorized equipment. We must hold out as long as and in any way possible but immediately go over to the attack when the first few days of cold have broken the back of the German Forces. This backbone consists of the tanks and motorized artillery that will become useless when the temperature hits 20 degrees below zero.*

As the Germans approached within nine miles of Moscow, winter struck with -40-degree temperatures. The soldiers were so numb they could no longer aim their rifles. Firing pins shattered, recoil liquids froze in machineguns, and artillery rounds detonated with little effect in the deep snow. The Red counteroffensive then began. German General Heinz Guderian later complained that his tanks were breaking down in the cold while the Soviet tanks kept running.

The cold obviously affects the performance and durability of military equipment and facilities. Temperature, precipitation, and wind cause equipment failure and damage. Lubricants become stiff; plastics and rubber become brittle; gauges, dials, and linkages stick; brakes freeze to drums; fuel tanks, filters, and fuel lines become blocked; protective paints chip and lead to corrosion; battery efficiency is reduced; drain plugs freeze tight; power train breathers and vents clog from slush; and windshields crack easily, especially when hit by warm air.

During the Korean War, troops complained that their vehicles froze up on the move, brakes grabbed, and transmissions stiffened. Keeping vehicles moving is a challenge when the cold is intense enough to halt them; add a few feet of snow, and engines and transmissions are taxed. In mud, engines and transmissions can burn up if a vehicle is improperly driven. It is important to operate in low gear to preclude stalling. Deep snow tends to pack under the hull, which can lift the vehicle and reduce traction. Soviet drivers are taught to shift immediately to reverse when tracks lose their bite and spin. They are also taught to accelerate gradually and smoothly on ice and snow. It is best for a driver to avoid the tracks of the tanks in front of him and plow his own course over fresh snow.

Artillery has unique problems in frozen environments. Aside from the cold, which affects the accuracy of a gun and also makes it dangerous to touch with bare hands, it cannot be stabilized because the ground is frozen and the blades cannot dig in.

The gun tubes expand and contract with temperature changes when firing and then remaining silent for extended periods. The effectiveness of ammunition can vary considerably. Projectiles may not penetrate the ground. If snow is deep in winter (mud or muskeg in the summer), shrapnel is confined and absorbed. Field Manual 31-71 says the impact burst can be reduced by 80 percent, and this also applies to grenades. The frozen ground reduces the penetration of all munitions. During the Korean War, aircraft munitions actually bounced off the frozen ground.

Fuzes are affected by cold. They run slower, and some types of variable time-fuzes malfunction at 0 degrees and below. Proximity fuzes can "see" through dry snow and sense the ground, but wet snow may cause premature detonation. Point detonating fuzes can get buried in the snow and not detonate at all.

Illumination rounds tend to malfunction because of the many moving parts and the parachute. Cold, dry conditions inhibit the development of smoke plumes. White phosphorus is most affected, because its heat can bury it in the snow.

A positive result for artillery is that exploding rounds send out frozen clods, stones, and chunks of ice, which are as deadly as shell fragments. Small arms have problems as well. The metal can get so brittle that rifles break, and automatic weapons jam as the lubricants freeze. Cold also changes the zero and slows firing rates as gas escapes more slowly. For rockets and missiles, propellant burn is slower, which reduces range. The back-blast danger area is tripled. Heavy firing of weapons causes ice fog, which obscures visibility and reveals firing positions.

Communications equipment—especially antennas, ground wires, and radios—is affected by frozen conditions. Icing of one-fourth inch on antennas reduces range and increases noise. Antennas get out of tune, especially at higher frequencies. Setting up antennas is a problem, because the stakes cannot be driven into the frozen ground; mountain pitons might be used to correct this. Wires and poles break from the pressure of ice and wind.

Frozen ground offers high electrical resistance, and no more than one transmitter should be connected to the same ground. A drill may be needed to put grounding rods in. Salt can be added to water and poured on grounding rods to increase their effectiveness. Ranges are generally increased in the cold, dry, stable air, but cold radios need to be warmed. Batteries and plastic and rubber parts are susceptible to reduced performance. Deep snow and snow-covered evergreen trees weaken signals.

Soldier during winter training exercises. Logistics planners must see that soldiers have adequate clothing and equipment.

Sensors operate well in cold, dry environments. A test was conducted in Baumholder, Germany, with two tanks—one with an operational personnel heater and the other without. With both engines and the heater shut down, the heated tank "glowed" for three-and-one-half hours longer than the one without the heater. Light-intensifying sights increased the likelihood of target hits by 300 percent. Moderate snowfall degrades infrared systems such as thermal sights and laser designators. Snow-covered terrain creates false targets for acquisition systems operating in the infrared and millimeter wavelengths of the electromagnetic spectrum.

Icing is a major cause of air crashes in cold climates. It causes a power loss to induction systems, decreases lift, causes dangerous vibrations, and interferes with elevators and rudders. Anti-icing and de-icing equipment is required for aircraft operating in freezing temperatures. Airframes also contract in the cold more than their control cables, and sensitivity to such changes can cause air crashes. Ice on the Pitot tube can cause instruments to give false readings, and ice on windshields obscures the view.

Since water expands by 10 percent when it freezes, containers will crack if filled beforehand. Gortex clothes are warm, but they can be noisy when temperatures drop and can alert the enemy. Protective clothing, particularly masks and gloves, becomes brittle in extreme cold, and placing them on skin can induce injury. Decontamination presents particular problems because it requires water.

Temperature, snow, and strong wind affect facilities. Alternate freezing and thawing buckles asphalt and cracks pavement, damaging roads, airfields, and building foundations. The change from frozen ground in winter to moist ground in summer also damages and jars fixed facilities such as rails, roads, and buildings. Bridges and port facilities sustain damage from ice when a spring thaw occurs, and huge chunks flow downstream hitting abutments and docks.

The weight of compacted snow and ice can collapse buildings, tents, and hangars. Heavy winds associated with extreme variations in air pressure create hurricane-like conditions, damaging structures, downing utility poles, and disrupting transportation centers. Steep slopes can be a source of danger for facilities, because unstable rock in mountains can cause landslides, rock falls, and avalanches. Structures should be sited only after these have been considered. Finally, the mountainous areas are subject to earthquakes and volcanic activity.

Effect on Support

An army does not go far in any environment without a well-coordinated and complete logistics system, but such a system is even more critical in cold regions. A logistical system depends upon a base and its ability to move personnel, equipment, and supplies to and from the base.

In the far north, there are few sites suitable for a logistical base. In the more moderate, urbanized cold regions, many locations are available, and many bases can be established. In severe cold areas, however, there are limited transportation and communication networks, and such networks are not well developed. Few structures are available for storage. Because of these limitations, the base, once established, becomes a likely enemy target and may even be the ultimate objective. Combat forces must therefore be dedicated to defending the base.

Logistics planners determine what supplies and equipment are required and in what quantities. For cold regions, special equipment is required—plows, clothes, drills, cross-snow vehicles, skis. The Germans, outfitted with summer uniforms, faced subfreezing temperatures in Russia and thousands died as a result. The 7th Infantry Division's biggest mistake when its soldiers attacked Attu was their inadequate clothing and gear. The soldiers had little protection from the rain and wind. Their high-topped leather boots were not waterproof, and they had been trained in California for deployment to North Africa and were not prepared for the rigors of cold and wet weather. (The division later deployed to Leyte in the tropics.) They had not been issued their equipment until they were on board the ship. Their cold, wet feet were rubbed raw, leading to hundreds of cases of frostbite, trench foot, and gangrene.

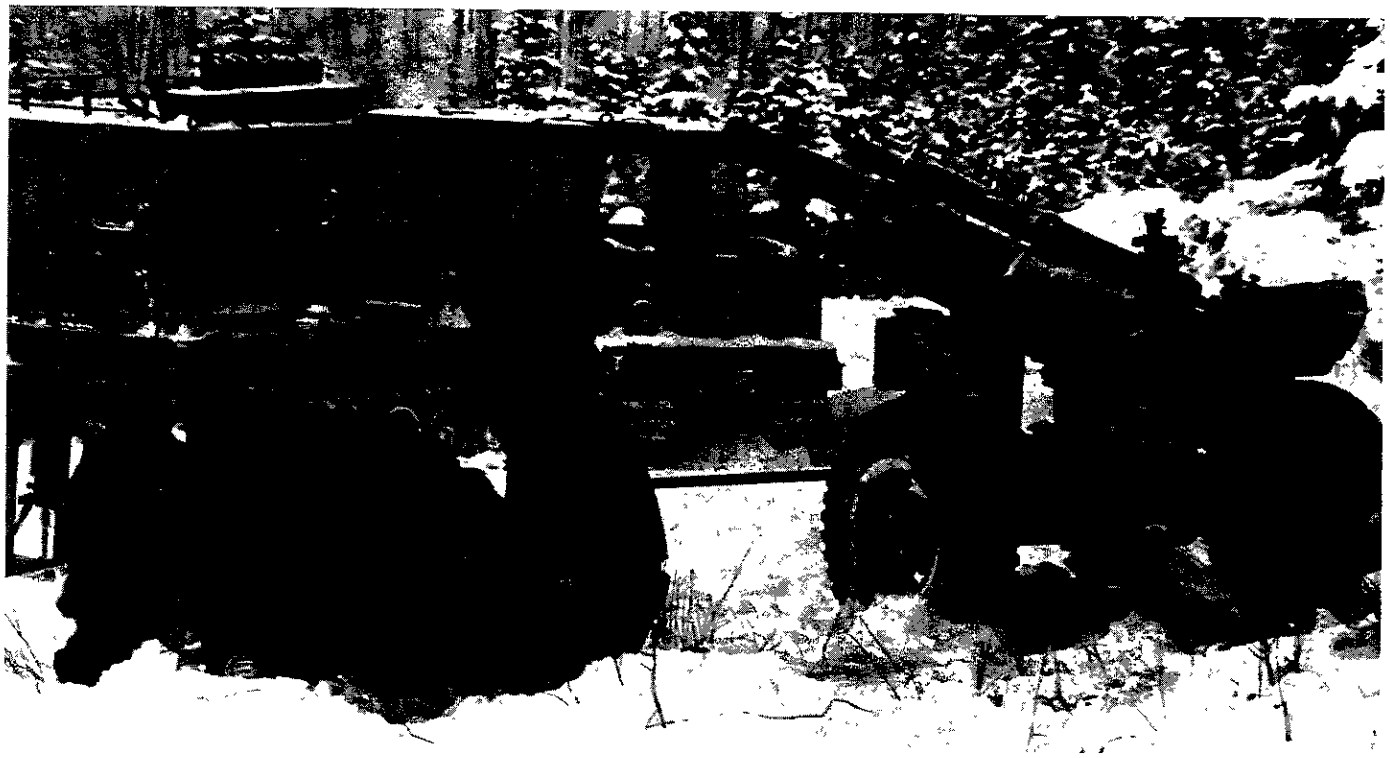
Because summers can be warm in cold regions, both summer and winter clothing and camouflage are necessary. This increases the variety and quantity of materiel required, and thus the complexity of the logistical task. The extreme cold, deep snow, and mud reduce the durability of equipment, and larger stocks must be on hand than in more temperate areas. Food, water, and fuel consumption is higher in cold regions. Fuel usage has been estimated at ten gallons per day per squad for heating alone.

All classes of supply must be moved first to the logistics base and then issued to units, and this can be hampered by trafficability and air delivery limitations. Engineers are part of the solution, but road and rail construction is difficult, expensive, and time-consuming. Aircraft are subject to all the restrictions previously discussed, and their number and load capacities are limited. Getting materiel to the soldier may be the biggest challenge.

Once supplies reach the base, storage is the problem. Warehouses must be warmed; highly perishable supplies such as medicines require special handling. Water-soluble medicines will freeze. In Korea, for example, medics had to keep morphine inside their clothing so it would be usable when needed. Plasma had to be warmed for two hours before it could be used.

