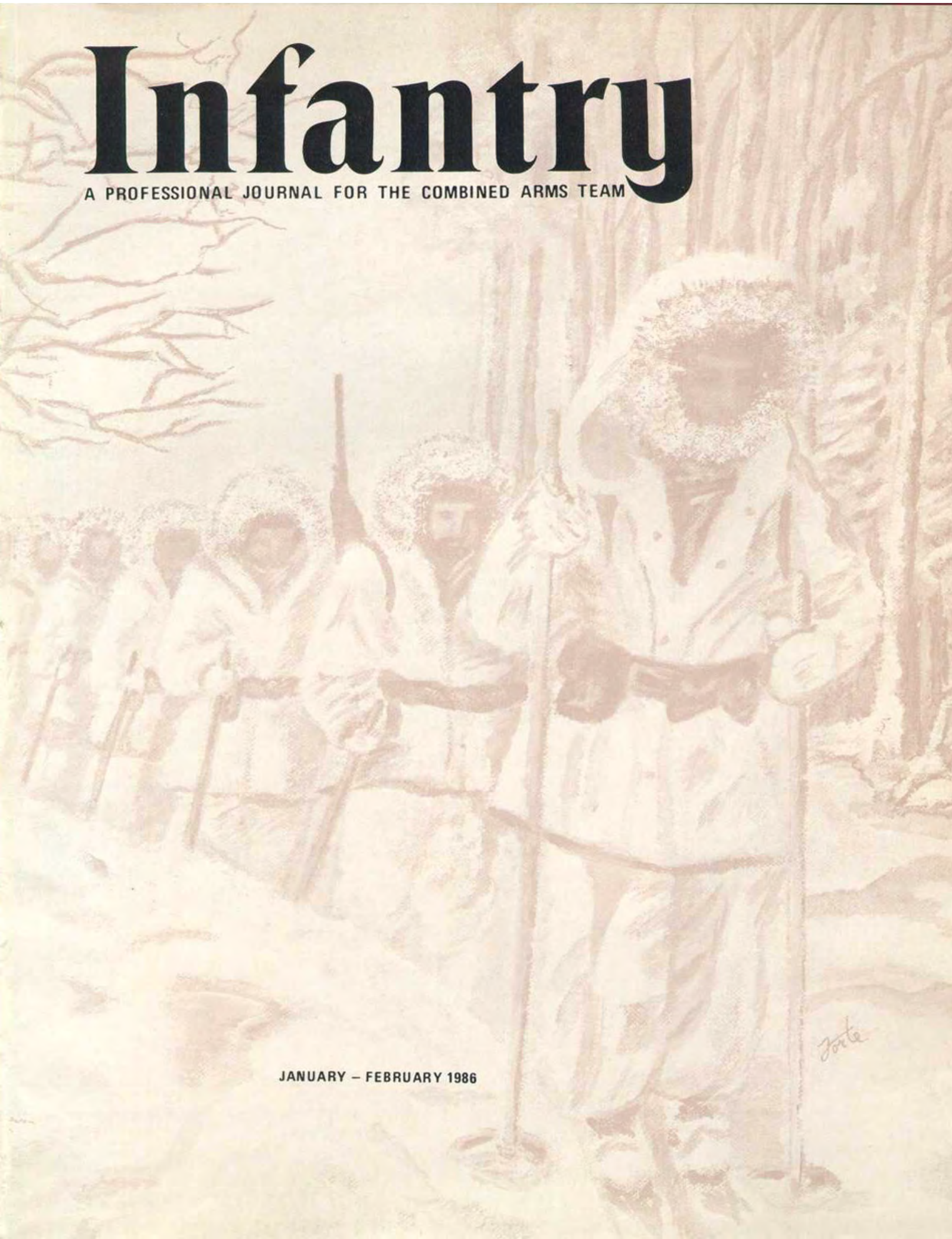


Infantry

A PROFESSIONAL JOURNAL FOR THE COMBINED ARMS TEAM



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Infantry

A PROFESSIONAL JOURNAL FOR THE COMBINED ARMS TEAM

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On the future battlefield, many infantrymen will live and survive with what they carry on their backs.



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Commandant's NOTE



Major General John W. Foss

Chief of Infantry

RANGER TRAINING

The battlefield's demands on the infantry are increasing. As usual, it seems that everything is getting harder instead of easier. The introduction of the Bradley fighting vehicle into our mechanized infantry units has demonstrated the critical mounted and dismounted task for infantry leaders and emphasized the fact that our Bradley leaders have to be good to handle them.

At the same time, the light infantry concept has added another dimension of difficulty, what with the requirements for light units to maneuver in areas behind the enemy's front lines and to operate in the toughest terrain.

The very nature of the combat role that has been postulated for our light infantry units requires those units to rely heavily on aggressive and innovative small unit leaders. These highly trained and tough soldiers will move and fight both individually and in units in dense forests, along high mountain ridges, in constricted urban terrain, and frequently under night and foul-weather conditions. They will live and survive with what they carry on their backs.

With all of the increased demands on our infantry leaders, there has come a great demand for and interest in the Ranger Course and in Ranger training for both our mechanized and our light infantry units. Our light infantry units in particular, I believe, must have a high ratio of Ranger-qualified personnel, particularly in the leadership positions, because Ranger training, in simple terms, is leadership training.

Ranger training stresses leadership, toughness, and confidence and uses patrolling to train and evaluate selected NCOs and officers in specific leadership skills. And nowhere in the United States Army are these leadership skills more important than at the infantry squad, platoon and company levels. To lead and win on the modern battlefield, our squad leaders, platoon sergeants, and platoon leaders must be inspiring leaders, physically and mentally tough, and tactically proficient in small unit skills. Ranger training is the best way to instill these characteristics.

One way of infusing Rangers into the new light infantry divisions is to season the units with some Ranger-qualified personnel initially and then allow them to grow their own, working through the Ranger School's quota system. This method has proved highly successful in the 7th Infantry Division, which, over the past 18 months, has had more than 200 of its own soldiers qualified as Rangers. Although proportionally more Rangers are now being assigned to light divisions than to heavy divisions, it is only a matter of time before we have worked our way through the Ranger assignment hiatus created by the activation of the light divisions. Then our heavy divisions will receive their fair share of Ranger-qualified personnel. In the interim, we are devising schemes that will allow all new Regular Army Infantry second lieutenants to attend Ranger School. This, coupled with a coming increase in the number of classes, should place enough Ranger-qualified soldiers in the heavy divisions until we can get caught up.

To meet these increased requirements, Ranger classes at Benning will be expanded in Fiscal Year 1987 from the current 14 classes of 150 students each to 14 classes of 220 students each. This increase (from a total of 2,100 in Fiscal Year 1986 to 3,080 in Fiscal Year 1987) should produce about 1,000 additional Rangers each fiscal year, and further expansions are being considered for subsequent years.

Until this expansion can fully meet the Army's training requirements for Ranger-qualified personnel, spaces will be allocated first to units — with Ranger and infantry units having priority — and to Infantry officers. For other units, the following branch priority has been established: Field Artillery, Armor, Combat Engineers, and Military Police. Any remaining allocations will be distributed to volunteers in the same order of branch priority. For the past six months, all infantry lieutenants who have completed the basic course and have volunteered for Ranger training have received quotas to attend.

Unfortunately, even though our Ranger training spaces are at a premium, many of them are being wasted. Some soldiers who are scheduled to attend never show up; and some of those who do are released immediately because they do not meet the School's prerequisites. (There are no waivers for the Ranger APRT standards or the Combat Water Survival Test.)

I therefore strongly encourage all commanders who send soldiers to Ranger School to get involved and reduce this waste of critical training spaces. In April 1985 I sent a message to all units explaining the entrance requirements. All units should use it

in preparing the necessary paperwork and in testing prospective Ranger students. Unit commanders who have been reluctant in the past to send their soldiers to Ranger School for fear of losing them should know that their soldiers, when they graduate, are now guaranteed 12 months in the units that sent them to the School.

To make sure we are training Rangers the way they're going to fight, we at the Infantry School are constantly reviewing and analyzing the training offered by the Ranger Department. Some of the recent changes include reducing the student's load to mission essential equipment only; reducing (from 15 to 9) the size of patrols for squad level training (when resources are available); adding more squad patrols to the Benning, Mountain, and Desert Phases; using combat drills to develop aggressiveness and tactical competence; and increasing the amount of time devoted to land navigation and to practical exercises.

A major change in the course, which took effect last fall, was the move of the seven-day Desert Phase from Fort Bliss, Texas, to Dugway Proving Ground, Utah. The terrain at the new location — salt flats, sand dunes, foothills, and desert mountains — is ideal for Ranger training. This training begins with an airborne assault into a Middle East scenario and remains tactical to the end.

I have been greatly encouraged by the general toughness of training throughout the Infantry; it is an indication of our determination to have the best-trained and best-led soldiers in the world.

As I leave Fort Benning, I need to give you an update on the status of the Infantry in the United States Army. The renewed emphasis on infantry in all its forms over the past two years is paying off. We're a healthy force now, but we can get better.

The Bradley fighting vehicle has settled in and is performing extremely well. Some critics remain (only a few of whom understand combat) who would march us back in time and capability, but I believe we can overcome their criticism.

Light infantry has grown and is now a solid member of the infantry team. The conversion of the 7th Infantry Division's battalions is complete and that of the 25th Infantry Division's battalions is in progress,

as is the formation of the battalions of the 10th Mountain Division.

The advent of the 75th Ranger Regiment and of the 3d Ranger Battalion, and the expansion of Ranger training are having a positive effect on our force. We have made improvements in the training of our Infantry soldiers; new lieutenants and captains, and new equipment and weapons are on their way to our units.

Much more remains to be done in every area—training, tactics, weapons, and equipment. I know that all of our Infantrymen will give my successor, Ed Burba, the same great support they have given to me and to the Infantry School. (*General Foss now serves as commander of the 82d Airborne Division.*)

NIGHT ATTACK

Your September-October 1985 issue, as always, contains some stimulating material. Lieutenant Colonel William A. DePalo's article, "Dismounted Night Attack" (p. 26), prompts these comments:

Technological developments have brought no less than revolutionary changes in night combat. Image intensifiers, thermal imagers, ground radars, seismic sensors, and an array of other surveillance devices are changing everything. Darkness no longer conceals, no longer negates the advantages of the defender, and no longer simplifies the problem of attaining surprise as it did in the past. Night operations undertaken using the traditional night doctrine that stems from World War I could easily prove more costly than the same operations undertaken in broad daylight.

The 1st Battalion, 10th Infantry's experience in REFORGER 85 was undoubtedly valuable training and reflects high credit on the unit, but it does not seem to have added much in the way of critical night combat skills. Even the scenario is troublesome. It is difficult to accept that a competent enemy strong enough to challenge the advance of a mechanized division would so ignore the basic requirements of security, surveillance, and outpostting that heavily laden company-sized columns could penetrate a distance of 14 miles and cross an unfordable river without being detected. Given the level of opposition, a continuation of the mechanized advance would seem to have been the more productive move.

But that point aside, we were not told any of the crucial details about how the reconnaissance was conducted; whether reconnaissance teams were left in place to observe and report enemy movement; the use made of other surveillance means; route selection and techniques of navigation; the formations used by the three col-

umns; consideration given to diversions/covering operations; how night vision devices were allocated and used; plans for the use of supporting fires, smoke, illumination; course of action to be pursued in the event of detection or solid enemy contact; and other similar matters. These details are far from trivial. Technology has given them new importance — and demands new approaches. Traditional doctrine does not recognize that the enemy will have a night vision capability and therefore no longer provides adequate guidelines.

Physical conditioning, load-carrying capability, and forced marches are important training goals, but they do little more than scratch the surface when it comes to effectiveness in night combat. The point of this then is to suggest that all military units have their work cut out for them when it comes to preparing for fighting at night. They simply face a new ballgame with new rules and must learn those rules if they intend to play successfully.

I have not seen the recent TRADOC study that led to the decision to procure night vision aids of one type or another for every member of the Army squad. But I suspect, judging from its effect, that it would get units started in the right direction. In any event, you have given us an important, provocative article on a subject that needs more attention.

One final point, on the combat load. You may not be running a "Nightmare-of-the-Month Contest," but I would nominate this one for such a competition: Explaining to the late Brigadier General S.L.A. Marshall why mechanized troops, tasked with conducting a dismounted 14-mile trek through foot-deep snow and

conducting a river crossing and a night attack, were burdened with 60-pound rucksacks. Marshall's classic *The Soldier's Load and the Mobility of a Nation* is still in print (MCA, Box 1775, Quantico, VA 22134, \$2.75 postage included). It's 120 pages of worthwhile reading.

J.E. GREENWOOD
COL, U.S. Marine Corps (Retired)
Editor, *Marine Corps Gazette*

MISSING THE TARGET

Lieutenant Colonel Wayne A. Silkett's article "72 Ways to Win Bigger" (September-October 1985, p. 38), in which he proposes turning 72 men in an infantry battalion into snipers, is certainly unique. His analysis of the deteriorating marksmanship skills in the U.S. Army is correct, but creating 72 snipers per battalion is not the answer.

What the Army needs to do is to return to a known distance basic marksmanship program with dedicated full-time marksmanship instructors. Training each soldier in proper shooting fundamentals will bring results on the modern battlefield.

Sniper training and employment by the U.S. Army at the present time is poor at best. By reviving formal sniper training and combining it with an accurate bolt action rifle, the Army could have an effective sniper program.

On the rifle battalion level, under Division 86, four or five sniper teams would be more than enough. Seventy-two snipers per battalion, even if used as teams, could never achieve any degree of proficiency or be accurately trained. The key to their effectiveness would be their proper employment as an additional supporting arm. Used correctly, they could be effective in an urban environment.

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

Sniping is a precision skill that requires much patience and a high degree of shooting ability. It is not a skill that everybody can or should learn, and it is by no means a substitute for sound marksmanship instruction.

S.L. WALSH
USMC Scout Sniper Instructor
School
Quantico, Virginia

IMAGE OF LEADERSHIP

I would like to comment on Lieutenant Gary W. Ace's concept of having a platoon leader carry an M203 (see letter, September-October 1985, p. 5). I agree, and there is another reason or two why this is a good idea.

A minor point is that enemy snipers do not expect leaders to carry grenade launchers. Just as a .45 pistol, or now a 9mm, on an infantryman's hip draws the interest of a sniper, a grunt with a grenade launcher would present a less tempting target, for a while at least.

Another aspect may be more important:

An old buddy of mine, Tony Avgoulis, who commanded the Ranger Company of the 101st for one of his five tours in Vietnam, carried an M79. When the troops were hotly engaged, the distinctive "bloop" from the CP area let them know that "the old man" was taking an active part. General Pickett's plumed hat thrust high on his saber, heading for the angle at Gettysburg, served the same purpose.

The image of an officer showing the way is a crucial component of leadership.

STEPHEN Z. BARDOWSKI
SGT, Cavalry
Pennsylvania Army National Guard
Mechanicsburg, Pennsylvania

EXECUTION MATRIX REFINED

I have used execution matrixes on overlays for several years and, except for small improvements, had never thought to expand the information on the matrix. At the same time, I had been trying to figure out a way to make task force operations orders shorter and simpler.

Major Robert J. Henry, in his article on a modified matrix ("An Execution Matrix," September-October 1985, p. 34), has shown us a way toward that goal and has probably written the opening chapter in the search for the ultimate execution matrix.