Water and fuel require special storage. In temperatures below 14 degrees Fahrenheit, high charges of static electricity can make fuel-handling dangerous. Food, including MREs (meals, ready to eat), freezes and is difficult to eat without heating.

Because facilities for issue are likely to be limited, warm shelters must be established for waiting areas and break areas. Facilities for maintenance must be warmed; little maintenance can be done in the open. Maintenance demands are greater because the stress on the equipment is greater and



Soldiers secure an A-22 bag that will be slung beneath the howitzer as it is hooked up to a CH-47 helicopter. Such air movements are vital to large-scale offensive operations in cold climates, because ground movement is too slow and too vulnerable.

Small-unit supply vehicles can increase both the range and the speed of infantry units.

repairs take longer. During winter, in the arctic regions, the hours of daylight are shorter and electrical lighting is required. Not getting what is needed at the right place and time can mean terrible suffering and potential disaster.

Effect on Combat Operations

Maneuver depends on trafficability, and "go" trafficability in cold regions requires frozen, dry conditions. Cold temperatures freeze marshes, lakes, rivers, and soil, and dry conditions reduce snowfall. With warm and wet conditions, trafficability quickly becomes a "no go." Wet conditions in winter allow for the accumulation of deep snow, but as temperatures rise, the melting snow and ice create fast-flowing streams, lakes, and marshes. As temperatures hover around the freezing point, alternate freezing and thawing make trafficability difficult to predict. The freezing usually occurs at night, which means movement must also be at night, or early in the morning.

In October 1941, for example, the German Blitzkrieg came to a halt because of impassable Russian roads. Three panzer groups were spread out over 30 miles, giving the Russians their first opportunity to fight on equal terms. The Russian T-34 tank, with its wide tracks and higher hull-to-ground distance came into its own. In January 1942, near Kursk, heavy snowfall stopped the German tanks while the T-34s, having greater ground clearance and lower ground pressure, swept across the flat terrain and destroyed the German tanks.

Also in January 1942, Company G of the German 464th Infantry Regiment, recognizing the effect of deep snow on movement, escaped encirclement by the Russians when they withdrew from a village in three feet of snow over a path they had trampled beforehand.

As another example, on 16 April 1952 in Korea, a hard rain turned the ground into a sea of mud. In July, six days of rain flooded streams and swept away bridges. Landslides from moisture-laden soil blocked some roads and washed others away. Swollen rivers and treacherous roads restricted support and delayed movement into the Punch Bowl area until August. Earlier (in July 1950), such conditions created landslides that closed off coastal roads and slowed the North Korean advance.

To facilitate movement in deep snow, soldiers must travel on skis or snowshoes, or use aircraft. The Finns, experts on skis, achieved great success against the Russians in their 1939-1940 war. During World War II in the far north, each side employed "skiborne" troops.

Mountain slopes in northern areas are usually too steep for vehicles—in Korea, Scandinavia, Alaska, Canada, and much of Siberia. A 45-percent slope is "no go" for tracked vehicles, and a 30-percent slope stops wheeled vehicles. The thick taiga forest limits movement, because the trees are too close together for vehicles to pass and too thick for them to run over. Trafficability is a "no go" if the trees are within 15 feet of each other for tracked vehicles and if they are within 12 feet for wheeled vehicles. Tree diameters greater than six inches for tracks and four inches for wheels create a "no go."

Drainage also impedes cross-country movement. When crossing frozen lakes, ice thickness and vehicle spacing are critical. To support wheeled vehicles weighing four to ten tons, ice should be from 24 to 39 centimeters (9½ to 15½ inches) thick, and allowable distances between vehicles should increase from 15 to 35 meters. For tracked vehicles weighing 40 to 60 tons, ice thickness should be 63 to 77 centimeters (25 to 31 inches), and vehicle spacing should be 40 to 45 meters. Speed should be three to five miles per hour,

and driving should be steady without gear changes. For foot soldiers, five centimeters (2 inches) of ice thickness is required with intervals of five meters between soldiers; for a squad column, 10 centimeters (4 inches) is advised, with intervals of 10 meters.

In northern areas, land navigation is difficult, which complicates combat operations. Compasses provide less accurate readings, because the farther north, the greater the declination. The northern reaches are not well-mapped, and photos may have to substitute. The monotony of the vast flat plains and the deep boreal forest add to the difficulty. The global positioning system, however, can alleviate these concerns.

Reconnaissance is particularly critical. Delays due to unforeseen circumstances can spell disaster during ground reconnaissance. Air reconnaissance is easier, but weather can also limit flying. Aerial photos are often the only way to survey current conditions along a route. For example, fog limited the ability of U.S. soldiers to reconnoiter the island of Attu in the Aleutians during World War II; they thought only 500 Japanese soldiers held the island when, in fact, 2,300 were there. Similarly, on Kiska, another Aleutian island occupied by the Japanese, a U.S. force of 34,000 with three battleships attacked only to find that the Japanese had evacuated the island.

In cold regions, reliance on aircraft alone is risky. Aircraft obviously provide the high-speed movement required for offensive operations, but in winter, as well as in transitional seasons, thick fog can engulf vast areas within minutes. Helicopters need at least one-half mile of visibility during daylight and one mile at night, and fixed-wing aircraft need twice these distances. Fog makes airborne operations hazardous because it conceals drop zones. Such operations require 900-foot ceilings (1,250-foot for training) while air assault operations can go on with as little as 300 feet in flat terrain, 500 in hills. Fog was a continuous hindrance to operations in the Aleutians: In the fall of 1942 the U.S. lost 69 planes, 63 of them to fog and only six to the enemy.

The enemy can also use fog to conceal a ground attack. On the morning of 10 July 1950, ground fog over the Korean rice paddies concealed the North Korean advance. U.S. soldiers shot blindly into the fog. Men on the ridge could hear tanks but could not see them. The next morning four enemy tanks crossed the minefields and were soon in the area of the 3d Battalion, 21st Infantry. The U.S. command post was destroyed. One thousand Koreans enveloped the battalion and reduced it to 40 percent strength by using fog to conceal their attack.

Other problems for air operations are icing and wind. Winds of 30 knots at jump altitude or more than 13 knots on the drop zone preclude airborne operations. Cold temperatures inside aircraft limit the time crews and soldiers can be flown around. A positive note is that the denser air associated with cold temperatures allows for better lift and therefore bigger payloads. Runways can also be shorter than in hot areas.

In spite of the difficulties, aircraft are vital to successful large-scale offensive operations in cold climates, because ground movement is just too slow and too vulnerable. Modern enemy weapons, specifically surface-to-air missiles and air defense guns, threaten air operations and must be suppressed.

Amphibious operations are restricted by wind, because wind increases the height of waves, which is the primary limiting factor. Water temperatures also limit amphibious operations; the water in arctic regions is too cold, even in the summer.

In cold regions, the environment favors the defense, because a unit that moves is vulnerable. The battle cannot be won without offensive action at some juncture, but that action must be lightning quick with limited objectives.

A recommended strategy might be to build a solid defense, attempt to draw the enemy in, and then counterattack. If the enemy can be induced to attack, he is likely to exhaust his resources. On 15 November 1941, the Germans used such a plan when the Russians exploited a snowstorm to conduct a surprise attack on a hill in the glaciated East European plain. The Russians had not been issued winter uniforms, and the temperature fell to 16 degrees Fahrenheit. Promises of vodka and the use of stimulants resulted in initial success; but cold and exhaustion made the Russians vulnerable, and the Germans counterattacked, killing 70 and capturing 60.

Another strategy might be to cut enemy lines of communication, since forces will quickly succumb without fuel and food. Wide sweeping envelopments are too grandiose for this environment. The Petsamo-Kirkenes operation in October 1944, the largest arctic combat operation ever, demonstrated that for an offensive to succeed, the mobility problem had to be solved. The Russians created and maintained a road network. This network, along with properly clothed and equipped troops, brought victory.

Environmental influences determine, in large measure, the outcome of combat in cold regions. The side that best adapts to and uses these influences will be victorious. Wars fought in cold regions have been among the most brutal in history and with incomprehensible suffering and death. Preparation, knowledge, and training are the requisites for success. Commanders who plan operations in cold regions but live elsewhere must understand the environment into which they are sending and leading their soldiers.

The U.S. Army will continue to train in these cold areas because we do not know where and when the next war will be. But if it is in the north, our Army must be ready.

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TRAINING NOTES

Range Cards
In the Deliberate Attack

CAPTAIN CHESTER A. CHAR
FIRST SERGEANT DEWAYNE CHAPMAN

In a deliberate attack, the objective is often obscured. The attacker has the option of using planned smoke from mortars and artillery, as well as from smoke pots and generators, to conceal his approach to the objective. He might place smoke directly on the enemy's positions to obscure the enemy's field of vision. And even if screening smoke is designed to go in between the assault element and the objective, observer-gunner data and an unpredictable wind may "blind" the gunners in the support element. During the attack, flames and smoke from burning materials may also reduce the visibility of the objective; and, of course, the defender may elect to smoke his own positions to conceal himself.

Whatever the source, obscuration between the support element and the objective reduces the effectiveness of the supporting fires. The leader of the support element cannot see the targets he identified earlier, and the gunners cannot see the impact of their rounds in relation to the maneuvering troops.

During a live-fire training exercise, the observer-controller with the support element normally orders a cease fire when the objective is obscured. During a MILES force-on-force exercise, however, the gunners tend to continue firing, even when they cannot see the objective. They know they can't possibly injure fellow soldiers with simulated "bullets." But this is not the type of lesson we want our gunners to learn, and their fires are equally ineffective.

We believe, on the basis of a three-week platoon attack live-fire exercise in which we served as observer-controllers, that this reduction in effectiveness can be countered by the use of

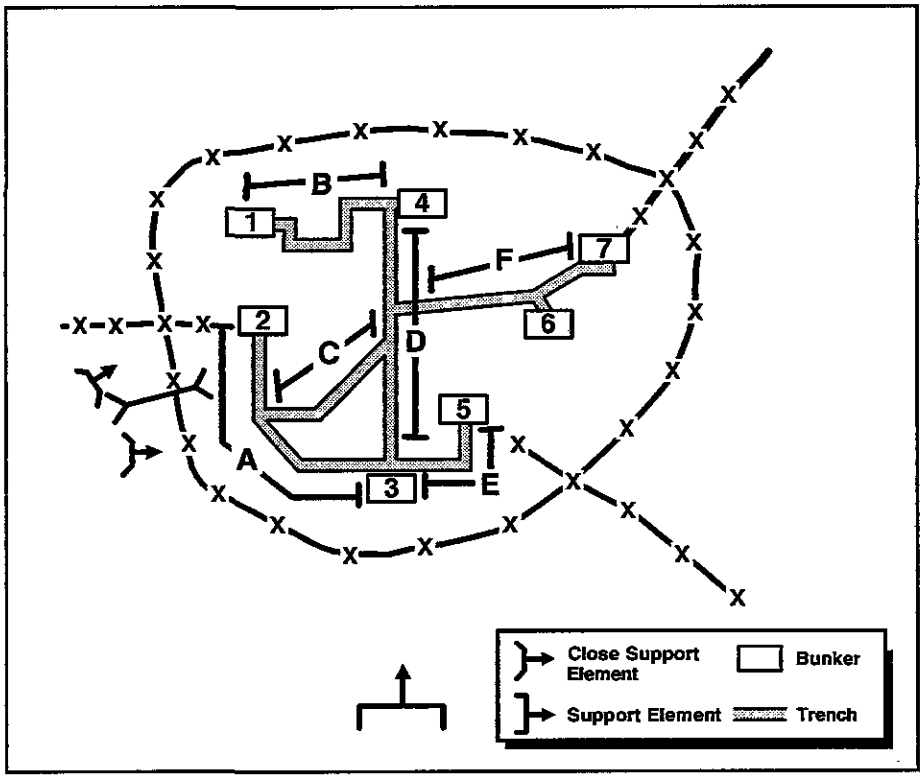

Figure 1

range cards in the support-by-fire position.

The employment of range cards by support element machinegunners allows for the sustained suppression of targets, increases the assault element leader's ability to influence the control of supporting fires, and decreases the chances of fratricide. This is not a new idea; rather, it is an old one that has fallen into disuse.

A range card offers positive control that can counter the effects of unpredictable conditions. It gives the gunner a reference to his targets. He can continue to place effective fires on known or suspected enemy locations, shift them to other known or suspected enemy locations, and use searching and traversing fires to place rounds along likely routes, such as trenchlines, on the objective. Even when the gunner cannot see the objective, the range card allows him to be selective in placing his rounds and thereby to increase the effectiveness of his suppressive fires.

A range card also allows for tighter synchronization between maneuvering assault elements and supporting fires. If the commander obtains detailed information, such as an aerial photo or a sketch of the objective area, he should be able to determine known or likely enemy positions and apply numeric identification or codes to each target (Figure 1). With such a system in place, the commander can then more precisely define the effects he wants from suppressive fires on the objective.

In the following example, the commander elects to use the fires provided by the close support element to suppress bunkers adjacent to the breach site (bunkers 1 and 2) and trenchlines A and B, while the machineguns of the support element isolate the objective by engaging bunkers 3 and 4 as well as trenchlines C and D (Figure 2). The assault element leader, once his lead clearing team has entered the trench, shifts fires from trenchline C and bunker 3 to trenchline E and bunker 5 while maintaining all other suppressive fires that give the clearing team freedom of action within trenchlines A and C (Figure 3).

Once the clearing teams have cleared bunker 2, trenchlines A and C, and bunker 3, he shifts supporting machinegun fires from trenchlines D and E and bunker 5 to bunkers 6 and 7 and trenchline F (Figure 4). When the clearing

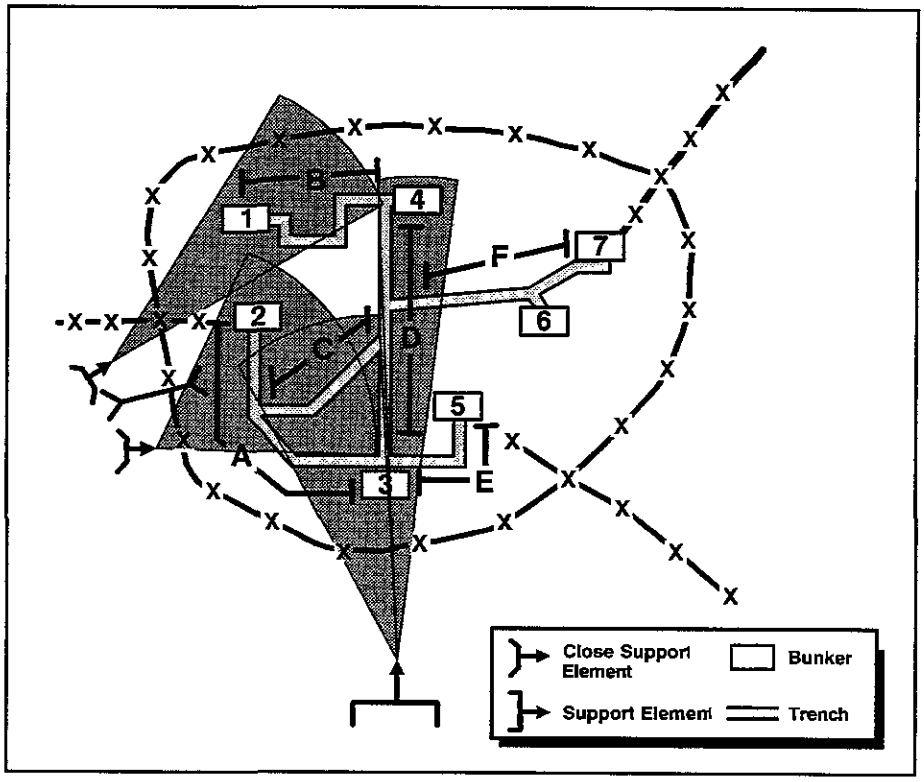

Figure 2

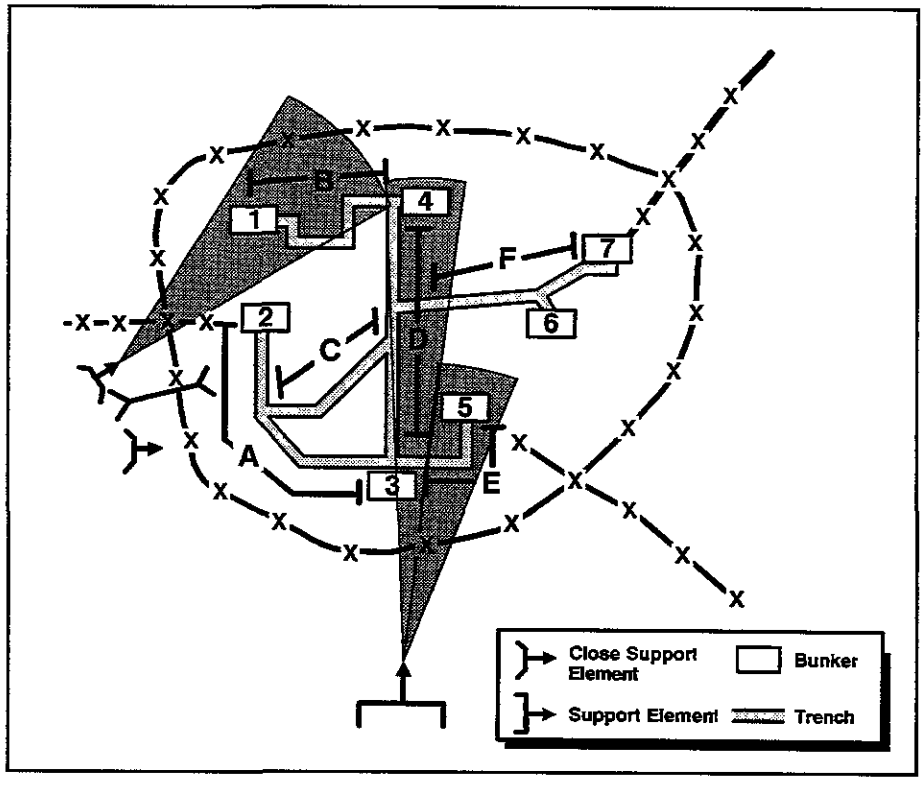

Figure 3

teams have cleared bunkers 5 and 4, the close support element can cease suppressive fires on trenchline B, allowing the clearing teams to continue the attack toward bunker 1 (Figure 5). Once the left half of the objective is clear, the supporting fires can be shifted off the objective, and the clearing teams can move under their own close suppression against bunkers 6 and 7.

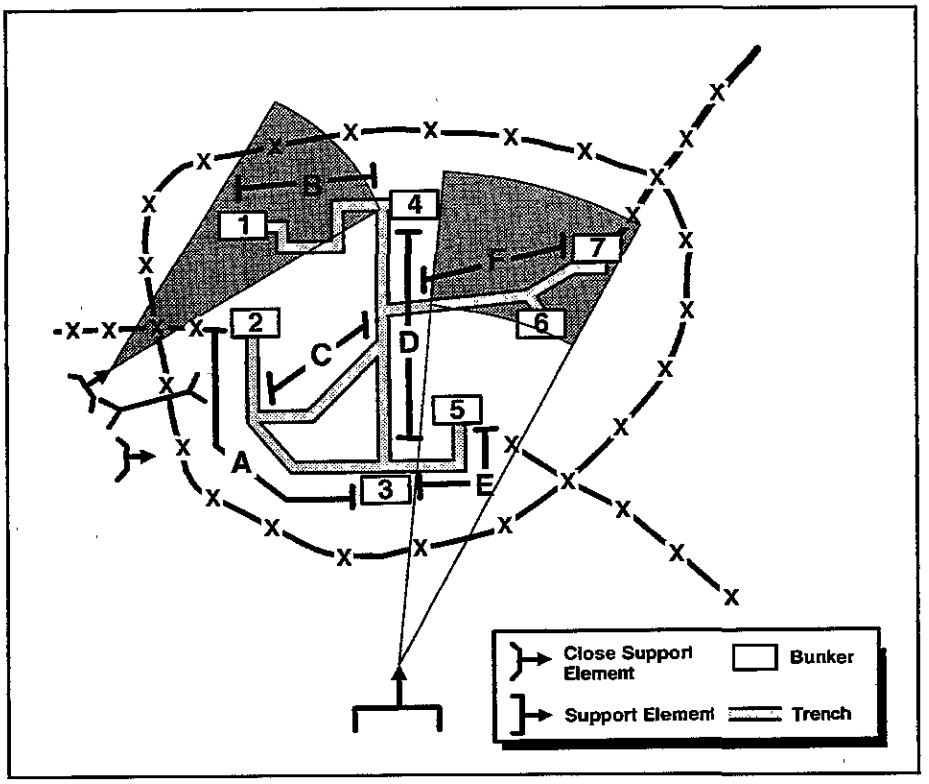

Figure 4

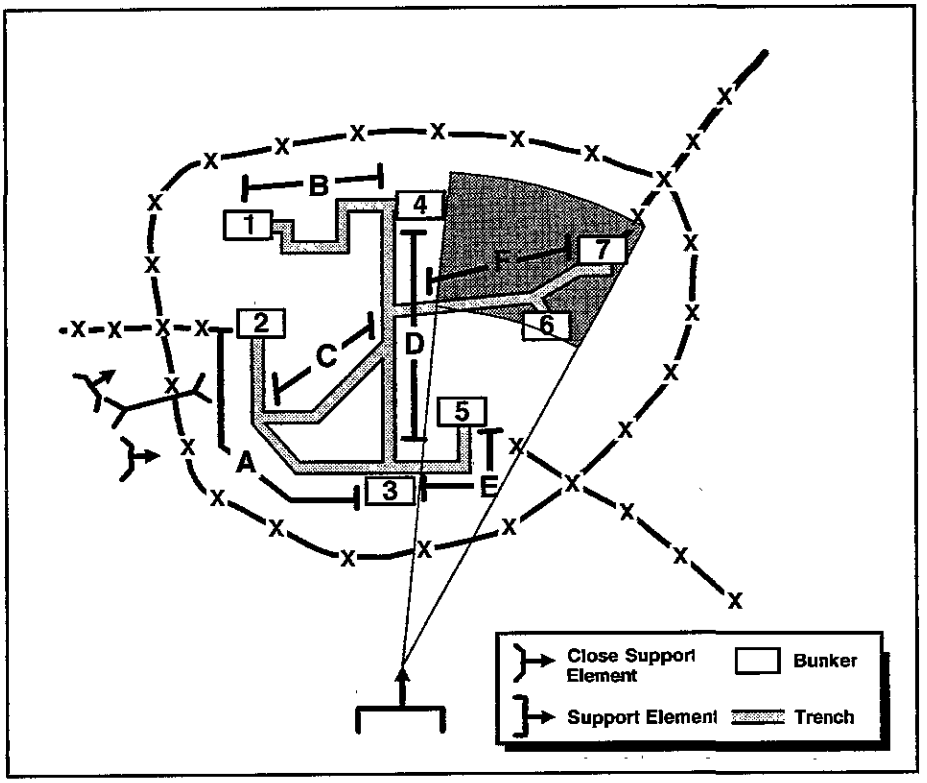

Figure 5

Even while the support element's vision is obscured, the range card also provides the assault element with additional firepower by allowing its leader to call for precision suppression while on the objective. As in the example used to describe the increased ability to synchronize fire and maneuver, if the targets are coded or numbered and the support element machinegunners can apply range card data to each target, the assault element leader can call for the suppression of specific targets as his soldiers negotiate their tasks.