Here is my contribution. All I did was include more elements from an operation, and its order, to fill up an 8 1/2 by 11 page with useful information. Obviously, anyone using this form would have to have it preprinted before an operation began. After the operation had been planned, about a dozen of the forms could

be filled out to distribute along with the overlay at the oral task force order. This would speed up the company team's planning, because there would be no need to wait for a written order.

Some of the information on the matrix, like call signs, could be filled out in pencil and updated by its user. Other items, like unit status and locations, could be revised as needed. The matrix itself would be given a two-digit identifying number, which, along with varying subject numbers and letters, would allow it to be used as a simple message code during its operational life.

TF 2-114 MECH EXECUTION MATRIX ④⑦

TF CALL SIGN	F7N	ON HAND	TANK	ATTACHMENTS											
CDR 13	93 67	NOT USED	MECH	4/2-BO MECH											
XO 57	53A 18	ADA	TON	4/2-104 ENG (20)											
SZ 64	54 39	CEWI	SC	3/8/111 ENG (20) F3T 27											
	NCS 72		ENG	4/D/3-S22NULCAN (25) M7U27											
UNIT-STATUS	TM A	G	B(-)	G	INTANK	X	DELTA	G	E(-)	G	SCOUTS	G	A,2	G	
CALL SIGN	RZA		NSC		07D		EOP		LSM		PRQ		BSX		
TASK ORG	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
	1/2-204	1/2-204	1/2-204	1/2-204	1/2-204	1/2-204	1/2-204	1/2-204	1/2-204	1/2-204	1/2-204	1/2-204	1/2-204	1/2-204	1/2-204
TF MISSION - INTENT TF 2-114 DEFENDS IN SECTOR 120830 JAN 85 FROM NB430276 TO NB413253. WE ACCEPT BATTLE MANOEUVRE, ASSIST THE WITHDRAWAL OF THE COVERING FORCE AND DESTROY THE ENEMY WEST OF MUDDY TOWER. WE WILL RETAIN SP LION AND KILL THEM AS THEY MASS TO BYPASS IT AFTER CROSSING THE RIVER. THE BDE CDR WANTS US TO FORCE THE SECOND ECHELON NORTH INTO 2 ARMOR TF FIREPOCKETS.															
⑤ OCCUPY	TIGER	STRAWBERRY	OWL	CAT	ROBIN	SCREEN TF FRONT	GRID								
KILL ③	RED (BLUE)	BLUE	WHITE (TRP 3)	YELLOW (CP 22)	RED (BLUE)	0/0	NB428305								
⑦ PREPARE	CUB	—	FLY	DOG	MINK	SCREEN TF RT FLANK	0/0 GRID								
KILL ③	SILVER (TRP 25)	—	BLACK (GREEN)	PINK (CP 17)	PINK (TRP 28)	BACK TO CP 6	NB435297								
⑥ RECON	BLUE	—	—	YELLOW	RED	CP 9 TO CF	0/0 GRID								
RECON OF INITIAL BP	BLUE	BLUE	TRP 3	CP 22	RED	PP T&B	NB448112								
④ RESERVE	—	—	TF RES	—	—	—	0/0 GRID								
COUNTER ATK ②	LION	—	LION	CAT	ROBIN (TIGER)	0/0	NB446121								
MISSIONS	0/0 ECHELON OBSERVE #6	STRAWBERRY DEFENSE	DEFEND AND DESTROY	DEFEND AND RETAIN	DESTROY FROM BATTLE POSITIONS	ASSIST BH	DISPLACE IN SECTION ONLY								
FIRE PRIORITY TO SCOUTS INITIALLY. AFTER PL PRIORITY TO TM A	DEFEND AND RETAIN	DO NOT UNDERGO WITH OUT ORDERS	FIRE FOR TM A CAT INTO LION	ESTABLISH ALT TOX 0/0	SCREEN J RIGHT FLANK	DETACH GRTMS TO TF CONT 0/0	SUPPORT SCOUTS W/SMOKE & ILLUM								
OBSTACLES	3/8/111 PREPARE OB #6. PRIORITY CONTRAFLANK PROTECTION		TF RESERVE				PRIORITY TARGETS TO TM A & CO D ON PL								
LOCATIONS	③ TOC NB413645	④ CRTMS NB413682	① FLD TMS NB413825	LRP 1 NB413822	LRP 2 NB413121	LRP 3 NB413182	MCP NB428182								
MOVEMENT ORDER	0/0 SCOUTS TM TANK	CMND GP TOC	TM A	B(-)	3/8/111 MAX CBT TMS	ECHO (-)	DELTA								
MOPP	⑥ OEG 50 RAD5	③ ADA TIGHT	① MOVE COMB AMBER	⑤ IREXON TWO	② SP 101430	④ RP 101945	⑧ PIR 101945								

My suggested matrix does not present a particular battle scenario or pretend to be the final edition. It is just an expanded version of Major Henry's excellent contribution. If we are to advance in our profession, infantrymen must continue to improve on each other's ideas and actions. INFANTRY magazine helps by providing a forum for these ideas.

NOYES B. LIVINGSTON III
CPT, Infantry
Texas Army National Guard
Houston, Texas

FSB GOLD REUNION

On 21 March 1967 a large VC-NVA force clashed with units of the 3d Brigade, 4th Infantry Division, at Fire Support Base GOLD near Suoi Tre, Republic of Vietnam. The units included the 2d Battalion, 77th Artillery; 3d Battalion, 22d Infantry; 2d Battalion, 12th Infantry; 2d Battalion, 22d Infantry (Mechanized); and the 2d Battalion, 34th Armor.

A 20th anniversary reunion is being planned to commemorate this outstanding combined arms victory. The reunion is scheduled for 20-21 March 1987 at Fort Carson, Colorado, home of the 4th Infantry Division (Mechanized), which is participating in this event to honor its Vietnam veterans.

The principal speaker at the banquet will be General John W. Vessey, Jr. (Retired), former Chairman of the Joint Chiefs of Staff, who commanded the 2d Battalion, 77th Artillery during the battle.

Anyone who is interested in attending this reunion or who would like more information may write me at P.O. Box 775, Ferriday, LA 71334, or call (318) 757-8500/2331. (I am a veteran of the 2d Battalion, 34th Armor.)

LARRY MOSS

MILES vs LIVE FIRE

I was disappointed to read Lieutenant Mark A. Dorney's comments (September-October 1985, p. 4) about my article "Concerning Safety" (May-June 1985, p. 10), because they represent some

widely held and incorrect views of the details of close combat and training for close combat.

Under certain circumstances MILES is an excellent training device. It is inherently incapable, however, of doing many important things that live ammunition does quite well. MILES does not provide immediate feedback for misses to a firer and only very near-miss feedback to a target. This prevents a firer and his leader from correcting his aim. With live ammunition the impact of a bullet on bark or dirt, or a visible tracer, gives a definite reference point that can be used to correct errors in aim or fire control. MILES lacks anything resembling a tracer element, and this makes it all but useless at night (near ambush being a partial exception).

MILES is stopped cold by the lightest concealment, while a soldier firing live ammunition at a target behind a bush could be given credit by an evaluator for suppressing or killing the target. This defect tends to warp tactical perceptions in training. Doing away with all natural concealment devalues training even more.

Finally, because MILES is a straight line-of-sight system, which does not correspond to the trajectory of a bullet, it cannot teach much of combat marksmanship. MILES was never intended to substitute for live ammunition but to improve the training value of blank ammunition.

Live grenades are usually allocated at one or two per combat soldier per year, which tends to make scoring a live grenade range pointless. All this is irrelevant, however, because such things as accuracy of throw and safety procedures can be taught quite well with inert grenades and practice fuzes. What cannot be taught is the confidence and courage it takes to use a live hand grenade under combat conditions. This confidence and courage can be taught by placing a man just outside a bunker and having him put a grenade inside the bunker (which is at least as safe as placing him inside the bunker and having him throw the grenade out). Live grenades are issued to train soldiers morally. They must be used for that purpose.

Lieutenant Dorney suggests that such

demolitions as may be required for post projects be done by soldiers, and I endorse that suggestion. Such projects are not as common as is implied, of course, but the idea still has some value. What is missed, and this is the real flaw in his thinking (he is not alone in this), is that what would be taught by doing this is mere mechanical skill. Setting off all the demolitions in the world will not prepare a soldier for the day when he must crawl forward with a satchel charge, place it, light the fuze, and crawl back to cover, the whole time trusting in his comrades to keep the enemy suppressed. This can be taught only by employing live demolitions as part of normal tactical training with live ammunition.

Lieutenant Dorney hails from a branch (field artillery) in which mechanical skills are held in highest esteem, and rightly so for that branch. It would be well for the Army as a whole, however, if it were widely understood that in the ground-gaining arms mechanical skills must play second fiddle to moral strength and physical courage, for only with courage can mechanical skills be used to advantage.

THOMAS P. KRATMAN
CPT, Infantry
Fort Stewart, Georgia

REVAMP ECHO COMPANY

In their recent articles, Captains Michael S. Hackney and George E. Knapp have made strong cases for the versatility and effectiveness of the new antiarmor company. But without the proper equipment and support, it will not be able to live up to its potential. (See "Echo Company: The Fifth Player," July-August 1985, p. 20, and "Echo on the Battlefield," September-October 1985, p. 30.)

Captain Knapp alludes to many of Echo Company's major weaknesses. With no recovery vehicle organic to its maintenance team, no XO track, limited NBC equipment, no camouflage nets, no ring mounts for its wheeled vehicles, no available FIST, no primary radio telephone operators for the command tracks, and no cook section, Echo Com-

pany can be easily supported only through attachment or extensive juggling of battalion assets.

I firmly believe that there is a strong case for revamping the battalion and antiarmor company TOE. Echo Company should be regarded as a maneuver company, particularly in a heavy division, instead of as a much-diminished combat support company. Antiarmor operations could be more aggressive and sustainable, regardless of how Echo Company was employed.

As a former antitank platoon leader and now an Echo Company XO, I strongly urge the Infantry School to reconsider our support needs. A table of organization and equipment designed only for attachment seriously affects a unit's ability to conduct sustained combat operations.

WILLIAM H. HAYES

1LT, Infantry

Nebraska Army National Guard

Lincoln, Nebraska

MORE ON COMPANY E

Captain Michael S. Hackney's article entitled "Echo Company: The Fifth Player" (July-August 1985, p. 20) is an incisive piece. As a member of that small but growing fraternity of former antiarmor company commanders, I would like to add my thoughts to his.

The antiarmor company was not envisioned as a maneuver company; its platoons were to be parceled out to its task force's sub-elements. During my tenure as commander of Company E, 1st Battalion, 10th Infantry, however, my unit and sister Echo Companies of the 4th Infantry Division (Mechanized) were often employed as single entities, but not in the traditional sense of maneuver as the mechanized infantry or armor company teams were.

My experience has demonstrated that the company is best employed this way.

A limiting factor in attaching antiarmor platoons to the mechanized and armor company teams (or attaching infantry and armor platoons to Company E) is the relative slowness of the ITV. The M901 series of vehicles simply cannot keep up with the M60 and the M113, especially during the final stages of an assault or during fast-moving operations.

In the offense, Company E can successfully fulfill its role of providing long range overwatching antiarmor fires by maneuvering to the rear of or adjacent to mechanized infantry and tank heavy teams either as a single entity or as dispersed platoons operating across the task force sector under the command and control of its own company headquarters. This centralized arrangement also keeps the maneuver commanders' span of control at a manageable level.

I concur with Captain Hackney's view of Company E's employment in the defense. Keeping the company "pure" allows the TF commander to mass fires along suspected avenues of approach into the TF battle position. When the TF moves from successive battle positions during a delay in sector, the centralized control of antiarmor elements is highly desirable. With his ITVs under the control of the Company E commander, the TF commander has a single point of contact on the battlefield; if the ITV platoons are attached to the infantry or tank teams, he must deal with as many as four commanders.

Captain Hackney discusses organizing the company into two platoons of six ITVs and one M113 each with the third platoon having eight ITVs and one M113. I believe that eight systems under the control of one platoon leader is too unwieldy. The best way to employ the techniques Captain Hackney describes is to organize the battalion's 20 ITVs into four platoons; each with five ITVs and one M113. This would mean adding one platoon leader, one platoon sergeant, and one M113 to the TOE. Organized in this manner, though, each platoon could es-

tablish a habitual relationship with one of the rifle companies to provide a degree of familiarity and interoperability when the situation does not dictate that the antiarmor platoons be attached out. (This arrangement does not mean that all four platoons would be attached out simultaneously; that would be the exception rather than the norm.)

An appropriate use of an ITV section or platoon that Captain Hackney does not discuss is to attach a section or platoon to the scout platoon when it is ordered to screen along or guard an exposed flank astride a high-speed avenue of approach. (Under the 4X5 ITV configuration, platoon, not section, employment would be the norm.)

Captain Hackney's brief discussion of the lack of recovery, medical, and mess resources to support an Echo Company points to a critical shortcoming in the current infantry battalion organization. In addition, I believe the battalion desperately needs a track-laying, armor-protected, ammunition-hauling vehicle. On a high intensity battlefield, missiles will be expended rapidly, thus increasing the requirement to re-arm far forward.

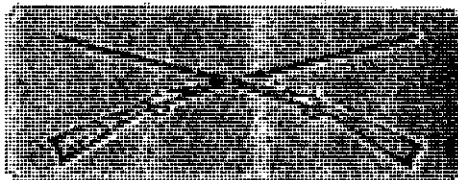
The lack of a fire support team is difficult to understand when one considers the current employment practices of battalion and brigade commanders. With twenty 13-power thermal sights, the antiarmor company has a great ability to see beyond the FLOT and interdict initial and follow-on enemy elements with indirect fires. The optics on the ITV make any vehicle a potential fire support vehicle.

An Echo Company should not be considered a combat support organization to be parceled out willy-nilly. But it does add a new dimension to the heavy force battlefield. What lies ahead now is a refinement of doctrine and organization; only then will the potential of the "fifth player" pay true dividends.

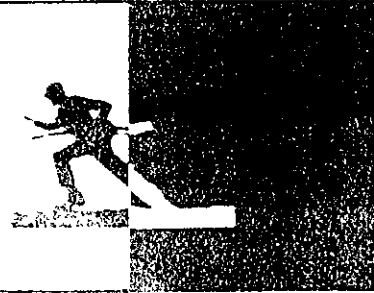
LEE F. KICHEN

MAJ. Armor

Slippery Rock, Pennsylvania



INFANTRY NEWS



THE ARMY's 29th Infantry Division, famed for its D-Day action on Omaha Beach during World War II, was reactivated on 5 October 1985 at Fort Belvoir, Virginia. It is the only National Guard light infantry division.

Like the Active Army's light infantry divisions, the 29th is designed for quick response. About 10,500 troops from Maryland and Virginia National Guard brigades make up the division.

FIELD CIRCULAR 71-4, Combined Arms Live Fire Exercise (CALFEX), was printed in October 1985. It provides complete guidance for the development of live fire, combined arms training and gives the user a thorough list of planning considerations and a detailed formula for the coordination of resources including such factors as ammunition data, target emplacement guidance, and safety diagram procedures. Four sample scenarios are included, as are a sample LOI and control plans.

The circular was distributed to all members of the close combat (heavy) force down to battalion and squadron level. Units and activities that need additional copies may obtain them through the Armor School's Army Wide Training Support warehouse by writing to Commander, U.S. Army Armor Center, ATTN: ATZK-DPT-NRT (AWTS), Fort Knox, KY 40121.