The added control of range card data applied to supporting fires also directly reduces the probability of fratricide. The assault element leader can report his element's position in relation to target numbers and can shift supporting fires with relative assurance that he is not placing his soldiers in harm's way.

Range cards definitely should not be restricted to defensive applications. They allow for precision suppression and closer synchronization of assault and support elements, even when the objective area is obscured. By constructing and using range cards in the support element of a deliberate attack, a unit can improve the effectiveness of supporting fires, provide additional flexibility, and reduce the possibility of fratricide, even when his gunners cannot see the objective. And all of these, in turn, can increase the unit's likelihood of success on the battlefield.

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Infantry Breach Kits

CAPTAIN JOSEF R. HALLATSCHEK

Throughout the Army, we have improved our doctrine, tactics, techniques, and procedures on fighting in combined arms teams. At the combat training centers, however, units continue to stall at obstacles and lose momentum when engineer or armor breaching assets are not readily available. Once a unit loses momentum at an obstacle, it is rarely able to recover and go on to accomplish its mission.

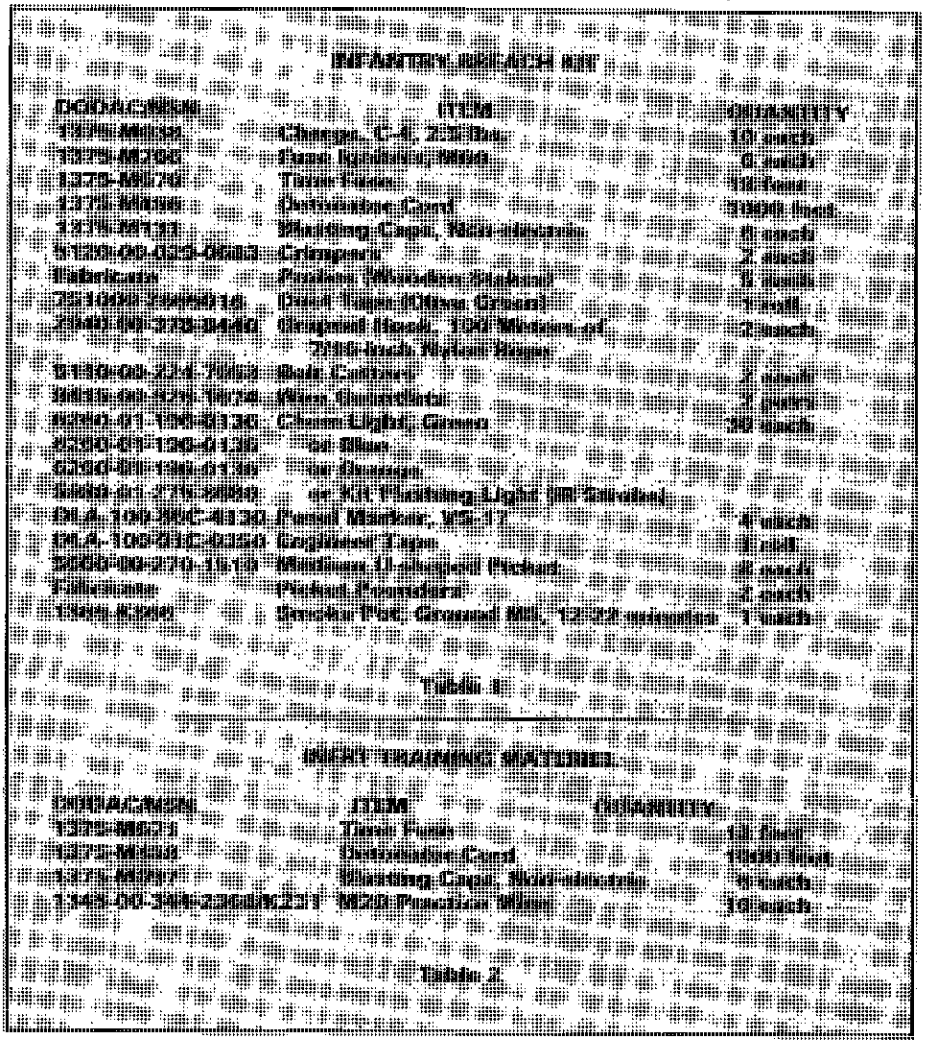
A standard breach kit for infantry units—mechanized platoons and light infantry companies—would help a lot. The kit I propose would give an infantry unit the equipment to breach any wire obstacle, breach one lane in a surface-laid minefield, and mark one lane. This kit can be modified on the basis of the soldier's load, the availability of Class V supply, and specific unit breaching and marking drills.

The recommended kit is made up of three components—minefield breach, wire breach, and lane marking. A complete list is provided in Table 1.

The minefield breach items are based on a breach of a typical doctrinal opposing force (OPFOR) minefield presented at the National Training Center (NTC). The OPFOR emplaces surface-laid antitank minefields of three to four rows each. The rows are 20 to 40 meters apart to form a minimum depth of 40 meters and a maximum depth of 120 meters. The normal density of these minefields is 550 to 750 antitank mines per kilometer front, or a density of .55 to .75 antitank mines per meter front. These mines are usually seismic with anti-handling devices and must be blown in place before an infantry unit attempts to breach the minefield.

To breach an OPFOR minefield, an eight-meter breach lane requires, at most, six charges of C-4 explosive. This leaves four charges in the kit to use in handling misfires or detonating any unexploded mines. Two fuse igniters and non-electric blasting caps are required to dual-prime the system, and the four remaining igniters and caps are used with the four remaining charges. Eighteen feet of time fuse provides about two minutes of delay for the dual-initiated firing system and for each of the remaining charges.

A smoke pot is included to provide obscuration during the breach. The remaining items in the minefield breach component are used in setting up the line main demolition system.



The items in the wire breach component are also based on a doctrinal OPFOR wire obstacle. The OPFOR uses wire obstacles either to reinforce a minefield or to tie an obstacle into a terrain feature, another obstacle, or a battle position. The wire obstacle is usually a non-standard triple concertina obstacle, and a grappling hook, bolt cutters, and wire gauntlets are all that is needed to breach it.

The final components in the breach kit are the lane-marking items. Some of these assist both near and far recognition. The near recognition items include chemlights and engineer tape, and the far recognition items include BS-17 panels and chemlights in different colors. The infrared strobe light can be very effective for a unit equipped with night vision devices.

This breach kit provides only the equipment needed to breach these wire and mine obstacles. The infantry unit must still train on the tasks necessary to use the kit properly. For help in establishing the required training program, leaders might use the following references: ARTEP 5-145 Drill, Engineer Drills, October 1990, outlines the battle drill for a minefield breach with hand-emplaced explosives. The demolition skills required to execute this battle drill are found in the Soldier's Manual for CMF 11, Skill Level 2. For help in understanding breaching theory and breaching tactics, I recommend FM 90-13-1, Combined Arms Breaching Operations. The list of inert training materials shown in Table 2 will also help in the development of a training program.

Within a battalion, this breach kit may be distributed either by standing operating procedure (SOP) or according to METT-T (mission, enemy, terrain, troops, and time). I recommend, however, that each mechanized platoon and each light infantry company have one complete kit on hand. Mechanized platoons can cross-load the equipment internally so that each squad carries a different component of the breach kit—lane marking, minefield, or wire breach.

Light infantry companies can cross-load these items among their platoons. These units can then be cross-attached within a mechanized task force or a light brigade with known breaching capabilities. A light infantry company can carry the breach kit in the combat trains with the first sergeant's vehicle and bring it forward when needed. With light infantry units, this kit will require minor modifications. U-shaped pickets, for example, could be replaced by the shelter-half poles, the picket pounders could be left out, and smoke grenades could be used instead of smoke pots.

As infantry commanders equip and train soldiers with this breach kit, they will be better able to maintain their momentum instead of stalling at an obstacle. With this kit, mechanized infantry platoons and light infantry companies will have the equipment to breach any wire obstacle, breach one lane in a surface-laid minefield, and mark one lane. Commanders will have their own "sappers" as organic combat multipliers and reduce their requirement for scarce engineer assets.

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Fire Support
In Irregular Warfare

CAPTAIN JOSE M. MARRERO

No commander wants to risk injury or loss of life among his soldiers when fire support can neutralize or destroy the enemy as effectively and at far less cost. Fire support is not limited to such conventional scenarios as the ones used in World War II, envisioned for Europe during the Cold War era, or used so effectively in Southwest Asia in early 1991. We must therefore forget about the myths and false concepts that overlook the use of this combat multiplier in irregular warfare. The United States' operations in Grenada, the swift, decisive action in Panama, and the use of mortars in El Salvador are only a few of the many examples where fire support has been used in this type of conflict.

Before using fire support in irregular warfare, leaders must consider some special characteristics of this type of conflict:

Fire Support Coordination Measures. The terrain and the mission in irregular warfare dictate the need for more fire support coordination measures. It is generally known, for exam-

ple, that many battles and skirmishes take place in or near heavily populated areas. Because of the nature of the terrain in those areas, snch measures as *no-fire areas* and *restrictive-fire areas* should receive increased attention.

Fire support officers at all levels are responsible for obtaining information about populated areas and making recommendations to their commanders. Fire support coordination measures contribute significantly to protecting both the civilian population and our own troops.

But these measures are not limited to populated areas. No-fire areas should be used anywhere friendly troops operate, and the operations overlay should be updated to reflect any changes in the situation. In the early stages of an operation, for example, when reconnaissance elements are sent to scout potential targets, no-fire areas should be away from the targets and properly designated.

Each coordination measure should be graphically illustrated so all agencies involved can understand it. For example, when a measure affects the Air Force, such as the airspace coordination area (ACA), it should be located on terrain that the pilots can identify from the air. An ACA provides a three-dimensional box in the air space for the purpose of attacking a target with more than one fire support means at a time, including close air support (CAS). The only safe area for pilots is inside the ACA; surface-to-surface indirect fires should therefore go over, under, or alongside the ACA but not through it.

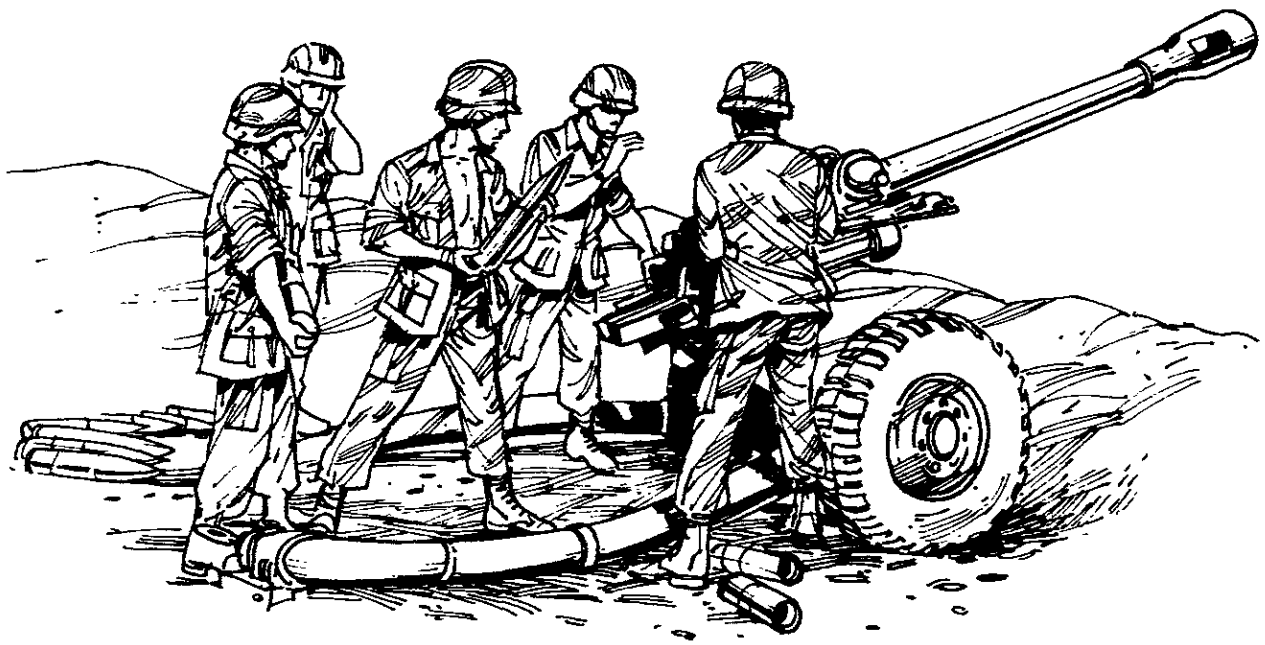
To prevent the cratering caused by rounds with point detonating (PD) fuzes in a helicopter landing zone, a restrictive-fire area should be established with signs indicating "PD fuzes prohibited." In air assault operations, which are often used in irregular warfare, the landing zone must be clear of craters to allow for clean landings. The time and variable time fuzes provide the best effect; that is, they yield air bursts and will clear the enemy area without leaving craters in the terrain.