THE ARMY'S Tank-Automotive Command has revised the payload and towing capacities of the commercial utility cargo vehicle (CUCV) and high mobility multipurpose wheeled vehicle (HMMWV) families. The loads may not exceed the limits (in pounds) shown in the accompanying table.

The payload includes any weight placed in or on a truck, including personnel, cargo, equipment, and the shelters on

VEHICLE	PAYLOAD	TOWED LOAD	GROSS VEHICLE WEIGHT
HMMWV Family			
M998 utility truck			
with troop seats	2,081	3,400	7,600
with 4-door soft top	2,247	3,400	7,600
M1038 utility truck			
with troop seats	1,954	3,400	7,600
with 4-door soft top	2,120	3,400	7,600
M1025 armament carrier	2,105	3,400	8,160
M1026 armament carrier	1,978	3,400	8,160
M966 TOW carrier	2,038	3,400	8,160
M1037 shelter carrier	3,126	3,400	8,600
M996 ambulance	1,482	3,400	8,600
M997 ambulance	1,856	3,400	8,600
CUCV Family			
M1008 cargo truck	2,900	3,160	8,600
M1008A1 cargo truck	2,600	3,160	8,600
M1009 utility truck	1,500	1,200	6,775
M1010 ambulance	2,080	N/A	9,555
M1028 shelter carrier	3,600	3,160	9,400
M1028A1 shelter carrier	3,600	3,160	9,400

shelter carriers. Towed loads include the weight of a towed trailer and its payload. Gross vehicle weight is the weight of a truck and its payload.

The M1008, M1008A1, M1028, and M1028A1 vehicles may tow aircraft that weigh up to 15,000 pounds, and the M1009 may tow aircraft up to 10,000 pounds, under special precautions and at

very low speeds.

Overloads are not authorized on CUCVs and HMMWVs. If a planned load exceeds the limits, the vehicle operator must either reduce the amount of equipment to be transported, transfer equipment to a trailer or another vehicle, or use a vehicle with a higher capacity.

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

The fifth annual National Infantry Museum Five-Mile Run was held on 12 October. More than 2,000 runners participated. The race, which is supported by both the military and civilian communities, is the Museum's largest source of nonappropriated funds. These funds are used to purchase many important artifacts and "extras" for the Infantryman's museum.

At a ceremony on 5 November, four former members of the 84th Infantry Division (Railsplitters) presented a stained glass replica of the division's patch for hanging in one of the Museum's windows. The four men, all now retired from

the Army, served with the 84th Division during World War II, and presented the replica on behalf of the Railsplitters Association.

This replica brings to 22 the number of brilliant glass panels that hang in the Museum's windows. Dick Grube, the Museum's Director, says there is room for 18 more such panels. For those division associations or friends of the Army who might be interested in donating a panel, experience has shown that the costs run between \$100 and \$200 for each twelve-by-fourteen-inch replica.

On 21 November, Dr. Brooks Kleber, the Army's Assistant Chief of Military History, spoke at the dedication of a monument honoring all U.S. prisoners of war who died in captivity. Dr. Kleber

was a prisoner of the Germans during World War II; he was captured while serving with the 90th Infantry Division. The World War II period monument is a gift from the city of Columbus, Georgia; it was given to Fort Benning when street changes made it necessary to remove it from its original location.

Conservation work for the Museum on two historic flags has been completed by the Rocky Mountain Conservation Center in Denver. They are a 34-star U.S. flag, which was picked up on the battlefield after the fighting ended at Gettysburg in July 1863, and an extremely rare 2d Regiment, U.S. Colored Troops flag, also from the Civil War period.

Major (Retired) Hiram A. Duncan, a former member of the 503d Parachute Infantry Regiment, presented the Museum with the parachute uniform jacket and trousers that he wore on 5 September 1943 when he parachuted into Markham Valley on the island of New Guinea. This was the first combat jump made by U.S. parachutists in the Pacific theater of operations during World War II.

A collection of medals, decorations, and documents that belonged to Major General Charles H. Muir has been given to the Museum by General Muir's family. As commander of the 28th Infantry Division in World War I, General Muir led his men through the Marne fighting in July 1918 as well as in the Aisne-Marne and Meuse-Argonne offensives.

Miss Virginia J. Hanson has donated two World War I mugs to the Museum. The mugs were taken by First Lieutenant Alvin E. Belden of the 123d Infantry Regiment, 31st Infantry Division, when elements of his unit overran a German trench.

An M48 tank and three new artillery pieces have been placed on the Museum's grounds — a U.S. M1887 cannon made at the Springfield Armory; a U.S. M1902 three-inch gun; and a French 75mm gun of the kind that was adopted and used by U.S. forces during World War I.

Other recent acquisitions include a Revolutionary War period musket and bayonet, and a Colt M1873 revolver. A rare palmetto-marked M1842 percussion pistol that was made exclusively for the South Carolina militia just prior to the War Between the States has also been

added to the Museum's weapon collection.

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

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

THE DIRECTORATE OF COMBAT DEVELOPMENTS has furnished the following news items:

•**Standardization.** In April 1986 the Infantry School will host a meeting of a special group of people who are dedicated to the promotion of standardization in their armies. The group will represent the working elements of the American, British, Canadian, and Australian (ABCA) standardization program.

In general, the tasks for the April 1986 meeting will be to review and confirm previous standardization agreements, originate and draft new agreements, identify new areas for cooperation, develop concepts, and exchange information.

The Infantry School's Commandant will open the session on 21 April, after which the School will hold a variety of infantry briefings and demonstrations and will host several social gatherings.

•**EXFOD.** EXFOD is the Army's acronym for explosive foxhole digger. The initial work on developing methods for digging foxholes by the use of explosives occurred in early 1953. Since then, many concepts and a few devices have materialized, but all have fallen short of the "ideal" EXFOD. The requirement to provide that EXFOD, however, still exists.

Recent infantry, engineer, and material developer actions may well give us an interim device that will be lightweight, quick and easy to operate, and reliable to use in difficult soils found in temperate zones.

•**Small Arms Projects.** The Infantry

School is working on several new projects in the small arms area.

A program to enhance the M16A2 by attaching an optical sight to the rifle is intended to increase the individual soldier's ability to engage targets at ranges of 300 to 600 meters. (See INFANTRY, September-October 1985, page 10.)

Another outgrowth of the M16A2 rifle program, the XM-4 carbine program, is an effort to develop a shortened version of the M16A2. The XM-4 is designed to be used by commanders, drivers, and other soldiers who need more freedom of movement than they have when using the rifle and more firepower than they can get with a pistol.

A third program, on the M60E3, is aimed at reducing the weight of the M60 machinegun from 23.2 pounds to 18.25 pounds, thereby also reducing a gunner's combat load.

Additionally, the Infantry School, working with the John F. Kennedy Special Warfare Center, is developing a new sniper rifle to replace the outmoded M21 system currently in the inventory.

•**Multipurpose Bayonet.** The Infantry School, in conjunction with the Army's Armament Research and Development Center, is aggressively pursuing a multipurpose bayonet that will function as a bayonet, a combat and field knife, and a wire cutter. (See INFANTRY, November-December 1985, page 8.)

This bayonet would be issued to infantry soldiers, to members of divisional engineer units, and to soldiers in special operations forces and would replace the present M7 bayonet and the numerous personal knives, wire cutters, and other such tools that soldiers now carry. It will weigh no more than 1.8 pounds and will be compatible with the M16 series of rifles and the XM-4 carbine.

User testing at Fort Benning is scheduled during the period February to May 1986.

•**JANUS Simulations.** The Infantry School will soon receive the hardware and software necessary to conduct JANUS simulations. JANUS, a computer simulation of the battlefield environment, uses color graphics to represent individual weapon systems (M1 tank, Bradley, TOW, AH64 helicopter) to simulate

combat and weapon effects at a near real time level.

It is supported by a VAX 11/780 minicomputer and software that consists of 20,000 lines of FORTRAN code. JANUS uses digitized terrain provided by the Defense Mapping Agency. The software allows the contour lines to be displayed graphically at a player's workstation, and permits a user to specify both enemy and friendly force structures. A user can also specify the numbers and types of units, weapon systems, and individual infantrymen.

During the simulation, the model computes the line-of-sight and range from an attacking weapon system to its target. Using probability of hit and probability of kill data, which is put into the system at the beginning of the simulation, the software calculates whether or not a target is hit and/or destroyed.

This high resolution computer simulation will allow the Infantry School to simulate changes in equipment and doctrine throughout the combat spectrum and will help considerably in the decision-making process as it relates to equipping and deploying the Army of the future.

THE FOLLOWING NEWS ITEMS were submitted by the President of the Infantry Board:

• **Day/Night Reflex Sight (DNRS).** Since 1980, input the Infantry School has received from the field has indicated a need for a rifle sight system that would permit accurate day and night firing without an active infrared signature such as that which occurs with the infrared aiming light, AN/PAQ-4.

In 1983, the 9th Infantry Division initiated a quick reaction program document to expedite the fielding of a prototype day/night reflex sight (DNRS). The division tested that sight in the summer of 1984. As a result of that testing, the Infantry School judged the concept to be feasible and initiated the procurement of additional DNRS for testing by the Infantry Board.

The DNRS is a passive unity power sighting device, approximately three inches in diameter and six inches in length, with a 40-degree field of view and an illuminated pulsing maltese cross reti-

cle image. Two BA 1567 U (AA size) batteries provide the sight's power. With the batteries installed, the device weighs 21 ounces. When mounted on the M16 rifle, it straddles the carrying handle of the M16A2 rifle, with the sight optics to the left and the electronics to the right of the handle.

Although it is referred to as a day/night sight, the DNRS has no inherent night vision capability; firers must wear night vision goggles to sight on targets by viewing through the DNRS.

The capabilities of an M16A2 rifle equipped with the DNRS were compared with those of an M16A2 rifle with its integral iron sights (day) and equipped with the AN/PAQ-4 (night) during a concept evaluation program test conducted by the Infantry Board in October 1985.

Eighteen soldiers took part in a series of side-by-side comparisons during day and night live fire exercises using single-shot and three-round burst modes of fire to engage E-type silhouette targets at ranges from 50 to 580 meters. During the night firing exercises, the soldiers wore commercial single objective lens night vision goggles to provide their night vision capability.

The visual signatures of the systems were compared during the day and night by data collectors who used their unaided eyes, binoculars, image intensification night vision devices, and thermal viewing devices. Human factors and safety data were also collected during the test.

The test results will be used by the Infantry School to assess the DNRS's potential for future infantry application.

• **Physiological and Psychological Effects of NBC and Extended Operations on Mechanized Crews (Infantry P²NBC²).** With the resurgence of interest in the NBC contamination threat, a new dimension has been added to the survivability of armored vehicle crewmen. The requirement for crews to perform combat tasks for extended periods of time

while encapsulated at various MOPP levels is a critical one. A crewman's survivability is further challenged by the thermal stress that is imposed on him when he must wear chemical protective clothing while operating in warm environments.

Previous research conducted by the Army's Institute for Environmental Medicine and the Army's Human Engineering Laboratory examined the performance of armored vehicle crewmen under simulated NBC conditions for periods up to 12 hours.

In February 1984, the Army's Armor and Engineer Board (USAARENBD) conducted a limited investigation of NBC extended operations during a series of 60-hour exercises using a surrogate research vehicle (SRV). These exercises, conducted in winter without thermal stress, validated the need for further research into the effects extended NBC operations may have on vehicle crewmen.

A collaborative effort in August and September 1984 between the USAARENBD and the Army's Medical Research and Development Command (USAMRDC) assessed the capability of crewmen of M1E1 vehicles to operate in a warm, simulated NBC environment for up to 72 hours. This effort identified a number of endurance-limiting factors that required further investigation. The results also supported a need to conduct similar studies for crewmen in all types of armored vehicles.

During September and October 1985, the Infantry Board, in collaboration with USAMRDC, the Army Research Institute (ARI), the Army's Aeromedical Research Laboratory (ARL), the Walter Reed Army Institute of Research (WRAIR), and the Army Research Institute of Environmental Medicine (ARIEM), conducted a test at Fort Benning of the physiological and psychological effects of NBC and extended operations on mechanized infantry squads (P²NBC²) to assess the performance and endurance of mechanized infantry squads operating under simulated NBC conditions for extended periods. The test, conducted in two phases, addressed performance degradation over time and endurance. (See INFANTRY,

INDEX

The 1985 Index to INFANTRY has been prepared separately and is available to anyone who requests a copy. Please address your request to Editor, INFANTRY Magazine, Box 2005, Fort Benning, GA 31905-0605.

July-August 1985, page 9.)

During Phase IA, four Bradley infantry fighting vehicle (BIFV) squads from the 29th Infantry Regiment took part in a series of repetitive six-hour scenarios throughout a scheduled 72-hour exercise. Each cycle required the squad members to perform selected ARTEP 71-2 tasks under MOPP-4 conditions.

The degree of effort each task required varied from light to moderately heavy exercise. The soldiers also wore instrumentation to monitor heart rate, core temperature, and respiration. During the last 45 minutes of each six-hour cycle, the squads participated in a hasty decontamination exercise and an exchange of MOPP gear. This was the only time the soldiers were permitted to remove their MOPP gear; during this period the soldiers could eat, smoke, or take care of their personal needs.

After three six-hour cycles, the soldiers were allowed to sleep for six hours. Testing was then resumed and continued until a squad was deemed combat ineffective because of personnel losses.

The test soldiers were withdrawn from the test when they neared their medical limits, or when they became functionally or psychologically incapacitated. All of the squads were able to complete 60 hours under the test conditions.

During Phase IB, two BIFV squads from the 29th Infantry Regiment and one M113A1 mechanized infantry squad from the 197th Infantry Brigade took part in the endurance phase of the test. The members of all three squads wore MOPP-4 gear continuously throughout the entire exercise.

The cyclic testing of Phase IA was repeated, without the hasty decontamination event to provide a respite, until the

squads were deemed combat ineffective. Under these conditions, the squads were able to complete 33 to 40 hours.

The test results will be used by the Infantry School to provide input to the Armor School for a draft field circular concerning extended combat operations in a chemically contaminated environment.

HOT WEATHER BATTLE DRESS UNIFORMS will be available for purchase in military clothing sales stores in March 1986 in Central America, Hawaii, Panama, Portugal, and Spain. They should be available in Europe, Japan, Korea, and the United States in April 1986.

New soldiers will begin receiving the uniforms in their clothing bags in February 1986.

SWAP SHOP



Soldiers ought to receive immediate feedback when they fire their weapons. All too often, though, live fire and maneuver ranges do not offer this type of feedback, and the soldier does not really know whether his fires are effective. A little bit of planning can do a great deal to alleviate this problem.

Some simple "kill targets" can be constructed from the following materials:

- 120 feet of rope (old and worn out).
- One snap-link per target.
- Several hundred feet of 550-pound cord or old commo wire.
- Some old clothes.
- Empty MRE boxes.