Terrain. The use of fire support must be adapted to the combat terrain. Evidently, field artillery manuals are not based on this concept but are geared mostly to the possibility of large-scale military operations in Europe. One example is the size of a firing point for a field artillery battery—400 x 200 meters. An open area of this size might easily be found in Europe, or in the desert, but hardly in a jungle. Likewise, some manuals indicate that the distance between howitzers should be about 50 meters.

The only solution is to adapt to the type of terrain. For example, if the only suitable area measures 200 x 100 meters and the grass is one-and-one-half meters high, the field artillery advance party should be sent early enough, and with the necessary equipment, to cut the grass so the guns can be emplaced rapidly when they arrive.

Terrain also affects forward observer procedures. In the desert, it is appropriate for a forward observer to place the initial rounds behind the target during a fire adjustment, because distances are greater than they seem. But the process should be different in the jungle. Because of the density of the vegetation, the smoke produced by high explosive (HE) shells is difficult to spot. Smoke rounds (HC), not white phosphorous (WP) rounds, should be used during the adjustment phase to identify the rounds' point of impact and reduce the risk to friendly troops. Finally, high explosive rounds should be fired for effect after the fire adjustment phase has been executed.

The use of WP or smoke can also support the commander's deception plan. Because mortars and field artillery are mobile weapons, they can



place smoke wherever the commander wants the enemy to believe his unit is operating.

Another point to be considered is the round and fuze combination. An HE round combined with a delay fuze can penetrate treetops and spread both missile fragments and tree fragments, showering the enemy with a double fragmentation. Likewise, PD-fuzed HE used in rocky terrain will produce a double fragmentation effect by scattering rock fragments along with fragments of the projectile itself.

Forward observers must often adjust fires on the basis of the sound of an explosion, because jungle terrain and some mountainous terrain restricts their view. An observer must therefore develop his hearing as well as his vision.

If the terrain is too dense and the forward observer needs help, he can find emplacement instructions in Field Manual 6-20-50, page L-4. The fire direction center (FDC) can fire a marker round, usually white smoke, 300 to 400 meters forward of friendly troops. With this technique, the FDC simply establishes a target, fires the white smoke round, and transmits the coordinates of the point of impact to the forward observer. Thus, the forward observer is made aware of a known point of reference.

Close air support can be particularly effective in irregular warfare because of its precision and its destructive power. CAS is difficult to control in the jungle, however, because the pilot cannot see friendly troops through the dense vegetation. The use of smoke grenades to mark the position of friendly troops helps a great deal. In this type of terrain, the Air Force's heavy bombs (2,000 to 3,000 pounds) can clear the area and provide better observation.

The Enemy. In irregular warfare the enemy's immediate intention and direction of attack normally cannot be predicted. This creates a series of problems for the fire support element:

- Field artillery batteries and mortars need to be positioned to cover 6400 mils (360 degrees) to provide all-round indirect fire. This can also offer greater protection to the perimeter through the artillery's direct fire capability.
- Neither the artillery batteries nor the mortars should be left without an infantry defense, because they are more vulnerable to enemy attack.
- A fire base must be located within range of another base so the two can support each other by indirect fire.
- Since the enemy may be highly mobile, the coordinates of the different targets must be verified constantly until the moment of fire. Otherwise, too much ammunition can be expended, or even worse, too many friendly casualties can be caused by the artillery.

Accuracy. No matter how many fire support weapons are available, the nature of irregular warfare requires that they be completely accurate. In this type of conflict, targets are scarce, and the terrain is either inaccessible or located in civilian areas.

To achieve this kind of accuracy with artillery or mortars, several actions are necessary, regardless of the mission. Among these are boresighting, registration, calibration, and the exact positioning of the guns.

The AC-130 Spectre aircraft deserves special mention because of its accuracy and firepower. During Operation JUST CAUSE in December 1989, the system was remarkably effective. As one of the many examples, an AC-130 located an enemy barracks at night, fired, and destroyed this one building, leaving all the surrounding structures intact.

The AC-130's efficiency should not be surprising, because it was designed for special operations. This aircraft also conducts armed reconnaissance missions, convoy escort, and perimeter defense. It is equipped with a wide variety of weapons—including the 7.62mm minigun, 20mm Vulcan, and 40mm and 105mm cannon—and the ammunition includes high explosive and white smoke rounds.

The Function. The ultimate goal of fire support is not just to destroy or kill. Its employment can include non-lethal missions, with illumination and smoke, for example. Illumination—another important capability—is not used for

the sole purpose of illuminating the battlefield but also for harassment, to focus attention on a particular area, and to orient units at night.

A smoke mission can provide obscuration, mark a target for attack by CAS, orient friendly troops, or direct attention to a specific area, giving the commander a means of deception. Smoke is also a highly mobile means of deception, because smoke rounds can be fired rapidly almost anywhere on the battlefield. Additionally, these rounds are relatively safe; a smoke shell has no fragmentation and cannot normally cause civilian casualties unless it scores a direct hit on an individual.

On the other hand, we must not forget the psychological effect of fire support on the enemy. The frightening noise, concussion, and flash of the explosives are some of the important features of fire support. Simply letting the enemy know that we have these means and will use them is often enough to scare him.

Finally, we must remember that during Operation JUST CAUSE, field artillery was used at Fort Amador to reduce U.S. casualties when an M102 howitzer (105mm) was used in the direct fire mode against a Panamanian Defense Force barracks, which caused the enemy to surrender.

There are many missions for fire support in irregular conflicts, and all of them can enhance a unit's combat power. A maneuver commander must decide to use this firepower to its full capacity in order to inflict maximum casualties without sacrificing the courage, determination, and lives of his soldiers.

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Attending Graduate School

CAPTAIN CRAIG J. CURREY

Many company-grade officers consider attending graduate school at some time during their careers. Most of them encounter unforeseen problems associated with attendance and must learn from experience.

Drawing on the experiences of several officers who have completed graduate school, I would like to offer some suggestions for any officer interested in pursuing a full-time, fully funded graduate program.

As you think about working toward an advanced degree, do not become discouraged by any preconceived notions about your academic potential. The Army offers many different programs and alternate specialties that require advanced degrees. This is a key point; the availability of Army-funded graduate schooling is driven by the Army's need for personnel with advanced degrees in specific academic disciplines. Certain specialties, language skills, or minority status may put you in higher demand than you realize. Your Army experience and maturity can also give you an advantage in the competitive admissions process.

Ask senior officers, branch representatives, and others in the Total Army Personnel Command (PERSCOM) about graduate school possibilities. Work with them to coordinate your release for schooling. Problems may arise in the requirements of your secondary specialty, branch needs, funding constraints, and your personal desires, and you must monitor your own progress. Start early in expressing your desires, and be persistent.

Once the idea of graduate school becomes a real option—and perhaps even earlier—the Graduate Record Examination (GRE) will be one of your first hurdles. This standardized test is good for five years at a college admissions office. You will probably need to take it during your advanced course or your company command. It is offered only a few times a year, so find out early when and where the GRE is administered in your area. You can usually register at your post education center or at a local university.

Prepare by studying a GRE preparatory book, previous GRE tests (sold by the testing institute), or a preparatory course offered at a nearby institution. At least know the format of the test, the types of questions on it, and all the directions, so you won't have to waste time reading the same instructions during the test.

A math refresher is beneficial for most officers to review the basic algebra and geometry required to complete the test. You may receive conflicting guidance on how to prepare for the ver-

bal portion. Apart from memorizing vocabulary, practice the types of questions, such as analogies, so you will understand the thought processes involved. The analytical portion also requires extensive practice to master these types of questions. The length of the test, seven 30-minute blocks, will tire anyone, so take practice examinations to get back into the habit of taking long tests.

If you take the test twice, universities will consider the better score, so it is important to plan two test dates before the final admission date cut-off. In addition to the standard test, check to see if the schools to which you will apply also require a GRE subject-area test. These tests also require considerable practice and study.

Along with the GRE process, begin applying for admission to the graduate programs that offer the degrees and subjects in which you are interested. Read catalogues at post libraries and send for application packets. Discuss your choices with PERSCOM to determine whether they have any preferences as to which school you attend. Be careful when you begin choosing schools. The reputation of a graduate program varies on the basis of its current faculty strengths. This means that any preconceptions you may have formed as an undergraduate at the school may no longer be accurate or valid.

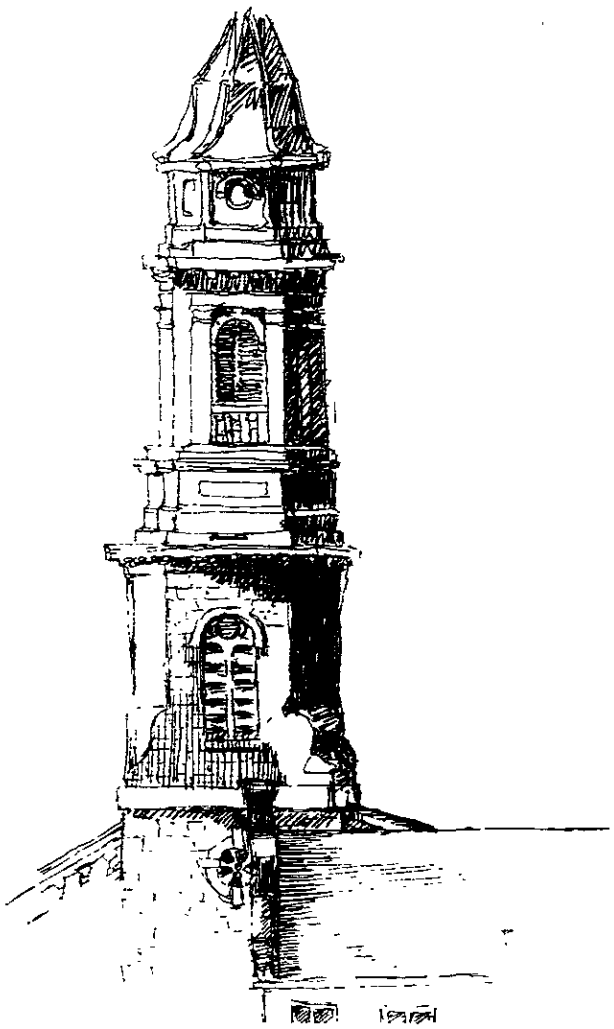
Talk with someone who is familiar with your proposed field of study, and rank-order the schools. Some programs such as history require a student to focus on a particular area within the discipline. Make sure that the school you choose offers the course of instruction you want. Also consider that some faculty members may be on sabbatical or otherwise unavailable to teach you as a master's candidate. Some schools are also Ph.D.-oriented and hence not tailored to master's programs.