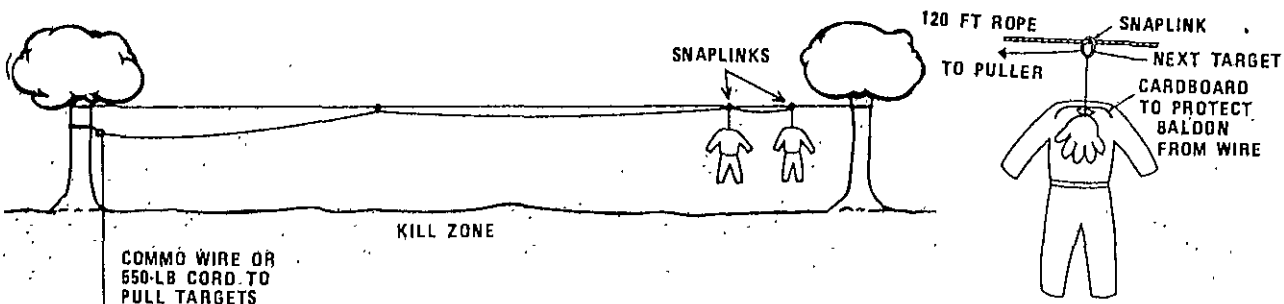
Chicken wire.

Heavy duty balloons or surgical gloves.

First, build a single-rope bridge between two anchors about nine feet above the ground. Then make the dummies out of the chicken wire and dress them in the old clothes. Put PIR/IR in the pocket.

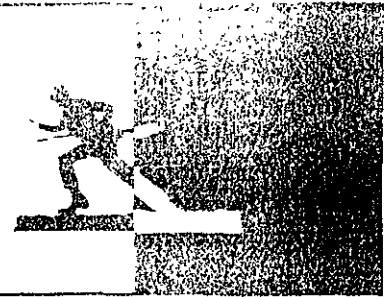
The weight of each dummy will be supported by the inflated balloon or glove as shown in the sketch. When the dummy receives a killing shot, center of mass, the balloon will pop and the dummy will fall to the ground.

These targets can be used for ambush ranges or for other maneuver ranges to simulate fleeing or charging enemy forces. (Moving targets are much harder to "kill.")



(Contributed by Captain Timothy L. Canty, Company B, 1st Battalion, 32d Infantry, Fort Ord.)

FORUM & FEATURES



Bradley Platoon Tips

LIEUTENANT THOMAS T. SMITH

During my tour as a Bradley platoon leader, I learned that there is considerably more to know about the job than just the tactics and doctrine connected with leading the platoon. So, instead of debating those issues here, I want to discuss a few of the more practical and technical aspects of the job and to share some pragmatic solutions to a few problems.

First, a J-series (Bradley IFV) mechanized infantry platoon leader is responsible for about \$7.8 million worth of vehicles and equipment. The squad and platoon equipment in the platoon issue totals more than 800 items. Property accountability is therefore a critical aspect of the job.

Basic issue items must be inspected frequently. The vehicle bumper number should be etched on every piece of a Bradley's basic issue equipment, including the 60 or more 30-round 5.56mm magazines. Then the platoon leader can settle disputes between squad leaders over property custody with a simple statement: "If your bumper number isn't on it, it's not yours." He should confiscate all equipment of dubious heritage—items with multiple or scratched out bumper numbers, for example.

Our company had a lockable metal box (NSN 8115-00-679-5594) for each squad. In garrison, valuable basic issue items such as CVCs or PRC-68 radios, field phones, and the like were secured

in the metal box with a 200-series lock. The box was then locked inside the vehicle's troop compartment.

Neither a lock on the drivers' hatch nor the lock in place on the combat door, though, will keep a determined intruder out of a Bradley. He can get in through the coaxial access doors. For this reason, a heavy strap should be tightened across both of these access handles when in garrison.

PREPARATIONS

When preparing to go to the field, a platoon leader must plan carefully and pay attention to detail. First, if everything that goes into the Bradley is not properly stowed, either the equipment or the vehicle itself can be damaged.

Items stowed under the seven-gallon water container or anywhere along the right interior ammunition shelf must be strapped securely. Just forward of the squad compartment's Halon internal fire extinguishers is a small opening in the right side of the turret basket. Loose equipment has a nasty habit of going through this hole and causing damage to the turret or the fuel cells.

There are also openings in the turret step from the squad compartment, and any unsecured items—even a plastic canteen—that is allowed to float around in the turret can bounce through one of

these openings into the turret base and cause extensive damage when the turret is moved.

A tool bag stowed in the engine compartment must be fully secured with straps, or it will slide off the stowage shelf and into the right final drive.

The cleaning rods and boresight adaptor for the 25mm chain gun are very expensive and easily damaged. These can be stowed in an extra M60 spare-barrel bag ordered from the arms room.

Rucksacks are stowed under each troop seat, and their contents should be standardized to include wet weather gear, MOPP suit, one ration, and ammunition.

Since there is no storage space for the PVS-5 night vision device, in our company the carrying case was strapped under the Bradley commander's seat.

The two net bags and two pole bags that make up the camouflage screen system for the Bradley can be strapped to the trim vane—the net bags on the far right side, one above the other, and the pole bags horizontally, one above the other. The round base of the pole bags must be up against the net bags, or they will obscure the driver's vision.

At the National Training Center at Fort Irwin, we found that each Bradley could carry ten rolls of concertina wire and six pieces of six-foot PSP steel matting for overhead cover. Wire and PSP can be strapped to the side of the vehicle, anchored by the armor skirt-lifting handles.

Eight rucksacks can be strapped to the back of the bustle rack. (This is not possible in forested terrain, but it worked well in the desert.)

Other matters, too, need attention before going to the field.

The seven-gallon water container is a good feature of the Bradley, but the system is not designed to allow a soldier to fill his canteen, just his cup. Soldiers who try to fill their canteens bend the water container nozzle up, causing tears in the rubber gasket or cracks in the plastic. The solution my platoon implemented was to put a clear plastic hose (3/8-inch interior diameter) on the nozzle with a small automotive clamp. Total cost, 13 cents.

The two hull drain plugs must be checked constantly to make sure they are tight. If they are allowed to loosen and hang down, they can bend and become unserviceable.

The driver should be issued a PVS-5 battery. If the power cable to his AN/VVS-2 night vision viewer ceases to function, he can install that battery and continue to operate.

In our company each squad was issued a good pair of bolt cutters (NSN 5110-00-596-9102) with 12-inch handles. These are a great help in breaching wire obstacles and also in clearing wire from the final drive and the tracks of the vehicle. In garrison the bolt cutters were stored in the arms room.

If standard antenna tie-downs are used to tie the antennas back on the Bradley, they seldom stay in place, and when they snap free the clip and rope tend to wrap around the turret. In the field, our platoon used half-inch cargo straps near the antenna base to correct this problem.

OPERATIONS

There are also some things that can be done to help matters during operations.

If a map is laid on the turret, it will blow off and disappear just when it seems it is needed most. (The Bradley goes very fast.) Two maps with operations overlay should be prepared. One can then be stored in a safe place and the other put on the turret, but under the bunji stretch

cord hooked from the base of the aircraft sight to the lip of the gun casement. A small piece of green canvas can be used to cover the map to prevent it from being seen from the air.

Two small plastic call-sign and frequency boards should be put on the vehicle—one taped to the turret just in front of the commander's hatch, and the other inside the turret on the coaxial access door. Call signs and frequencies for two days can be put on each of them in grease pencil. (This is better than having all those ink scribbles on hands and arms.)

For better command and control, although our battalion had standardized its system for vehicle identification markings, our platoon used some additional markings when in the field. We put 10-inch strips of green tape on each side of the turret. The platoon leader's vehicle had a V, the first squad's one vertical strip, second squad two horizontal strips, and the third squad three vertical strips. On many occasions, these were a great aid to command and control. At night the tape markings were visible in the thermal sight at short range whereas the standard paint markings were not.

For dismounted operations, the new PRC-68 squad radio cannot be depended upon. The platoon leader needs a PRC-77 on a backpack aboard his vehicle. Since he does not have one, he can take one from a squad leader. Although this leaves that squad with only one radio in the turret, a platoon leader has to be able to communicate. (Company commanders tend to get excited when they can't talk to their lieutenants.)

The PRC-68 squad radio is useful in the defense, however, and its range can be improved with the attachment of a PRC-77 short whip antenna. Once, in a mounted movement to contact at night, my platoon radio in the turret went on the blink, and I used the little hand-held PRC-68 to control the platoon. (I had no way of receiving on the platoon net, but at least my platoon members could hear me.)

Command and control has been improved by the use of fighting sections with the Bradley. The platoon leader and one squad as wingman form the first section, the platoon sergeant and one squad

form the other. When the platoon dismounts, the platoon sergeant controls the vehicles. When the platoon leader and all the squad leaders are on the ground, the assistant squad leaders become vehicle commanders. It is important for the platoon sergeant not to become too fond of one vehicle but to rotate every other day.

The platoon leader's wingman should always be on the right side of the platoon leader's track. Although the driver of the wing vehicle can see well to the left, his vision to the right is blocked by the engine compartment.

SIGNALS AND SOPs

Flag and arm signals are also critical to command and control, and SOPs concerning these signals must be practiced often.

SOPs should also be used to distribute firepower during the defense or movement to contact. One vehicle per section should be designated to engage BMPs or soft-skinned vehicles with its 25mm chain gun. The other vehicles of the section should be prepared to engage tanks with their TOW missiles. (TOWs should always be up in the defense or on short halts.)

In the defense, Bradley drivers should not be allowed to leave their hatches open, because an open hatch will prevent the turret from rotating, and if an enemy suddenly appears the gunner will not be able to engage him.

When the unit is mounted and receiving indirect fire, the commander's hatch should be in the first open position instead of fully closed. This improves visibility and seems to offer about as much protection as when it is fully closed.

Another consideration on hatches is the noise from the cooler motor on the thermal sight, which can be heard up to 50 meters in front of a position. In the defense, if the commander's hatch is left open for ventilation and the gunner's hatch is closed, this noise can be reduced by half. (The thermal sight is also power hungry, so vehicles should be started at least once an hour in the defense.)

During operations, the Bradley's speed should be thought of in terms of "dash"

speed for moving quickly between firing or overwatch positions, or for rapidly repositioning forces. It should not be used for rushing forward into trouble or uncertain situations.

Because of their vastly increased supporting ranges, Bradley platoons are often widely dispersed. They should therefore be well-versed in self-recovery. Platoon leaders should practice tow-starting and recovery procedures. In our company, each platoon leader was issued his own set of slave cables with NATO adaptors. This greatly reduced the maintenance team's headaches in finding and jump-starting dead vehicles.

Another technical aspect of the platoon leader's job is Bradley gunnery.

Before each Bradley gunnery exercise, our company had a solid pre-gunnery training period of about a week. At the end of the week a gunners skill test was administered to Bradley commanders, gunners, and assistant squad leaders. This is important both for training new gunners and for refreshing old skills. (Even the platoon leader's radio-telephone operator should be trained as a gunner at every opportunity.)

Fire commands are essential to effective, efficient gunnery. The crews must be taught to use proper fire commands instead of taking the "There's a target; let's shoot it" approach. (Tankers seem to take proper fire commands much more

seriously than infantrymen do. It may be because they have had about 50 years more experience at turret gunnery than we have.)

Range estimation is also a key to good gunnery. At every opportunity squad leaders should be trained on range estimation. The choke sight in the Bradley gun sight works well if the soldiers practice with it.

Several precautions need to be taken during gunnery to protect the weapons themselves.

Our battalion had several incidents in which TOW boresight telescopes were damaged because they were left in the launcher when it was lowered. We added a red tag to the boresight kit, and it was hung from the TOW launcher's UP/DOWN switch to remind the crew to remove the telescope.

The 25mm chain gun is a fine weapon, but it has close tolerances in the feeder link-guide system. When 25mm ammunition is loaded in the ready box, every link-guide should be carefully cleaned and lightly lubricated. This will eliminate any malfunctions caused by debris or dirt in the feeder's link-guide rails.

In a dry, dusty environment, dust will collect on the intake grill screen. When the 25mm fires, this dust is pulled out of the intake screen and into the air, blinding the gunner. To eliminate this dust problem, a platoon vehicle should carry

a five-gallon water can in the bustle rack so that the Bradley commander can occasionally splash water on the intake screen.

These are only a few of the problems and a few of the solutions for Bradley platoon leaders. There are some other problems, though, that leaders need to think and talk about and try to solve. For example, the platoon leader has an M25 protective mask so he can communicate through the vehicle communication system, but this mask does not have a voice emitter. When in the dismounted role, the platoon leader cannot talk on the PRC-77 radio and cannot shout instructions that are audible more than two feet away. In addition, the filter hose becomes tangled in every vine and tree branch within a grid square. I have seen platoon leaders throw the mask to the ground in frustration, preferring to breathe gas rather than wear it.

What do we do now, lieutenants?



Lieutenant Thomas T. Smith, a graduate of Southwest Texas State University, has been a Bradley platoon leader, a rifle company executive officer, and a headquarters company executive officer with the 2d Armored Division at Fort Hood.

The Platoon Team

CAPTAIN JOSEPH K. MILLER

During maneuvers at the National Training Center, and elsewhere as well, a pure infantry or armor platoon operating as part of a company team of Bradley IFVs and Abrams tanks has occasionally found itself in desperate need of closer support from the weapons of the

other branch's vehicles.

As an example, let's assume that such a company team is conducting a movement to contact to eliminate the remaining elements of an enemy motorized rifle regiment before a U.S. counterattack. The company team is in a V formation

using the bounding overwatch technique, but because a heavy fog limits the effectiveness of the BIFV's thermal sights, the bounds between platoons must be shortened to less than 1,000 meters.

With the armor platoon in overwatch, the infantry platoon leader is advancing

his platoon forward to take up an overwatch position on a hill when he suddenly encounters two enemy tanks 800 meters away moving toward his unit. He orders his two Bradleys that are in hull defilade positions behind the hill to engage the enemy tanks with TOWs while he tries to withdraw his and his first squad's IFVs off the exposed side of the hill. Both Bradleys fire their M239-launched grenades and try to suppress the enemy with armor-piercing rounds from their 25mm chain guns. But in less than seven seconds into this small-scale meeting, both Bradleys are hit by rounds from the enemy tanks' main guns.

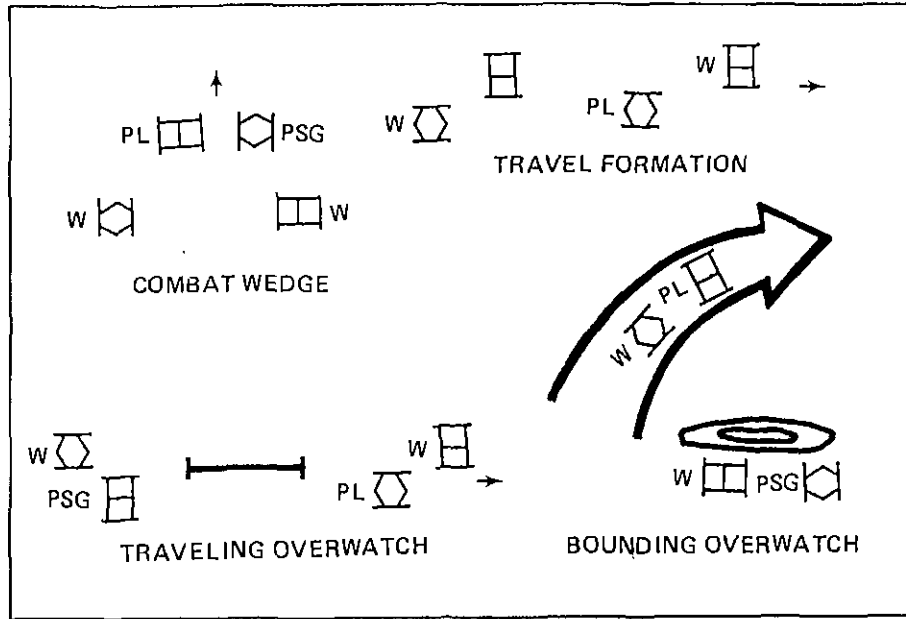
How, then, can company team commanders protect their forces from situations such as this while conducting fire and maneuver with IFVs and M1 tanks on the battlefield? A possible solution is to task organize at platoon level. Mixing two of the three platoons in the company will give the commander more combat power although it may cause some problems as well. (The decision to mix the platoons must be based, of course, on an analysis of mission, enemy, terrain, troops available, and time — or METT-T — with the team commander retaining the flexibility to return to the traditional configuration of three pure platoons when conditions call for it.)