Apply to at least three schools that vary in acceptance criteria from easy to more difficult. Do not apply to so many schools that you spend too much time and money on the application packets. You will need to obtain letters of recommendation as part of most applications. Emphasize to the people you ask for these letters that they should stress your ability to succeed in an academic environment. A letter steeped in military job descriptions or accomplishments may not convince a university administrator that you are a qualified candidate. Do emphasize your experience and maturity in admissions packets, though, because they should help you get into a school.

Be ready for some specific requirements that vary from school to school. Some universities, depending on their graduate programs, require a writing sample, and this is difficult for someone who has been out of school for several years. Be ready to write a personal essay on your goals for the period following graduate school. Then tie these goals to some form of academic endeavor, not just your next Army assignment. Schools also need your undergraduate transcripts, which may take time to obtain.

Once accepted to a school, begin planning your start date. Determine when you must leave your job and report to the school. Summer sessions usually are easier academically, but they are harder for the school to arrange administratively. If you want to attend a summer term to ease your transition back into studies, plan early. Also work some leave time into your move, because you will not be able to take leave again until after your first semester.

Prepare for life away from a military post. You will probably live away from any post or base and consequently have less access to the associated facilities. Selecting a school that is near a military base would be ideal, of course, but academic excellence should be your primary consideration in choosing a school.



Plan on spending more of your income for housing and subsistence. Your allowances probably will not cover housing costs, and commissary and post exchange facilities will not be available. Your family will use CHAMPUS for medical costs, but it covers only 80 percent of the allowed costs on most types of treatment. Plan on enrolling in a CHAMPUS supplement plan, if you have not already done so, to offset coverage losses. Your family should also be on the Delta dental insurance plan. As an active duty member, you cannot use CHAMPUS or Delta. Your medical expenses will be reimbursed through the U.S. Army Student Detachment. In both cases, keep copies of all receipts and forms.

Finally, before leaving your post, make sure your power-of-attorney, identification card, Department of the Army photograph, and physical are up to date so you won't have to make any special trips once your classes begin.

While at graduate school, you will be assigned to the student detachment at Fort Benjamin Harrison. The detachment personnel will give you an initial packet containing blank forms and the *Student Handbook*, an excellent guide with instructions and telephone numbers you can call with your questions. The detachment will handle your pay, leave, and personnel actions; the staff completes forms and sends your leave and earnings statements through the mail.

Each school will have a student liaison officer who reports to the student detachment. Among other duties, this liaison officer administers the Army Physical Fitness Test twice a year to each student and then forwards DA Form 2125 each semester (or quarter) containing the student's academic grades. The office also processes student claims for textbooks. Although the amount for books varies on the basis of particular funding programs, you can file claims twice a year after buying the materials you need.

Once at school, you will need to readjust to life in the classroom. Graduate school will require higher standards of writing and more reading than you have ever experienced. In addition, you may be the only officer in your department, and conflicting political ideologies, moral values, and anti-military feelings often characterize the more liberal academic environment. While you learn more about society, you can also teach others about the Army, dispelling misconceptions and presenting a positive image of our Armed forces.

There are usually other officers on campus either as students or assigned to the ROTC detachment, so there will be a military presence. Although your academic studies will be your primary duty, you may want to get involved in some of the ROTC detachment activities.

Finally, your graduate school assignment is designed to prepare you for a follow-on utilization tour and future higher-level military service. Stay current in your branch and on Army developments through professional journals and appropriate correspondence courses. Take advantage of the opportunity to focus on broader military, political, economic, social, and intellectual aspects of society. Attend lectures, talk to professors, and socialize with other graduate students. These educational experiences will help you see the larger picture.

During this period, you will be away from the familiar military environment, but you will also find the university community and your graduate schooling a rewarding experience.

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Promotion Board Tips

LIEUTENANT COLONEL JOHN M. MITCHELL

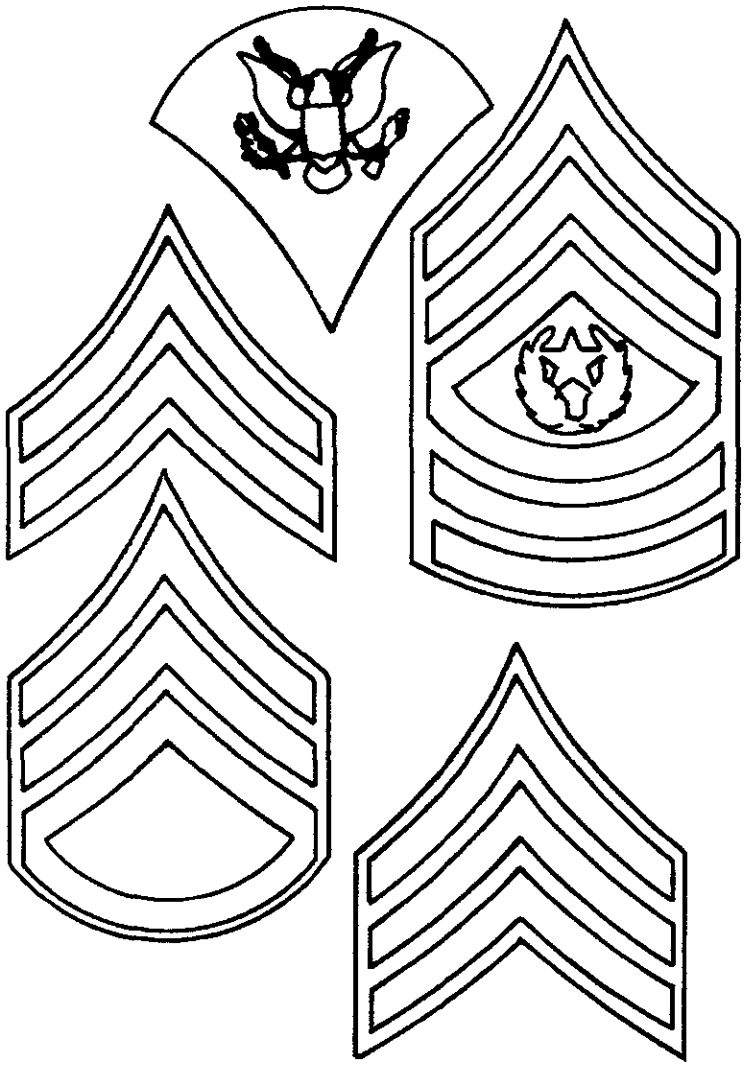
The first exposure to service on a Department of the Army promotion board can be an eye-opening experience. In my case, it came in the form of the calendar year 1992 Master Sergeant Selection Board, at the end of my 18th year of service, following battalion command. I want to share some observations that may help soldiers prepare themselves for promotion, and help commanders better manage their noncommissioned officers' personal and professional development.

It is important to recognize that no two boards produce exactly the same results. This is partly because the membership of the board changes from year to year, and equally important, instructions from the Deputy Chief of Staff for Personnel change annually. The demographics of the eligible population and the needs of the Army at the time also directly affect the results. So, while it may be possible to generalize some lessons from one year to the next, it's important not to rely too heavily on the specifics of a particular board's results.

My overwhelming impression is that the current system of centralized promotion is very fair. The Office of the Secretary of the Army, which is charged with overseeing the administration of each such board, goes to great lengths to assemble a board composed of officers and senior noncommissioned officers who have the military experience to make good choices.

In the case of the master sergeant selection board, the members were command sergeants major, lieutenant colonels, and colonels. There was a mix of serving battalion and brigade commanders, command sergeants major at various levels of command, and former commanders. Ethnic groups and women were represented as well. The board was organized into panels composed of four to eight members, to consider specific career management fields (CMF). Without going into the details of the voting, I will simply say that it was extremely well-organized, and each panel had a dedicated (non-voting) administrative NCO who kept track of records and votes.

Now to the specific issues. Since I served on the Infantry/Special Forces panel, many of my observations will refer to those career management fields (CMFs 11 and 18). In general, we saw a number of outdated photographs (five years or older) and Personnel Qualification Records that had not been reviewed. An old photograph leaves the board members wondering why the soldier chose not to update it, and may cause them to look closer at the height, weight, and body fat data. We also



noticed more than a few cases of soldiers who had gained weight over the years and as their weight climbed toward their maximum allowable screening weight, their height in inches had also increased. This is easy to trace on the noncommissioned officer-efficiency reports (NCOERs), and it gives the impression that the unit is not enforcing good quality control on either height and weight screening or the preparation of NCOERs. Many such reports also featured the "bullet" comment, "Soldier is within body fat standards in accordance with AR 600-9." Such a bullet alone was not convincing, as it was hard to believe that the Army has so many superior athletes who are over their screening weight by 10 to 30 pounds. If a soldier falls into that category, his rater should reinforce the standard line with a bullet comment that explains his athletic achievements.

For a sergeant first class, successful performance as a platoon sergeant (or in the case of MOS 11C, section sergeant in the mortar platoon of mechanized or armor units), was a critical indicator of preparation. There was no such thing as "too much time" as a platoon sergeant, and where there was opportunity, successful service as a company first sergeant was a good indicator of potential. Present or recent platoon sergeant duty weighed more heavily with the panel members than did a short period several years earlier (often as a staff sergeant), with one or more intervening assignments away from TOE units.

There was a strong preference for solid performance in "line" units over the many other opportunities offered to our soldiers. This means that battalion commanders and their command sergeants major need to screen each inbound sergeant first class to decide if he needs to go directly to a platoon sergeant job. There seem to be enough sergeants first class serving in units now who have three or more years as platoon sergeants and who could make major contributions in the staff NCO positions at battalion and brigade level, thus making room for others who need experience.

Assignments "away from troops" take many forms, varying from drill sergeant duty, to recruiting, to Reserve Officer Training Corps, to Reserve Component advisor, to instructor duty in a service school or NCO Academy, to service on a high level staff or with an Army test activity. While these are all professionally broadening assignments, they often contribute little to the soldier's preparation to serve as a master sergeant—and principally as a company first sergeant. Recognizing that good soldiers are often recruited and involuntarily assigned to such duty, the best course is to do the job professionally, stay the required period, and return to a TOE unit. For combat arms soldiers, the risks seem to be particularly high in recruiting and ROTC assignments, where in most cases, they have their first contact with women in a duty environment. Tour extensions or successive assignments to those "non-troop" billets (except in the most extreme compassionate cases) give the impression that the soldier is avoiding the more challenging jobs.

Education and training are increasingly important to soldiers as they progress in their Army careers. Sergeants first class were expected to have successfully completed the Advanced NCO Course for their CMF. Failure to graduate from a military course of instruction for other than medical or compassionate reasons was not looked upon favorably. We immediately looked for evidence that he had returned and completed the course. Any adverse comments on his academic efficiency reports were read closely.

Additional skill courses were an enhancer, but not a major factor in our evaluation of the soldier's training. Where they apply directly to the soldier's duty, they carried more weight than did those which were simply "qualifications."