COMBINATION

As FM 100-5 says, "The appropriate combination of maneuver, firepower, and protection by a skillful leader within a sound operational plan will turn combat potential into combat power."

It may be valuable, therefore, to look at the idea of forming combined arms platoons from the standpoint of these three elements of combat power — maneuver, firepower, and protection — and also from the standpoint of leadership.

Maneuver is described as sustaining the initiative, exploiting success, preserving freedom, and reducing vulnerability. If the leading pure platoon in a company team encounters an enemy threat that requires the assistance of another pure platoon, then the commander must take the time to maneuver that platoon into a position of advantage to overcome the threat.



The time lost in doing this decreases the company team's battlefield mobility and may cause it to lose the initiative. But if the commander is leading with a platoon team, then the enemy force can be effectively engaged at once.

The second element of combat power — firepower — provides the destructive force that is essential for successful maneuver. A platoon team enables the commander to place the respective fires of the IFVs and the tanks on the appropriate enemy targets immediately.

But the main disadvantage of splitting the company team's attached platoon is that in doing so the commander is trading immediate effective firepower for massed firepower. To offset this potential weakness, however, the team commander can position one platoon team directly behind the other so that he can quickly reinforce the lead platoon's firepower if the need should arise.

The third element, protection, is the primary reason for task organizing into platoon teams. Alone, either tanks or IFVs are vulnerable to various types of enemy weapon systems. But fighting side by side these vehicles can provide excellent protection for each other. If the commander decides that his mission can best be accomplished by a platoon team, then his team should be arranged as shown in the accompanying sketch. For protection, the platoon leader's and platoon sergeant's wingmen must be of the opposite branch, as they are in the sketch.

If they are not, then the immediate protection and the gains of maneuver and firepower could be entirely lost.

Leadership, the fourth element, is the key to making the platoon team a workable concept, yet this is also the area in which problems are most likely to occur. It is challenging enough to deploy a pure platoon effectively, much less a platoon that contains men and vehicles from another branch. For this reason, the infantry and armor platoon leaders who are selected to lead platoon teams must be especially proficient at their jobs. Strong, aggressive leadership — coupled with extensive battle drills, field training exercises, and gunnery programs — is required.

EXCHANGED

To provide the best possible knowledge and experience in using the capabilities of the two types of vehicle, the infantry and armor platoon sergeants, accompanied by their wingmen, must be exchanged. Since the infantry platoon sergeant is normally the commander of the Bradley containing the junior (or weakest) squad leader, then he will lead a dismounted force consisting of two squads instead of one. This gives the infantry platoon sergeant the support of two squad leaders and more firepower on the ground.

Thus, the squad that remains with the
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infantry platoon leader will be led by the senior (or best) squad leader, and this squad must be maintained at full personnel strength. The armor platoon leader and platoon sergeant will then be in control of the vehicles while the infantry is dismounted. Both the infantry and the armor platoon leaders and sergeants must therefore become thoroughly acquainted

with the attached elements' men, tactics, fire systems capabilities, and maintenance and logistical requirements. To do this, the two platoons obviously must spend a great deal of time training and firing together.

Combining the best of the infantry and armor worlds at platoon level is, at least, one more option a company team com-

mander can consider when looking at the best way to carry out a given mission.

Captain Joseph K. Miller, a graduate of Texas A and M University, served as a rifle platoon leader in Korea and was S-3 Air of the 2d Battalion (Bradley), 41st Infantry at Fort Hood. He recently completed the *Infantry Officer Advanced Course* and is now assigned to the 3d Infantry Division.

Standardize Combat Load

CAPTAIN STEPHEN P. PERKINS

Since early times, the combat load of the infantryman has been a matter of concern to commanders and soldiers alike. Unfortunately, history is replete with examples of commanders loading their soldiers with supplies to meet every contingency.

Before the 1800s this may have been possible, because soldiers were usually picked from society's best physical specimens. During the Napoleonic period, however, the employment of firearms reduced the need for such strength, and the heads of state saw the possibility of even larger armies with better chances of victory. As a result, soldiers of various sizes, normally smaller, ended up carrying excessive loads.

The infantryman learned early, however, that he could not carry every item the upper echelons wanted him to carry. This is especially true of the American "light" infantryman. He has been overburdened because his commanders have wanted him to be not only combat ready but also more comfortable.

But the infantryman has always been willing to accept hardships when he felt it was necessary to conserve energy or to accomplish a mission. As a result, in every conflict in which we have participated, up to and including the 1983 mission in Grenada, our footmobile infantrymen have always discarded the

items they had no immediate or perceived use for.

We have been talking about controlling the soldier's load for a long time. As early as the 1950s, for example, Brigadier General S.L.A. Marshall recognized the need and advocated loading a soldier according to his size, not according to what he wanted to carry. (He saw not only physical attributes but also emotions — especially fear — as limiting factors.)

STUDIES

Since then, many studies have been conducted on the human anatomy and how it affects military operations. In 1966 the United States Army's Natick Laboratories and the Research Institute of Environmental Medicine concluded that the most economical load for the properly conditioned fighting soldier is 30 percent of his body weight (47 pounds for the average soldier's weight of 156 pounds), and that the maximum load for a marching soldier is 45 percent of his body weight (or 70 pounds for the average soldier).

Although almost everyone agrees that a soldier's load must be lightened, when it comes to deciding what should be left behind, there is an endless variety of opinion and no action.

When elements of the 2d and 3d Battalions of the 325th Airborne Infantry

Regiment conducted a combat air assault onto the Point Salines airfield on the island of Grenada in October 1983, the soldiers in these units were carrying approximately 80 pounds each. This weight, coupled with the initial fear inherent in a combat situation and the different climatic conditions, led to a marked decrease in their combat effectiveness.

In one battalion, each soldier was authorized to carry all the ammunition he could get, although the readiness standing operating procedures (RSOP) dictated that each man have a set amount according to his duty position. (Most platoon members and leaders carried more than one LAW, for example.) In such situations, when the individual soldier is overloaded, he moves more slowly and becomes a better target.

The readiness SOPs of most U.S. divisions call for each soldier to carry the following:

- 210 rounds of 5.56mm ball/tracer ammunition.
- Three days' rations.
- Two one-quart canteens of water.
- One bayonet with scabbard.
- Bundles of clothing.
- As many comfort items as each soldier wants to carry.

Except for the water, all of these amounts are either excessive or are not likely to be used. (A typical RSOP load

is detailed in Table 1.)

Additionally, the following items would follow in the A-Bag: Combat boots, waterproof bag, duffle bag, field cap, cotton drawers, 2 handkerchiefs, mess kit, overshoes, scarf, socks, BDU uniform, wool shirt, wool trousers and towel.

In the immediate future, footmobile (light) infantrymen are most likely to be used in restrictive terrain such as cities, forests, and mountains. They will be able to fight and win in those areas only if they prepare for the situation (through knowledge and training) and limit the amount of weight they carry. They will use surprise to compensate for the reduced amount of ammunition, and new clothing and equipment developments will help reduce the weight they do carry to a minimum. (The extended cold/wet clothing system, for example, will provide better protection with less weight and bulk.) They will be resupplied by Army or Air Force aircraft or by motor transport.

Their superiors will certainly have to show a considerable amount of leadership and initiative to make sure their soldiers consume water, perform personal hygiene, protect themselves from cold weather hazards, and carry the proper load to combat.

A recommended list of minimum essential equipment is shown in Table 2. It has its roots in the following order of priority: ammunition, water, food, clothing, mission equipment, and comfort items.

In addition, the supplementary bag would contain the following: Armor vest, bayonet with scabbard, waterproof bag, sleeping bag carrier, air mattress, shelter half (with poles, pins, and rope), sleeping bag with case, duffle bag, field jacket, four MRE rations, poncho, cotton drawers, camouflage uniform, handkerchief, and two undershirts.

This recommended load is based on some restrictive assumptions:

- Current tactics and doctrine will not change significantly.
- REFORGER exercises will continue to require the greatest amount of equipment.
- Operational weather will remain moderate.

ITEM	WEIGHT (Pounds)
UNIFORM	
Belt, trouser	.20
Boots, combat	3.36
Drawers, cotton	.30
Handkerchief	.10
Socks	.30
Uniform, BDU	3.81
Undershirt, OD	.65
Gloves, shells w/inserts	.63
Field jacket w/liner	3.93
Total	13.28
FIGHTING LOAD	
Pistol belt, suspenders, First Aid pouch	1.59
Canteen, 1-qt water w/cup	3.00
Canteen, 1-qt water	1.80
Entrenching tool w/carrier	2.52
Ammunition pouch (2) w/180 rounds	6.21
Bayonet w/scabbard	1.30
Weapon, M16 w/30-round magazine	7.91
Helmet w/cover	3.44
Grenade, hand (2)	2.00
Mask, chemical	2.91
Total	32.68
EXISTENCE LOAD	
Ration, combat, 2 per day (6)	10.50
ALICE w/frame	5.96
Wet-weather suit	1.70
Poncho	1.70
Sleeping shirt	.65
Sweater	.73
Toilet articles w/towels	2.64
Cleaning kit, weapon	.42
CPOG, complete	5.75
Drawers, cotton	.30
Uniform, BDU	3.81
Handkerchief	.10
Socks (2 pairs)	.60
Undershirt (2)	1.30
LAW	5.20
Mine, M21 (2)	36.00
Armor vest	9.30
Surface flare	1.00
Rounds, M60 (100)	3.00
Total	90.66
BED ROLL ANNEX TO EXISTENCE LOAD	
Bag, waterproof	.75
Carrier, sleeping bag	.40
Air mattress	3.50
Shelter half w/poles, pins, ropes	4.45
Sleeping bag w/case	7.50
Total	16.60
WEIGHT TOTALS	
Uniform	13.28
Fighting load	32.68
Existence load	90.66
Bed roll	16.60
Total	153.22

Table 1. Typical RSOP Load.

ITEM	WEIGHT (Pounds)
UNIFORM	
Belt, trouser	.20
Boot, combat	3.36
Drawers, cotton	.30
Socks	.30
Uniform, camouflage	2.00
Undershirt, OD	.65
Gloves, shells w/liners	.63
Liner, field jacket	.73
Sweater	.73
Total	8.90
FIGHTING LOAD	
Pistol belt, suspenders, First Aid pouch	1.59
Canteen, 1-qt water w/cup	3.00
Canteen, 1-qt water	1.80
Ammunition pouch (2) w/180 rounds	6.21
Weapon w/30-round magazine	7.91
Helmet w/cover	3.44
Grenade, hand (2)	2.00
Mask, chemical	2.97
Total	28.92
EXISTENCE LOAD	
Ration, MRE (2)	2.56
ALICE w/frame	5.96
Wet-weather suit	1.70
Sleeping shirt	.65
Toilet articles	2.64
Cleaning kit, weapons	.42
CPOG, complete	5.75
Socks (2 pairs)	.60
Entrenching tool w/carrier	2.52
LAW	5.20
Cap, field	.26
Total	28.26
WEIGHT TOTALS	
Uniform	8.90
Fighting load	28.92
Existence load	28.26
Total	66.08

Table 2. Recommended Minimum Essential Load.

•Resupply will be available to the troops on the ground.

•The Soviets will remain willing to use nuclear and chemical weapons to ensure success.

The omission of any one of these conditions would drastically change the list of minimum essential equipment.

The uniform items on the list will provide protection from the climate while a unit is on the move. The fighting load contains water, limited NBC protection, and enough ammunition to protect against dismounted infantry attacks or to strike offensively with well-aimed fires.

FORUM & FEATURES

The existence load contains an adequate amount of food, protection for continued adverse weather, limited hygiene protection, extended NBC protection, and a means of countering armored forces (LAW) and of providing cover from small arms fire (entrenching tool).

The supplementary load provides the items needed in special situations — a sleeping bag for extended periods in one location, for example, and a bayonet for civil disturbance actions. This load can be delivered by air or motor transport when the time, the assets, and the situation call for it.

In short, we must learn to analyze loads

according to actual need on the basis of METT-T, not according to possible need. In addition, equipment should be designed and worn to distribute weight to as many muscle groups as possible and to avoid sensitive areas of the body.

Our commanders at all levels must acknowledge the fact that no matter how much training they do, they cannot change the nature of a man's physical capabilities. They must establish a doctrine on load control, preferably at Department of the Army level, and an absolute weight limit for men in combat. Then leaders at all levels must enforce the load control system through effective

leadership, including a rigid inspection system.

Finally, infantry units must train with realistic loads at all times. Only after these steps are taken can the "light" be put back into infantry.



Captain Stephen P. Perkins served as rifle, mortar, and support platoon leader and company executive officer with the 3d Battalion, 325th Infantry. He is now a company commander in the 1st Battalion, 14th Infantry, 25th Infantry Division. He is a 1980 graduate of Cameron University.

Alpini: Men in Mountain

JACK BARHAM

Unless you've been stationed in Southern Europe, you may not be aware that our NATO ally Italy maintains the largest force of mountain troops in the free world. And unless you've had a chance to watch a company of Alpini moving across a mountain snowfield bearing all their weapons and equipment, on all-purpose military skis, and at a pace that leaves the average sport skier with specialized equipment floundering in their wake, you may not know that they are also the *best* mountain troops in the world.

Unless you are pretty familiar with mountain warfare tactics, you probably don't know that Italy is the last of the world's industrialized nations to maintain mule stables in their modern army. Despite many innovations in mountaineering machinery, nobody has found a substitute for getting heavy and medium mortars into places the Alpini like to shoot mortars from, which is to say the peaks of alpine mountains accessible only to mules, mountain goats, and Alpini soldiers. (They also use helicopters and an ingenious tracked, mechanized sled called an "Alpini scooter," but nothing

can move through a cloud over a treacherous mountain trail so well as an Alpini mule.)

Italy borders France, Switzerland, Austria, and Yugoslavia. Any force invading Italy by land would have to pass over mountains. Internally, the land mass of Italy ranges from mountainous to hilly, with very little really flat terrain. So it makes sense for the Italians to maintain a fairly large body of mountain troops, and to make sure that these troops are very good at what they do.

Thus the Italian Army 4th Corps (Alpini), which presently consists of five brigades, is simply a necessary military force, fitted and trained for its mission. It is, in fact, a well fitted and superbly trained military organization.

Each brigade is composed of three or four battalions of mountain infantry, a battalion of mountain artillery, with varying numbers of mountain engineers, signallers, and logisticians.

There is even a battalion of Alpini paratroopers who go looking for drop zones that sane jumpers have nightmares about.

The most impressive demonstration of

mountain warfare skills ever observed by the writer occurred at a couple of renditions of CaSTA. That's the Italian acronym for *Campionati sciistici della Truppe Alpini* or Alpini Ski Championships. Each year the brigades send their best military skiers to a designated location in the Italian Alps to compete in the kind of skiing Alpini do — that is, tactical, cross-country, all-terrain, full load-bearing. Most of the events are squad and platoon level races of varying distance over terrain that would tear a snowmobile apart.

Tactical units (squads and platoons must be honest — no ringers) race against time and each other and fire their weapons against still and moving targets along the way. In some events the unit cannot continue the race until all of its targets have been hit. In others a distance penalty is assessed for every miss. To win a CaSTA event is, in peacetime, the greatest possible achievement for an Alpini squad or platoon leader.

Being able to do that kind of skiing with one's company builds a good measure of esprit de corps, but the Alpini professionals build on these activities to

instill in each of their soldiers a tremendous unit loyalty that endures long after his active duty days are past.

They start with a young conscript who has about the same attitude toward military service that young Americans did back in the days when they, too, were being drafted. But the Italian draftee has expected it from the day he became aware that he was a healthy male and that Italy maintained armed forces. He knows he's going to spend a year on active duty. (Or eighteen months if he wants to specialize as a medic, an engineer, or a radio operator, or to accept basic NCO rank.) And he knows that every other young Italian man will spend the same amount of time on active duty. While deferments are easy to acquire, sooner or later everybody serves. Exceptions are almost non-existent.

(The Italian Government does a lot for its armed services in this respect. All able-bodied men serve, but each can choose his time. If he wants to complete college, fine. Get married, sure. Have six kids, his choice. But sooner or later he's going to do his year to 18 months in the armed forces. So the Italian conscript reports to his first duty assignment without the sense of injustice that often plagued the U.S. selective service system.)

He is an Alpino by choice. If he wants to be a tanker or a leg infantryman or a regular paratrooper instead or join the Italian Navy or Air Force, he has those options. If he's a mountain boy though, he almost always picks the Alpini, for that means he'll be stationed close to home. It means he'll spend a lot of time on skis, something he probably already knows something about and likes to do. When his tour of active duty is over, he will take his distinctive Alpini hat and return to his home town, an acknowledged veteran of tough training, and join his father and grandfather in the local chapter of the highly respected Alpini Veterans' Association.

The Alpino private spends his first six or eight weeks of active duty at Aosta, the Alpini equivalent of Fort Benning, where he learns to fire his rifle (NATO 7.62mm FAL), move in the mountains, and accept the stern discipline of the Alpini Corps.



Alpini in overwhites, moving out for a cross-country march.

The training is tough. And "realistic" is an understatement. When a 19-year old finds himself hanging from a nylon rope 400 feet above the rocks, and when what's holding that rope is a fellow trainee, mutual respect develops quickly. When his fellow trainee doesn't drop him because their sergeant has shown them how to safely conduct a belay, that respect extends to the NCOs. And when the trainee sees the respect the NCOs give to the officers, he starts to learn something about military discipline. Soon he begins to feel pretty good about being a member of his squad, platoon, and company, even if he doesn't especially like hanging 400 feet over the rocks.

After his basic training, the new Alpino joins his unit. With rare exception he will spend his entire active duty period with the same squad. And although he will serve only a year, almost every day of that year will be filled with intensive unit training. Each soldier gets 10 days of leave during his first year of active duty. The remainder of the time he trains six days a week. His training incorporates everything an Alpino needs to know, from digging snow caves to learning the unit songs. (If he plays an instrument especially well, or has an extraordinary singing voice, he may be accepted into the brigade band or chorus, an option many conscripts prefer to digging snow caves or hanging over rocks. Regardless, every Alpino can sing his unit songs.)

The officers are almost all career men, graduates of the Italian Military Academy and the Alpini Officers' Course at Aosta, where new lieutenants spend six months cruising deep powder and hand-carrying 81mm mortars up mountain peaks. (It teaches the lieutenants to appreciate the mules.) Their mission is to train their men so well that a youth who spends his year on active duty can be recalled years later, should the nation mobilize for war, with most of his mountain skills intact. The training is almost exclusively mountain oriented, and it truly builds men who know what to do in the mountains.

Their equipment is first class. The FAL rifle (usually issued with folding stock) is a little heavy for carrying up a rope, but the Italians like its range and accuracy. Their skis, climbing gear, and other items necessary to mountain survival are the best that can be produced in Italy or purchased elsewhere. Even the uniforms of the private soldiers are of high quality material, well designed and carefully tailored for each man.

The dominant item of the uniform is the hat, alpine style, with a distinctive black feather (white for field grade officers and above). It is the most respected headgear in the Italian armed forces. Each soldier takes the hat with him when he leaves active duty, wears it to meetings of the Alpini Veterans' Association, and honors it for the rest of his life.

The Alpini's proudest days were in

World War I, when they beat the mighty Austro-Hungarian Army, took the Upper Adige (now much of northern Italy), and, at terrible cost, reclaimed Trieste. They make no excuses for backing a loser in World War II, but stress the valor of the Alpini units, which the Germans used to cover their retreats in the mountains of Greece, Russia, and Italy. And they are quick to mention that the Alpini were the first members of the Italian Army to form a volunteer battalion and fight the Ger-

mans alongside U.S. forces in Italy.

Alpini units are deployed throughout northern Italy, with most of the combat units distributed in the northeast. Their active duty strength is under 10,000, but in every city, town, and village in northern Italy are mountain men who have Alpini hats on their mantles and the skills of mountain soldiers in their bodies. They have standing assignments, usually to their old units, and if the need should ever arise, they will be ready, willing, and

very able to swell the Alpini force to a formidable size on short notice.

Skilled, professional, determined, these "men in high places" are indeed a force to be reckoned with.

Jack Barham, a retired Army lieutenant colonel, was Editor of *INFANTRY* magazine from 1974 to 1979. He then went on to serve as Public Affairs Officer of the Southeast European Task Force in Italy and remained in Italy after his retirement. He served in Vietnam with the 25th Infantry Division.

The Fine Art of Delegation

LIEUTENANT COLONEL DENNIS J. GILLEM

Every leader knows how to delegate tasks to subordinates. Well, most of them do, anyway. But there's delegation — and then there's delegation. As an old Engineer sergeant once told me, "I can teach you to drive a bulldozer in about 30 minutes, but it may be a long time before you'll be any good at using it."

The one thing everyone knows about delegation is that you always delegate enough authority to get the job done. Very true, but there is much more to good delegation than providing authority.

When you find yourself in a position where you may want to delegate, there are some key points that you should consider:

- Determine whether the task is "delegatable." Certain things you may be required to do yourself.

- If it is delegatable, determine whether you *should* delegate it. It may be something you need to do or simply want to do personally. Then, again, you may need to delegate because you are overloaded and want to "share the wealth." You may *have* to delegate the task because it is clearly the responsibility of one of your subordinates. You may *want* to delegate simply to show trust in a subordinate. Or you may *need* to delegate all or a portion of a task because

you don't have the information you need to complete it.

- If you decide to delegate it, pick the right person. You do not have a supply clerk assemble the company; neither do you tell a platoon sergeant to type a letter. You must also consider the workload and the abilities of your various subordinates.

- Then make sure the one you have picked to do the task knows exactly what you want him to do. "Take care of this," may produce some interesting results — results that will not fit your need; undoubtedly, you will then provide the required guidance to your subordinate and then "allow" him to do it over again. (There was at least one case in Vietnam where a soldier was told to "take care of" some prisoners. The result was murder; don't let this happen to you.) Also tell him in what format you want your answer. Will a simple, verbal "Up" do it, or do you want a draft message, an operations order, a staff study, or a chart? If you do not tell him, he will not know. It's fine to leave it up to him, but tell him that's what you're doing.

- Set a suspense date. He must know when he has to have it in your hand. (A suspense date is not the date it goes in the mail — it's the day you get it. A

suspense date is the "no-later-than" date; it is okay for it to arrive early.) If you can afford the time, let him set his own suspense date; in any event, be willing to negotiate as he works this new task into his present work schedule. Even if you don't care when it gets done, set a suspense date anyway so you can be sure it does get done.

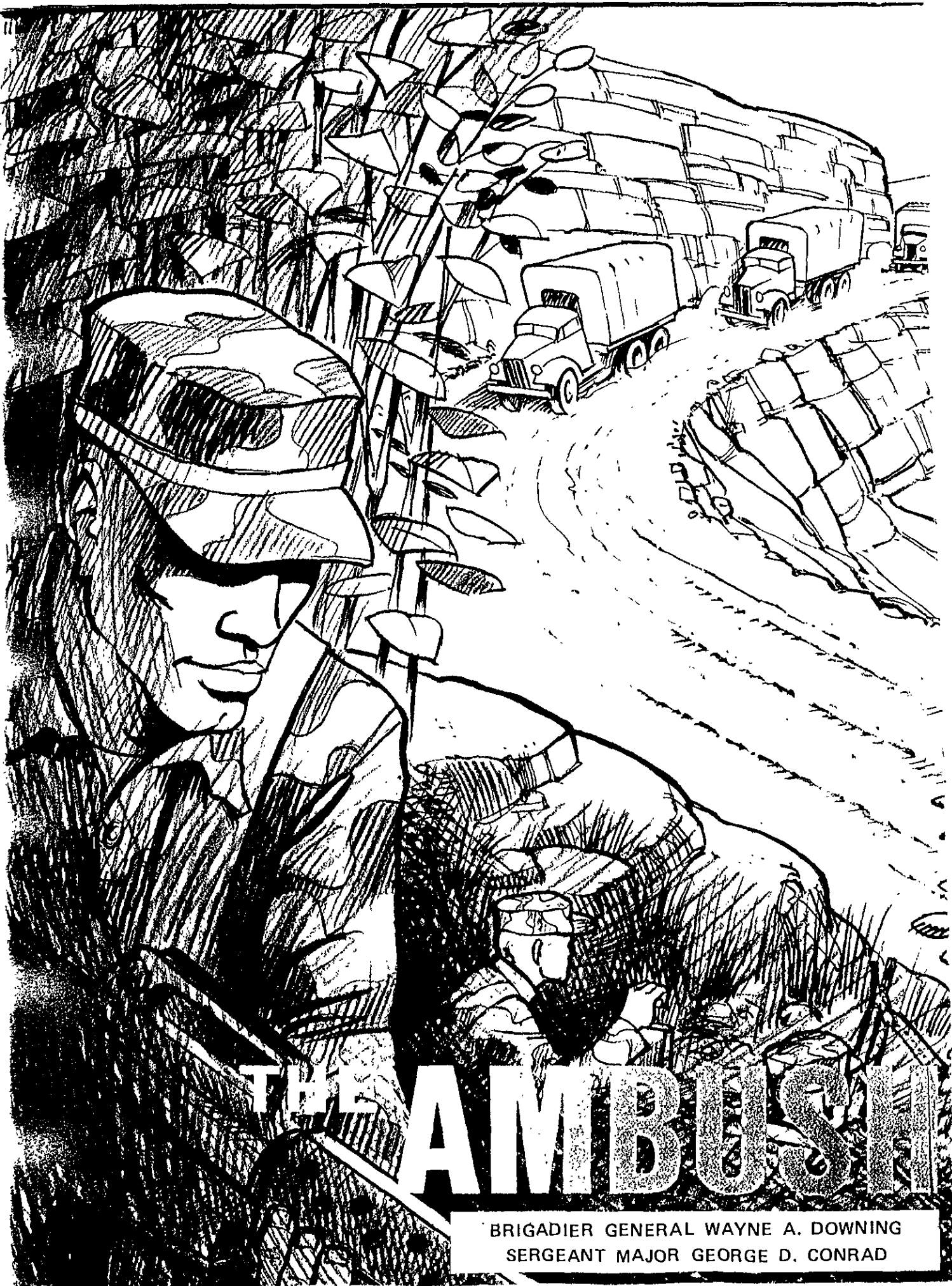
- Finally, record the action in your suspense system (calendar or suspense file) so that you can clear the item from your conscious memory and concentrate on other things. Your suspense system will remind you at the appropriate time what is due and from whom.

So, do delegate, when it is appropriate. Give it to the right person, and give him the appropriate authority. Know exactly what you want and communicate it clearly. Set and record the suspense date. Then continue on.

Delegation is a very useful and fine art.



Lieutenant Colonel Dennis J. Gillem is Senior Army Advisor to a brigade of the 38th Infantry Division, Michigan Army National Guard. He served in Vietnam as a rifle platoon leader and company commander with the 101st Airborne Division.



THE AMBUSH

BRIGADIER GENERAL WAYNE A. DOWNING
SERGEANT MAJOR GEORGE D. CONRAD

AUTHOR'S NOTE: The training techniques discussed in this article were developed over the past 11 years by the U.S. Army's Ranger battalions. These tactics and methods have been used all over the world, from the jungles of Panama and Honduras to the frozen ground of the Tanana River valley in Alaska

to the deserts of Egypt, Somalia, and Oman. The authors acknowledge the imagination, hard work, and professionalism of a generation of Army Rangers who developed these proven training approaches.

Light infantry forces are not just lightly equipped infantry; they are infantry units that fight differently to take advantage of their unique capabilities. Their tactics emphasize techniques such as infiltration, stalking, and surprise, and they use their all-weather and all-terrain capability to the fullest.

Light infantry units can appear at the unexpected time and place on the battlefield and attack from the unexpected direction. They can operate in the enemy's rear areas and against his bases and lines of communication.

One of the basic light infantry operations to be performed in the enemy's safe havens is the ambush. This means that, if you are in a light infantry unit, sooner or later, you may have to either plan or conduct one. Like many other infantrymen — officers and noncommissioned officers — you may have learned the basics of the ambush in Ranger School. And although these basics are an excellent starting point, to dominate on the next battlefield, you and your unit must become proficient at some more advanced techniques.

What is an ambush? As most INFANTRY readers probably know, it is a surprise attack against a moving or temporarily halted enemy force for the purpose of destroying or capturing it and its equipment. An ambush is a very effective and economical means of attacking an enemy, because it allows a smaller force to engage and defeat larger, more heavily equipped formations. The enemy's morale and effectiveness suffer heavily from the effects of an ambush and at little cost to the force executing it.

TYPES OF AMBUSHES

There are two general types of ambushes — area and point.

Area ambushes are generally established by platoons, companies, or even battalions. They are used to interdict enemy movement in a given area or to inflict heavy casualties on his forces. Area ambushes are composed of a series of point ambushes, the size and location of which are dictated by a METT-T analysis (mission, enemy, terrain, troops available, and time).

A point ambush is set at the best location from which to inflict damage on the enemy. Even though a point ambush is set at a given location on the basis of an assumed direction of enemy approach, it must be able to accept the enemy force from more than one direction. There may be times when a unit can execute an ambush in only two or three principal directions, but the fourth sector must still be covered by security forces to give early warning and prevent an attack from an unexpected direction.

The basic ambush formation is linear, like the one in Figure 1. This ambush can accept contact from three basic directions — left, right, and front. The rear is covered by a security team,

the size of which depends, again, on the METT-T analysis.

The principal variation on the linear ambush is the L-shaped ambush (Figure 2). The L ambush is formed with the base of the L perpendicular to the expected enemy direction of advance. This is a good ambush for a road, a jungle trail, or any other area in which an enemy force is canalized and you can be sure of its approach route. The L ambush can handle an enemy approaching from the expected direction (toward the base of the L) from the front (the stem of the L) and, although less effective, can also be used against an enemy formation that comes from the opposite direction. In this case, the ambush must be executed when the enemy main body has cleared the base of the L, and the flank security must protect the rear of the L's base. All weapons must be carefully sited to avoid direct or ricochet fire into the ambushing forces.