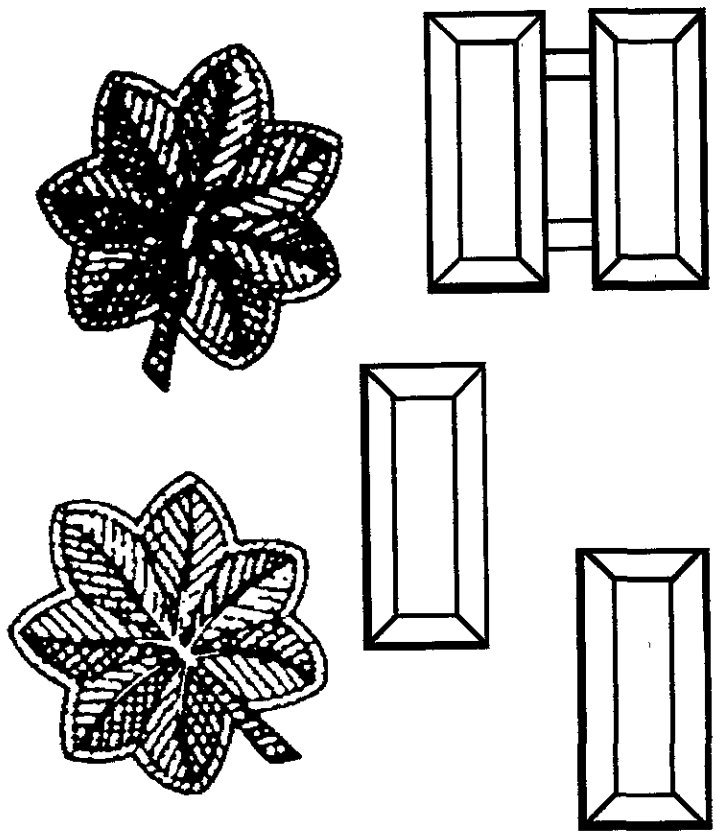
Like military education and training, civilian education was a matter of interest to the board members. Many soldiers had evidence of some college credits, but a surprising number did not. Generally, soldiers with a great deal of service in TOE units had less college education. Setting aside the obvious conflicts between field duty and evening college classes, there are still ample opportunities to get college credits by testing or by evaluation of military training and experience. Some Department of Defense courses (such as the Equal Opportunity Advisor Course, for example) confer direct college-level credits; many others can be evaluated and can produce college credits for educational content. Infantrymen and Special Forces soldiers, in general, need to visit their installation education centers and get credits posted to their records. Those serving in assignments "away from troops" should take advantage of more predictable hours and enroll in college courses. For example, there should be no excuse for a soldier leaving an ROTC assignment without having earned some college credits.

In the matter of NCOERs, we found the current form with the bullet comments very easy to review. Raters and senior raters need to continue to work to produce direct, clear, and substantive statements. The more specific the comment, the more value and credibility it had. A company commander's comment, "The best platoon sergeant in my company," was always superior to the platoon leader's, "An outstanding super-soldier." One key to success in reviewing NCOER's is making sure the person who made the comment was qualified to do so. For example, a company first sergeant cannot credibly state that a particular platoon sergeant is "the best in the battalion," while a battalion commander can. Also, while "Success" marks on the backside of the NCOER do not require bullet comments, they do help the board members assess the quality of performance if they are specific and relevant.

Adverse actions that occur during the rated period should be included in the NCOER. The most frequent omissions of this sort are reliefs for cause and letters of reprimand that were filed for misconduct. Since both items typically appear in the soldier's performance microfiche, the absence of any reference to performance problems (on or off duty) gives the impression that the chain of command is trying to conceal the incident. Certainly, in the "whole soldier" approach, anything significant enough to be filed in the Official Military Personnel File (OMPF) should be acknowledged in the NCOER. In the final analysis, the decision to omit any reference in the NCOER only causes the soldier's file to get a closer look by the board, to see what else the chain of command may have chosen not to mention.

Letters from the eligible soldier to the president of the board were fairly common. When they served the purpose of forwarding items that had not otherwise been posted to the OMPF, they were useful. When a letter had been used as a forum to argue why a soldier should be promoted and what an outstanding record he had compiled, it did not work to his advantage. The best rule on letters to the president of the board is, don't write them—let the record speak for itself.

While it is still true that a soldier is his own best career manager, there are several things the chain of command



can and should do to place him in the best posture for the board. Besides making sure that he is placed in the challenging jobs that prepare him for the increased responsibility of being a company first sergeant and rating him accurately and clearly, commanders and sergeants major need to force the issue of updating photos and personnel qualification records. They can also push civilian education and send soldiers back to military courses they have failed, after the proper re-training. With a little more emphasis on these and the other items mentioned here, we can better prepare more of our senior soldiers for the tougher jobs that lie ahead.

Lieutenant Colonel John M. Mitchell recently completed an assignment in the Directorate of Operations and Training at the Infantry School and is now attending the Army War College. He commanded the 1st Battalion, 5th Infantry in Korea. He is a 1973 ROTC graduate of the University of Tennessee and holds a master's degree from Central Michigan University.

SWAP SHOP

SAND TABLE STRING DRILL

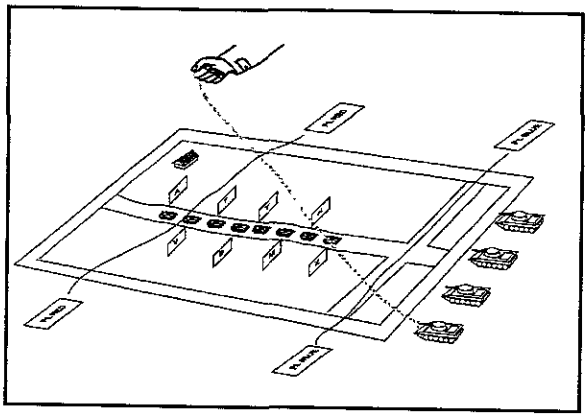
Countless after-action reviews from the combat training centers, along with experiences in Southwest Asia, highlight the problems associated with fire control and distribution. Gunnery manuals and unit SOPs provide the tactics, techniques, and procedures for engaging multiple targets, but putting these theories into practice can be a challenge.

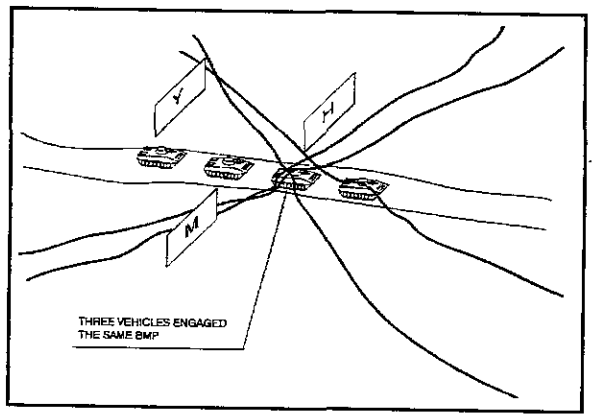
A good training technique is the sand table string drill. First, you will need a sand table (4'x8'), colored yarn, 3x5 index cards, and some simulated enemy targets (rocks, blocks of wood, models). Then proceed as follows:

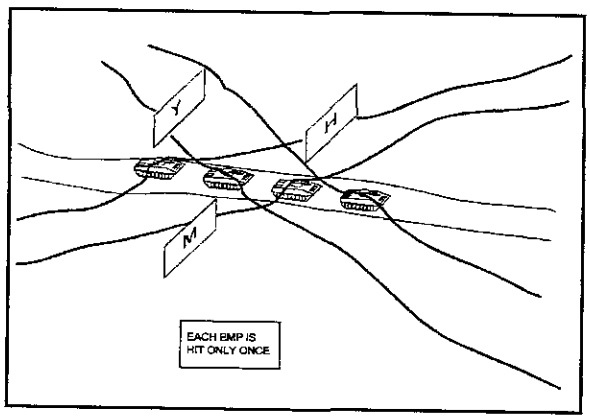
- Make a terrain layout showing only such basic terrain features as hills, buildings, and roads. Give each gunner a piece of yarn that stretches from his position to the opposite side of the terrain board.
- Develop a target scenario. A good starter scenario is an engagement against a column of enemy vehicles moving along a road. Arrange the targets and put a 3x5 card marked with a letter or number next to each potential target. This allows each crew to positively identify its target. Phase lines (PLs) and target reference points (TRPs) should also be clearly marked.
- Issue a fragmentary order (FRAGO) that identifies fire control measures and engagement criteria. For example, the platoon leader designates fields of fire, identifies TRPs, and describes how he plans to fight the position.
- The platoon leader issues an appropriate fire command. For the example above, assume that the unit is a mechanized infantry platoon in a hasty defensive position. The platoon leader gives a fire command such as, "Delta, this is Delta 25, 8 BMPs, direct front, depth, fire!" Each vehicle commander or gunner then selects the first two targets to engage and records the letter or number on the card next to each.

After target selection, have each vehicle commander identify the first of his two targets. As each target is identified, place the yarn across it (Figure 1), and continue this until each vehicle commander has engaged two targets.

Often, two or three crews in a platoon will engage the same enemy vehicle (Figure 2). But with a little practice and SOP refinement, they will he able to kill more enemy vehicles more quickly with fewer rounds (Figure 3). A few minutes on the sand table can help save precious training ammunition and possibly lives on the battlefield.







(Submitted by Captain Theodore D. Martin, Training Management Division, Combined Arms Command, Fort Leavenworth, Kansas.)

OFFICERS CAREER NOTES

OPPORTUNITIES IN THE 75th RANGER REGIMENT

The 75th Ranger Regiment is looking for high-quality company grade infantry officers to serve as platoon leaders, company commanders, and company staff officers. The regimental headquarters and the 3d Battalion are at Fort Benning, Georgia; the 1st Battalion is at Hunter Army Airfield, Georgia; and the 2d Battalion is at Fort Lewis, Washington.

Candidates for platoon leader positions should be in Year Group 1990 or 1991, have TOE platoon leader time (preferably one year, at least), be airborne and Ranger qualified, and have outstanding performance and conduct records.

Candidates for company command and staff positions should be in Year Group 1985 or 1986, be advanced course graduates, have successful company command, be airborne and Ranger qualified, and have outstanding performance and conduct records.

Top-quality, physically fit officers who are sincerely interested in being assigned to one of these demanding, rewarding assignments should write to Commander, 75th Ranger Regiment, ATTN: Assistant S-1, P.O. Box 55843, Fort Benning, GA 31905-5843, or call CPT Klingaman at DSN 835-7551/5124 or commercial (706) 545-7551/5124.

OPPORTUNITIES IN PSYOPS AND CIVIL AFFAIRS

Assignment officers in Functional Area (FA) 39 (Psychological Operations and Civil Affairs), are looking for branch-qualified officers in Year Groups 1984-1986.

The officers accepted into FA 39 will be slated to attend fully funded graduate schooling leading to master of science degrees in international relations. These officers will also have an opportunity to receive language training and will fill positions within the psychological operations group at Fort Bragg, North Carolina. Typical positions include those of team and company commander.

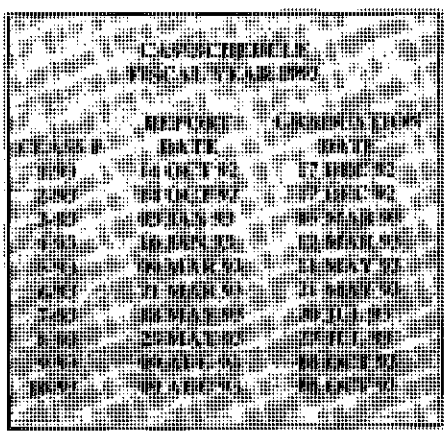
To qualify, an officer must have a DLAB (Defense Language Aptitude Battery) score of 85. A Graduate Record Examination score is not required.

Interested infantry officers who are not already in FA 39 must apply to Infantry Branch, using DA Form 1618-R (found in AR 621-1) along with a request for functional area change (memorandum or DA Form 4187).

The Infantry Branch point of contact for applications and for changing functional areas is CPT Boslego, DSN 221-5517; commercial (703) 325-5517. Further information about career opportunities in FA 39 is available from MAJ Morales, FA 39 assignment officer, at DSN 221-3115; commercial (703) 325-3115.

DIRECTORY UPDATE

A complete directory of points of contact at Infantry Branch appeared in the July-August 1992 issue of INFANTRY.



The following information should be added to that directory:

- The Infantry Branch FAX number is DSN 221-5463 or commercial (703) 325-5463.
- Microfiche updates should be mailed to Commander, PERSCOM, ATTN: TAPC-MSR-S, 200 Stovall Street, Alexandria, VA 22332-0414.

MILESTONES FOR OAC ATTENDANCE

Infantry Branch has established the following due dates for the various processes that lead to the date on which an officer is scheduled to report to his officer advanced course (R = Report Date).