All the other ambushes you hear about — the Z, the X, the V — are variations on the basic linear and L formations (Figure 3). (WARNING: These more advanced ambush formations are extremely tricky and intricate. You must be an expert in the basics before you can employ them.)

One other type of point ambush is worthy of mention — the mechanical ambush. This ambush consists of claymore mines set in series with a double ring main; it is command detonated or is detonated by a triggering device activated by

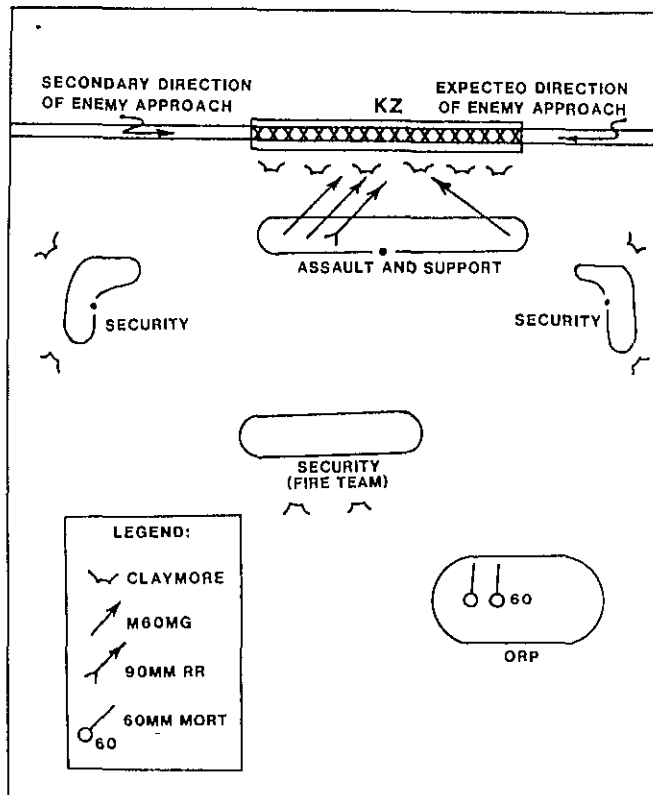


Figure 1. Platoon Linear Ambush.

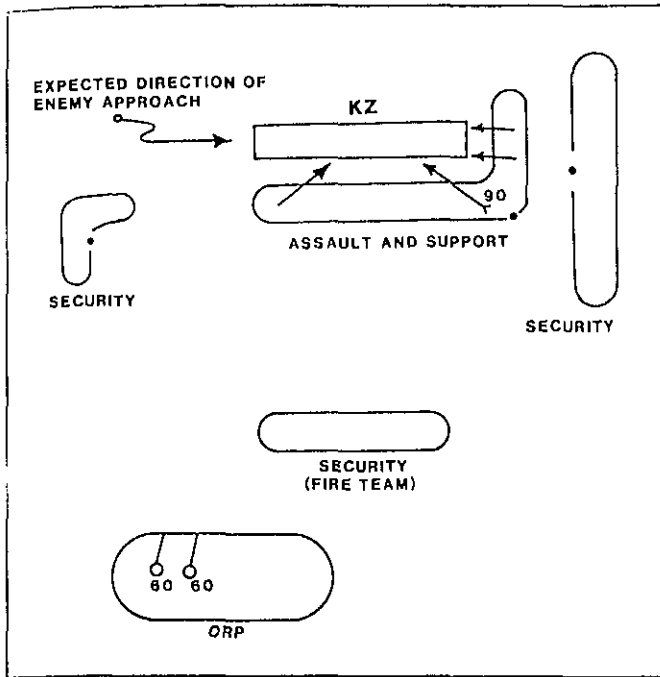


Figure 2. Platoon L-shaped Ambush.

the enemy (Figure 4). As a rule, a mechanical ambush should be manned. All the soldiers in it must be prepared to engage the enemy with organic weapons if the mines do not detonate or if they are not entirely effective. (See also INFANTRY, May-June 1970, pages 53-54.)

Mechanical ambushes are an especially good way of interdicting a large area with a small light infantry force. If a mechanical ambush is effective and the troops do not reveal their presence, the enemy will have no idea what hit him — it could be fire from artillery, mortars, or even aircraft. This uncertainty will have a devastating effect on his morale and effectiveness.

METT-T

If your unit is tasked with setting up an ambush, you must first evaluate it in accordance with METT-T:

Mission. From the outset, understand exactly what the ambush is supposed to do. If your commander issues you a Commander's Intent (and he should), study it carefully to determine what is required. Then fit this into your own Commander's Intent when you issue your order. Be able to state the mission explicitly; for example, it may be to interdict enemy resupply efforts, ambush enemy armor columns, or capture enemy personnel or specified pieces of equipment. Each of these missions is distinctly different and each will have to be planned, organized, equipped, rehearsed, and executed differently.

Enemy. What type of unit is to be attacked? Is it guerrillas, main force troops, supply parties, armor units, or other conventional forces? Consider such things as the size of the enemy force, the enemy's habits when attacked, supporting units, his night vision capability, and his expected time of movement. Also consider what bait he is likely to react to — raid a small site and ambush the relief force, for example.

Terrain. Is it wooded, mountain, jungle, or urban? (Yes,

you can set some formidable ambushes in a city or suburb.) What routes are both available to the enemy and appropriate to his activity?

Troops available. How big is your force? In low-intensity conflicts, squads and platoons are our basic ambush forces. In mid- to high-intensity conflicts, company-sized ambushes may be the norm. An ambushing force should be able to successfully engage a force two or three times its size — but this depends on the enemy and the terrain. For example, a platoon ambushing an enemy tank company in daylight in open terrain is taking a big risk, but a light infantry platoon engaging that same column at night or in a forest may well have a decided advantage.

Organize your ambush forces according to your TOE — by platoons, squads, and fire teams. Do *not* chop up these units to create assault elements, security elements, and support elements. Instead, give your TOE formations these missions with some augmentation. Give a squad the assault mission, for example, and augment it with a fire team; or give a squad the support mission, and augment it with a 90mm recoilless rifle section, an M60 machinegun team, and a 60mm mortar section.

Time. How long will it take to emplace the ambush? A complex, lethal ambush with plenty of "dirty tricks" will take hours to set up, a hasty ambush on a trail, 15 to 30 minutes. How long is the ambush to be in place? What hours of the day? Or will it be at night only? How soon must it be set up? Remember, it's not a good idea to set up an ambush in darkness — even if it is to be executed in darkness. It's an even worse idea to set one up in darkness to be executed in daylight. Try to allow every soldier to "see" and lay in his weapon in daylight. Time is important.

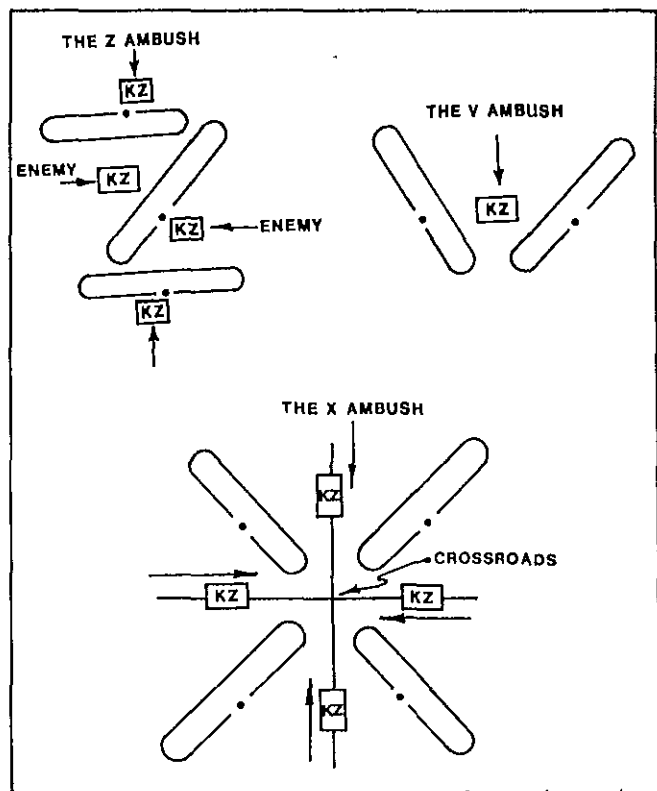


Figure 3. Ambush Variations.

Once you have completed your METT-T analysis and decided on the type of ambush you want to use, you have to look at ways to make it as effective as possible.

First, plan well for security. Since any ambush is a surprise attack on the enemy, security measures are always a fundamental consideration.

As a general rule, don't walk on a road or trail that you intend to ambush, and don't walk in the kill zone. Against a professional, alert enemy, such actions will give your ambush away, and you will be the one to be attacked.

The position's camouflage must be perfect. One leaf turned the wrong way can give away an otherwise perfect set-up. Remember, 360-degree camouflage is necessary in case the enemy approaches from that unexpected direction.

Discipline in the ambush site must be ironclad. Do not allow sleeping, talking, eating, or smoking. If an ambush is to be established for long periods, the elements of the ambush must be pulled back periodically to the objective rally point (ORP) or rally point (RP) for rest. Extended ambushes of 24, 36, or 48 hours require six- or eight-hour shifts around the clock. In these cases, it may take a company to man an extended platoon ambush position.

Don't expect tired troops to man an effective ambush. You can't conduct vigorous patrolling operations all day and then expect your soldiers to be totally alert all night. And one snore or a snort as a sleeping man is awakened is enough to warn an enemy.

Planning for security elements is critical. The element that detects an approaching enemy force must be able to warn the leader when the main body appears, and tell him the size of the enemy's security element and the time most of the enemy troops have passed his position. Security elements must also protect the flanks of the ambush so they won't be rolled up by enemy security or follow-on forces. Remember that an ambush force is vulnerable once it has executed the ambush, because its total attention is focused on the kill zone. The im-

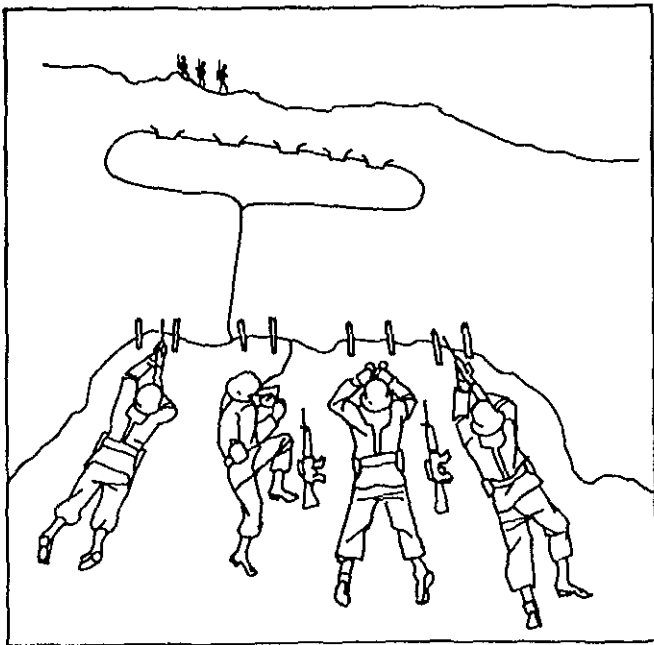


Figure 4. Mechanical Ambush.

portance of the security element in this instance cannot be overstressed.

The leaders in the ambush must have contact with all members of their unit in order to alert them to the enemy approach, but they cannot afford to walk around the ambush site during this critical period. The best method of alerting the soldiers in the ambush is to have strings or vines tied to their legs or arms. A series of tugs on these lines can then be used to alert everyone.

Another security measure is the selection of a good route of withdrawal. Don't forget it as you plan your ambush site. In fact, the best possibility for an ambush position may have to be rejected because it does not allow a good secure way out for the ambushing force. Again, apply METT-T, since the enemy will take immediate evasive action once he is engaged.

EXECUTION

As for execution, the leader at the site must execute the ambush using a device that will cause casualties. For example, a bank of claymores on a double ring main is an excellent device with which to spring an ambush. Another good technique is to use a machinegun or a 90mm recoilless rifle firing antipersonnel rounds. All must be under the leader's direct control. Don't plan to use whistles or pyrotechnics; they give the enemy time to react.

As soon as the enemy unit is hit, the soldiers in the ambush force will have only a second or two in which to kill those enemy soldiers in the kill zone. Then they are going to recover from their initial shock and react — either by directly attacking the ambush or by getting out as fast as they can. So plan your subsequent fires and other banks of claymores accordingly.

The only time the leader of the ambush force does not execute it is when another member of the ambush knows that he has been discovered. Then that soldier has the authority to execute — but he must do so with killing fire, not by yelling.

All weapons in the ambush must be sited with interdicting fires in the kill zone and along likely avenues into and out of the ambush site. The weapons should include M203s and mortars if the terrain permits. Machineguns should always be used with tripods and traverse and elevation mechanisms to lock in fires. All riflemen must use firing stakes with left and right limits and also elevation stakes. (Don't forget the tendency of soldiers in an ambush position to shoot high — especially at night.) M203s should be sited to cover deadspace and routes of escape.

Just as the leader controls the execution, so he must also control the cease-fire, using a whistle or a similar device to get his soldiers' attention. Again, he should not use pyrotechnics. Often they either don't work, are not visible to everyone, or cause confusion.

You must also decide how and when search teams are to be used. (They are not automatic.) Remember, when the soldiers leave the security of their well-chosen, concealed ambush positions, they are subject to the fires of the enemy who may also now be hidden and ready. Be careful. If it is at night,

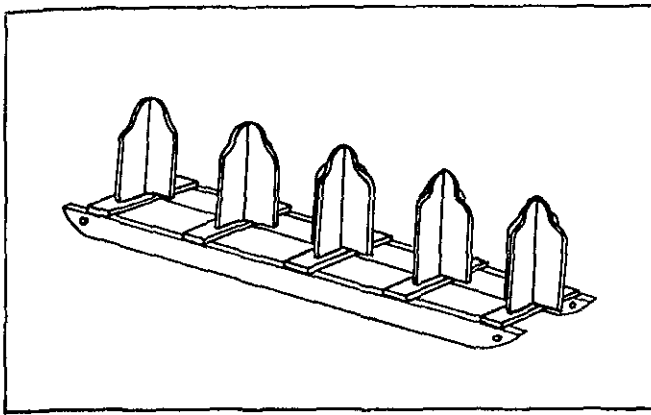


Figure 5. Target Sled.

don't throw trip flares or shoot 60mm or 40mm illumination to light the search areas: Your soldiers will be the ones who are illuminated to a hidden enemy. (And always assume there will be hidden enemy — you will not get them all.) Your soldiers, working as buddy teams, can use narrow-beam white flashlights taped to their M16s to rapidly search an area. If the enemy's return fire is heavy, or if the ambush has missed the enemy's main body of troops, then the leader may appropriately choose to break contact and leave the area.

Breaking contact from an ambush site is tricky business. Security elements must guard the flanks, and it is a good idea to set a series of hasty ambushes covering the withdrawal of the main body from the ambush site and from the ORP. Contingency plans for breaking contact with the enemy must be addressed in the operations order or covered in the unit's SOP.

SMALL POINTS

There are several other small points to remember in planning an ambush:

- Be innovative. Give your imagination and creativity full range as you develop your ambush techniques.

- Put yourself in the position of your enemy. If your ambush is successful and you get him in the kill zone, the results will be physically and psychologically devastating to him. When he is first engaged by your claymores, recoilless rifles, and machineguns, he will be stunned for at least a second; then he will respond — usually by recoiling from your fires and fleeing the area. Plan on this as you set your ambush.