Welcome packet to officer	**R - 6 months**
Request for orders to officer	**R - 6 months**
Follow-on assignment preference statement to officer	**R - 6 months**
Preference statement from officer to Infantry Branch	**R - 5 months**
Tentative follow-on assignment	**R - 2 months**

Officers who have questions or problems may call CPT Shorter or Mrs. Hughes at DSN 221-0207/5513; commercial (703) 325-0207/5513.

ASSIGNMENTS IN THE OLD GUARD

The 3d U.S. Infantry, "The Old Guard," is looking for experienced first lieutenants to fill positions as platoon leaders and company executive officers.

Applicants must be 72 inches tall or taller and Ranger qualified.

Officers in Year Group 1990 tend to have the best career timing for these positions in the near term. Lieutenants who are interested should contact the Old Guard Adjutant, CPT Dunham, DSN 226-3003; commercial (703) 696-3003.

1812: NAPOLEON'S RUSSIAN CAMPAIGN. By Richard K. Riehn. McGraw-Hill, 1990. 525 Pages. $24.95. Reviewed by Colonel John C. Spence, III, United States Army Reserve.

The author of this book dispels much of the mythology that has surrounded the military genius of Napoleon during the Russian campaign. This well-documented book provides the explanation for the statement that in "only 5 months and 21 days, the mightiest army the world had ever seen was all but totally destroyed."

Riehn places the invasion in the context of the social and political era of a Europe that had been convulsed by wars since the French Revolution. This was a period marked not only by the massive mobilization of armies and the extensive redrawing of the maps of countries but also by the rise of nationalism.

Conventional wisdom has taught that the unexpected bitter cold of the Russian winter was the primary cause of the disaster in Russia. Throughout this book, however, the author demonstrates that the weather factor was only an excuse and that it led to the myth of Napoleonic invincibility.

There is ample documentation to show that shortsighted judgment, faulty tactical decisions and, above all, inattention to logistics contributed to the defeat of the Grand Army. Napoleon exhibited great genius in raising mass armies from the civilian population. In fact, his troops in the Russian Campaign were a multi-national and multi-ethnic force. But because his military organization was best-suited for short and decisive campaigns, long-range and long-term logistical support was sorely neglected.

Fighting in Russia, given its massive territory and sparse resources available for foraging, was an unprecedented experience for Napoleon. The limits of a mass army were readily displayed in this disaster. The author suggests that without railroads and telegraph, which had yet to be invented, such a mass army was an anachronism.

As in many recent books on this period, this book contains an excellent appendix, detailing unit strengths throughout the campaign. It is therefore a valuable resource work for this period of history.

RETREAT HELL. WE'RE JUST ATTACKING IN ANOTHER DIRECTION. By Jim Wilson. William Morriss and Company, Inc., 1988. 349 Pages. $19.95. Reviewed by Mike Fisher, Kansas State University.

On 24 June 1950, State Department cable #925 alerted the United States that the uneasy peace that followed World War II had ended. North Korean communist soldiers had invaded South Korea, a U.S. ally.

This book relates the epic struggle of the U.S. First Marine Division during its retrograde movement from the mountainous Chosin Reservoir area in Northern Korea during November and December 1950. The heroism and sacrifice of those Marines have become benchmarks of U.S. feats of arms, told and retold in countless history books. *Retreat Hell* differs dramatically from these other accounts; here, for the first time, the Marines who fought the battle tell their own story.

The echo of those voices cuts across four decades to the windswept ridges and icy mountain passes traversed by automatic weapon fire and marked by the dead and wounded. Despite the passage of time, the events of those two weeks of terrible agony and unbelievable sacrifice remain fresh. Time has mellowed, but not dimmed, the memory of the Marines who, outnumbered ten to one, reversed their advance from north to south, fighting their way through ten divisions of the veteran Chinese Communist Army of the Fourth Route. Marine casualties from 28 November to 11 December would number nearly half the 25,000 Marine effectives who began the march to the sea.

Jim Wilson, an Army Korean War veteran, now an editor for the Los Angeles *Times*, spent three years recreating the story that consumed the men of the First Marine Division 40 years ago. For these men, the problems of high strategy and low politics of the war meant little. What was important was the destruction of the Chinese divisions while bringing the wounded and dead soldiers and the equipment down the 70 miles from Chosin to Hungnam, the sea, and safety.

Those men who lived through the Chosin battle brought with them an added appreciation of the gift of life. As the calm, almost reverent narrative emphasizes, those men who survived never again forgot the value and the fragility of their own lives. For them, life would always remain the answer to the combat infantryman's prayer: "Lord, give me just one more day."

RECENT AND RECOMMENDED

THE RISE AND FALL OF THE THIRD REICH: A HISTORY OF NAZI GERMANY. By William L. Shirer. Complete and Unabridged. First published in hardcover in 1950. Ballantine Books, 1991. 1,599 Pages. $6.95, Softbound.

TERRAIN AND TACTICS. By Patrick O'Sullivan. Contributions in Military Studies, Number 115, Greenwood Press, 1991. 182 Pages. $40.00.

FROM SPEAR TO FLINTLOCK: A HISTORY OF WAR IN EUROPE AND THE MIDDLE EAST TO THE FRENCH REVOLUTION. By Frederic J. Baumgartner. Praeger Publishers, 1991. 368 Pages. $45.00.

NIXON: VOLUME III, RUIN AND RECOVERY, 1973-1990. By Stephen E. Ambrose. Simon and Schuster, 1991. 667 Pages. $27.50.

LITTLE FRIENDS: THE FIGHTER PILOT EXPERIENCE IN WORLD WAR II ENGLAND. By Philip Kaplan and Andy Saunders. Random House, 1991. 256 Pages. $50.00.

THE LOST EMPIRE: PERCEPTIONS OF SOVIET POLICY SHIFTS IN THE 1990s. Edited by John Hemsley. Brassey's (UK), 1991. 289 Pages. $63.00.

YANK: THE STORY OF WORLD WAR II AS WRITTEN BY THE SOLDIERS. By the Staff of *Yank*. Brassey's (US), 1991. Originally Published in 1984. 264 Pages. $16.95, Softbound.

THE ALMANAC OF TRANSATLANTIC POLITICS: 1991-1992. By Matthew Cossolotto. Brassey's (US), 1991. 448 Pages. $32.00 Softbound.

HOW TO LOCATE ANYONE WHO IS OR HAS BEEN IN THE MILITARY: ARMED FORCES LOCATOR DIRECTORY. By Lieutenant Colonel Richard S. Johnson. Military Information Enterprises (P.O. Box 5143, Burlington, NC 27216), 163 Pages. $16.00, Softbound.

THE WORLD WAR II QUIZ BOOK. By John Malone. A Quill Book. William Morrow and Company, 1991, 210 Pages. $9.00, Softbound.

BEYOND THE UNIFORM: A CAREER TRANSITION GUIDE FOR VETERANS AND FEDERAL EMPLOYEES. By W. Dean Lee. John Wiley and Sons, 1991. 215 Pages. $12.95, Softbound.

SHERMAN'S MARCH. By Richard Wheeler. HarperCollins, 1991. First published in hardcover in 1978. 241 Pages. $10.00, Softbound.

THE SIEGE OF VICKSBURG. By Richard Wheeler. First published in hardcover in 1978. HarperCollins, 1991. 257 Pages. $10.00, Softbound.

ALWAYS HOME: 50 YEARS OF USO—THE OFFICIAL PHOTOGRAPHIC HISTORY. By Frank Coffey. Brassey's (US), 1991. 190 Pages. $29.95.

ROMANCING VIETNAM: INSIDE THE BOAT COUNTRY. By Justin Wintle. Pantheon Books, 1991. 464 Pages. $25.00.

DIRTY LITTLE SECRETS: MILITARY INFORMATION YOU'RE NOT SUPPOSED TO KNOW. By James F. Dunnigan, with Al Nofi. William Morrow and Company, 1990. 464 Pages. $19.95.

TANKS IN THE WIRE: THE FIRST USE OF ENEMY ARMOR IN VIETNAM. By David B. Stockwell. Daring Books, 1989. 205 Pages. $17.95.

SCRAPS OF PAPER: THE DISARMAMENT TREATIES BETWEEN THE WORLD WARS. By Harlow A. Hyde. Media Publishing, 1988. 456 Pages. $18.95.

☆U.S. GOVERNMENT PRINTING OFFICE: 1992-631-071-60004

INFANTRY SCHOOL DIRECTORY

The following directory is offered as an aid to people in the field who may have questions they want to ask the various departments and divisions of the Infantry School. All telephone numbers are DSN (Defense Switched Network). To call the Fort Benning numbers on commercial lines, dial area code 706; then convert 835 prefixes to 545 and 784 prefixes to 544.

In addition to these points of contact, the Infantry School maintains a hotline specifically to receive questions and comments from the field. The number is DSN 835-7693; commercial (706) 545-7693. Questions are recorded, and answers are returned within 48 hours. Lengthy questions or comments should be sent in writing to Commandant, USAIS, ATTN: ATSH-ES, Fort Benning, GA 31905-5420.

Assistant Commandant	
BG John W. Hendrix	835-5296
Deputy Assistant Commandant	
COL Craiger C. Parker	835-5231
Command Sergeant Major	
CSM Gary Cupit	835-2813
Combined Arms and Tactics Department	
Director, LTC Stephen A. Nash	835-4539
Combined Arms Division	835-5475
Communicative Skills Division	835-3382
Doctrine Division	835-7162
Leadership Division	835-5610
Tactics Division	835-5726
Military History Division	835-7122
Directorate of Combat Developments	
Director, COL Albert J. Nabas	835-1316
Concepts and Analysis Division	835-2489
Materiel Systems Division	835-1915
Systems Priority and Integration Division	835-1041
Test and Evaluation Division	835-3630
Directorate of Operations and Training	
Director, COL Howard W. Crawford, Jr.	835-5717
Aviation Division	835-4680
Current Operations Division	835-7574
Evaluation and Staff Education Division	835-7617
INFANTRY Magazine	835-2350
National Infantry Museum	835-2958
Plans and Readiness Division	835-2917
Range Division	835-4619
Resource Management Division	835-4087
Training and Analysis Division	835-3022
Training Support Center	835-2132
Systems Division	835-2571
Ranger Training Brigade	
Commander, COL Michael V. Church	784-6980
4th Ranger Training Battalion (Benning Phase)	784-6211
5th Ranger Training Battalion (Mountain Phase)	797-5770
6th Ranger Training Battalion (Florida Phase)	872-1162
7th Ranger Training Battalion (Desert Phase)	979-9507
29th Infantry Regiment	
Commander, COL Gregory C. Camp	784-6008
Bradley IFV New Equipment Training Team	784-6907
Maintenance Management Division	784-6517
1st Battalion, 29th Infantry Regiment	784-4060
Co A (OSUT BIFV Training)	784-7422
Co B (Mortar Committee)	784-1450
Co C (OSUT MII3 Training)	784-1203
Co D (BIFV Committee)	784-2584
Co E (BIFV Committee)	784-3280
Bradley Instructor Company	784-6433
2d Battalion, 29th Infantry Regiment	784-6819
Co A (Land Navigation Committee)	784-6033
Co B (Antiarmor Committee)	784-6546
Co C (Small Arms Committee)	784-6806
Co D (Tactics/Sniper Training)	784-6006
Sniper School	784-7455
11th Infantry Regiment	
Commander, COL Lawrence K. White, Jr.	835-4301
1st Battalion, 11th Infantry	835-1962
2d Battalion, 11th Infantry (IOBC)	835-1666
3d Battalion, 11th Infantry (OCS)	835-4711
1st Battalion, 507th Infantry (Airborne)	835-1035
NCO Academy	
Commandant, CSM Allan R. Halstead	835-2233
Reserve Component Advisors	
USAR Advisor	835-6469
ARNG Advisor	835-5741

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