If he runs, it will be along natural lines of drift away from the ambush site — generally downhill. Put banks of claymores down these routes, and put fire teams and squads along these routes to cut him off and engage him. Place well camouflaged punji stakes in areas where he might go to ground to escape your fires. (Note: When you emplace these casualty-producing devices, remember the earlier warning about walking in the kill zone or across the enemy's suspected route of travel. If you must do this to emplace the devices, do it carefully and cover your marks.)

- Leave your rucksacks in the ORP — if you plan to go out that way — or take them with you. But if you take them with you to the ambush site, that's just one more thing to be camouflaged and to hamper movement in the ambush area.

Extensive training in ambush techniques — including live fire training — is absolutely necessary. (Revised editions of FCs 7-14 and 7-15, ARTEP Mission Training Plans, will contain expanded tasks, conditions, and standards for conducting realistic training, to include live fire.)

As in all training in combat techniques, the training must be progressive. Ambush training is characterized by detailed mission analysis and planning, exhaustive rehearsals, dry fire exercises progressing to blank fire then to a MILES-assisted evaluation of progress, and culminating in live fire exercises. Put your unit through this cycle first during the day, then during periods of reduced visibility, and finally in all types of terrain and weather.

It is absolutely essential that you have realistic targets for your soldiers to engage during the live fire portion of their training. Two techniques that have proved effective are the target sled and the suspended silhouette device. (Don't forget to make sure your targets will work before beginning a training event. In fact, in most cases, the ambush training site should be selected on the basis of the suitability of the terrain for the moving target simulators.)

The target sled is a simple device that requires a prime mover of some type — a jeep, Gamma Goat, or CUCV — to pull the targets through the kill zone. The targets can be either E-type personnel targets or threat vehicle silhouettes, or both, attached to a sheet metal sled (Figure 5).

Trees and tree stumps can be used to change direction and to offset and protect the prime move. A 120-foot nylon climbing rope is used to connect the sled to the prime mover. A series of these sleds can be linked to simulate larger forces to be ambushed. Also, local property disposal yards are a source of salvage vehicles for anti-vehicle ambushes.

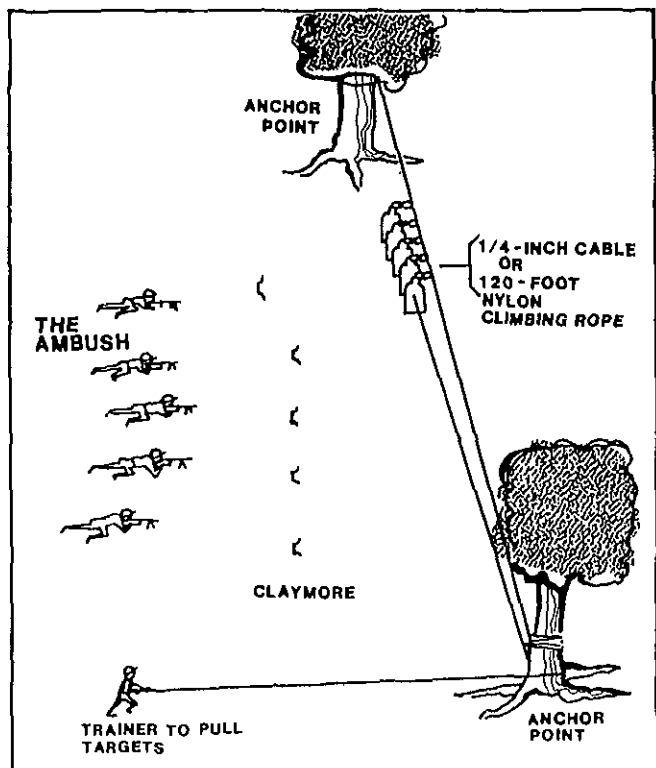


Figure 6. Suspended Silhouettes.

The suspended silhouette training device (see Figure 6) is also simple but quite effective, especially for small ambushes in close terrain. The distance spanned by a taut quarter-inch steel cable is the limiting factor on the width of the kill zone — usually 30 to 50 meters.

A vehicle can be used to cautiously eliminate the slack in the cable during set-up. Manikins, home-made dummies, or E-type silhouettes are attached to the cable by snaplinks. On command, the linked targets are pulled down the cable with a guide rope by a trainer in a concealed, well-protected position outside the kill zone.

It adds a little realism to ambush training if the dummies are dressed in uniforms, and if some with intelligence information are hidden for the search teams to find during their sweep of the kill zone. Foreign language chatter from a tape recorder as the enemy approaches the ambush site adds to the suspense and challenges the nerves of the ambushing force — even in training.

Tactical exercises without troops (TEWTs) are another effective method of training leaders on the basics of selecting sites and emplacing weapons. TEWTs can be conducted while

the troops train on their specialized techniques. The active leadership and participation of battalion and company commanders is essential to teaching these fundamentals.

But reading and talking about ambushes will not make a light infantryman an expert ambusher. The only way to achieve proficiency in planning and executing an ambush is to get out and do it! There will be mistakes in the beginning, but conduct good after-action reviews to learn from both your failures and your successes. Only by learning from experience can leaders and soldiers alike make progress.

While you're conducting your ambush training, concentrate on some of the fine points discussed here, and you will become proficient. We guarantee it.

Brigadier General Wayne A. Downing has served five and one-half years in Army Ranger units, including command of the 2d Battalion, 75th Infantry and of the 75th Infantry Regiment. He is now Deputy Commander of the 1st Special Operations Command at Fort Bragg.

Command Sergeant Major George D. Conrad has served with light infantry units in Vietnam, Panama, and Grenada. He has more than 10 years of service in Ranger battalions as squad leader, platoon sergeant, and company First Sergeant. He is now assigned to the 172d Infantry Brigade in Alaska.

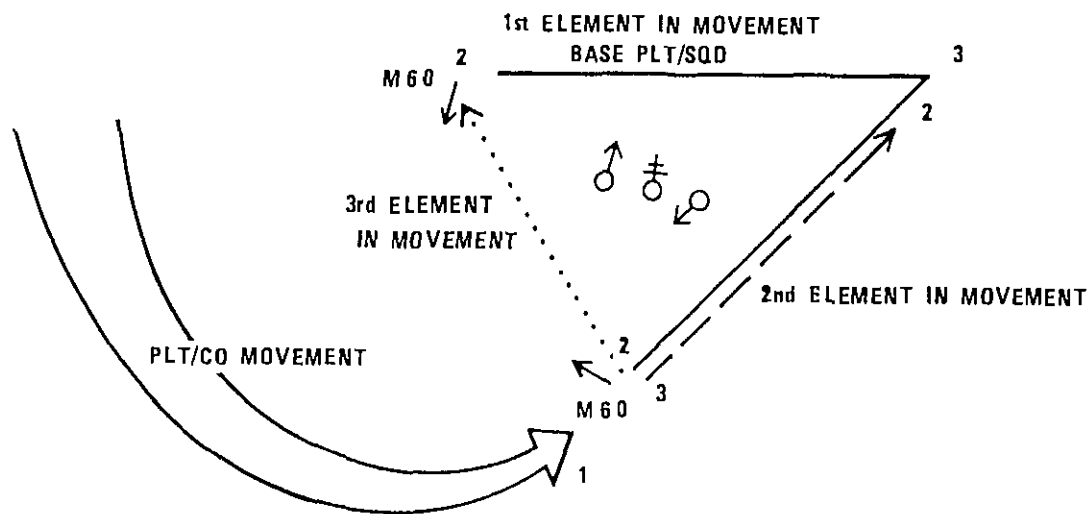
SWAP SHOP



A platoon or company triangle can be used for establishing ORPs or patrol bases, or for temporary halts during movement. It is quick and easy to move into; it provides 360-degree security; it can be used in most terrain; and it cuts down on the movement associated with occupying patrol bases. Chemical lights or the infrared on the AN/PVS-5s can be used to mark the corners of the triangle.

First, the leader halts the patrol short of the tentative patrol base

location. The platoon leader then conducts his reconnaissance, taking several security men with him. Once the security team members are in position, the remaining members of the patrol move forward and pass through the lead security team. Once all the elements have moved into their rough positions, the patrol members seek cover and concealment in the surrounding vegetation. The patrol leader then dispatches soldiers for reconnaissance and security patrols and listening and observation posts.



(Contributed by Captain Timothy L. Canty, Company B, 1st Battalion, 32d Infantry, Fort Ord.)

Infantry In Action

SUSTAINABILITY

CAPTAIN CHRISTOPHER S. BARNTHOUSE

"For want of a nail," begins the old saying we all learned in our youth, reminding us that even the smallest detail can have a devastating effect on the outcome of historical events. Unfortunately, few military men ever ponder its meaning. Military staff colleges throughout the world teach maneuver and tactics, and generals scratch worried brows, trying to increase the "tooth to tail ratio" of the modern fighting force while giving little thought to how the teeth are to sustain themselves.

How little we seem to have learned from history concerning the role logistics plays on the battlefield. From its first recording, history has been filled with heroic tales of brilliant leaders maneuvering brave armies across the globe, altering borders and history; yet, reading between the lines, one is struck by how often the better logistician has won the battle.

The history of the U.S. Army has been filled with stories of logistical privation and the efforts of our military leaders to overcome it. Yet even today, when tactical operations are being planned, logistical support for the soldier in the field is often treated as a necessary evil. Too often, commanders seem to rely on a combination of Divine Providence and an unsupervised staff to keep their forces supplied, giving little personal attention to the matter. A wise commander plans not only his maneuver, but how he will sustain that maneuver throughout the battle and the campaign. It is an *unwise* commander who plans only his maneuver.

Several examples from the past half century will illustrate the wise and the unwise.

GERMANY

On 24 April 1945, Company B, 1st Battalion, 14th Infantry, commanded by Captain Lloyd W. Engelland, was involved in a movement to contact as part of a regimental pursuit south

of Nurnberg, Germany. The company's mission was to cover the right flank of the battalion as it moved from its assembly area in Berlengenfeld to objectives along the Danube River east of Regensburg, 10 miles distant.

The terrain over which it was to travel was hilly and wooded, with only one road usable for supply between its line of departure and the objective. The enemy situation was vague, although intelligence sources indicated that only scattered *sniper resistance would be encountered along the route of advance*, with probably no more than 40 enemy troops in the entire area between Berlengenfeld and Regensburg. The friendly supply situation was uncertain, with the logistical support elements having a great deal of difficulty keeping pace with the rapid advance of the combat elements.

Company B had three rifle platoons and a weapons platoon with light machineguns and 60mm mortars. Tank support was promised, but could not be relied upon — the tank platoon that had been assigned to the battalion for this operation would not be able to advance until fuel and other maintenance items could catch up with it.

Because resupply during the operation would be uncertain at best, the company commander ordered three days' rations and extra ammunition issued to each man. He also loaded his two organic vehicles with as much additional ammunition as he could get, especially 60mm mortar ammunition.

Within 45 minutes after jumping off at 0830, Company B was in a firefight with an estimated platoon-sized unit. Similar encounters by other units in the battalion indicated that the enemy's strength was far greater than estimated.

By noon, Company B had been involved in two more sharp engagements, expending ammunition and taking casualties. The company soon found itself outside the village of Ponholtz faced by an estimated 25 to 30 enemy engineer troops equipped with an 88mm antitank gun. Confronted with this amount of determined resistance, Captain Engelland requested more sup-

port and was promised some tanks that were on their way up from Berlengenfeld (see map).

At 1230, three tanks arrived at Pohnholtz and were ordered to advance. The first one to advance beyond the village was immediately engaged by the 88mm gun and had a tread blown off. The other two tanks then reported that they could not advance in support of the lead tank because one had magneto trouble and the other was nearly out of fuel. Both, in fact, were nearly out of fuel. Even though the logistical support the tank platoon had been waiting for had never arrived, it had been committed to battle anyway. Captain Engelland had no choice but to leave the tanks behind and press the attack without them.

Throughout the rest of 24 April and for the next two days, Company B continued its advance against scattered enemy resistance. During their advance, the soldiers fought four engagements, captured five villages, and forced a crossing of the Danube before going into a defensive position during the night of 26 April. They had been opposed in their advance by an estimated 100 Germans, of which they killed 14 and captured 50. Although the engagements were sharp and Company B relied upon direct fire suppression and the indirect fires of the company mortars to overwhelm the enemy defenders, at no time during the operation was the company resupplied.

Discussion

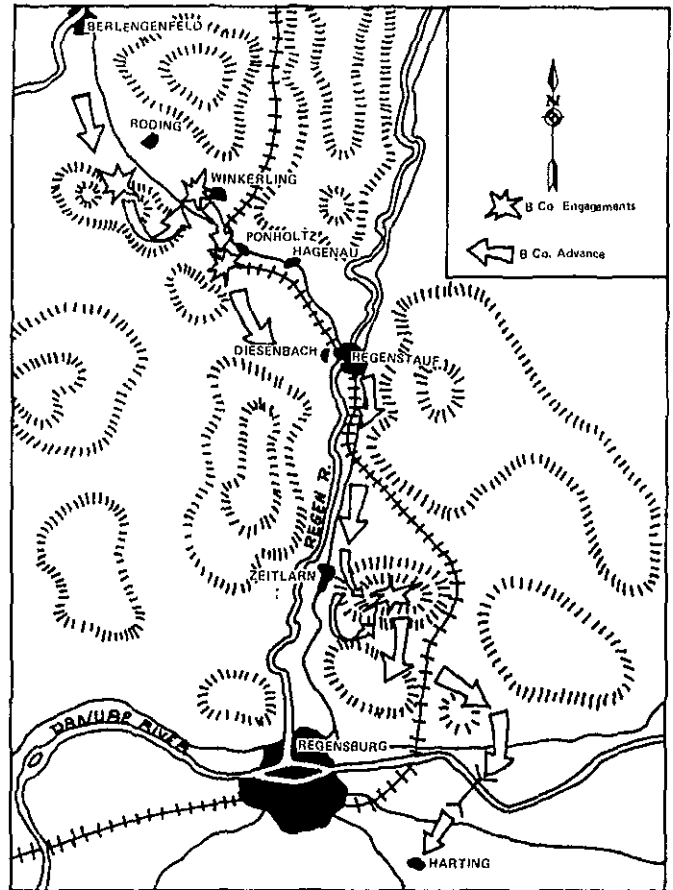
Even though Company B was told that enemy resistance between Berlengenfeld and Regensburg would be spotty, Captain Engelland made sure his company was prepared for the worst. Because the company had stockpiled enough food and ammunition to fight for three days without resupply, when it faced enemy forces delaying in much greater strength and with much greater tenacity than anticipated, Company B was able to press the attack without let-up. Because it had additional rations and ammunition, when the supply situation turned out to be as bad as had been feared, the company was able to operate with the supplies it was already carrying.

In sharp contrast to the infantrymen of Company B was the tank platoon that was sent forward to help them reduce the strongly held German position. Although the tank platoon had been instructed to remain in the rear until resupplied, once the battalion found itself in heavy contact, the tanks were committed without regard to their condition. The end result was that one tank was severely damaged and the other two withdrawn without affecting the enemy.

NORMANDY

In the late afternoon of 5 June 1944, Private Donald R. Burgett of the 101st Airborne Division was getting ready for the airborne role in the invasion of Normandy. He later reported that the equipment he carried on the jump consisted of the following:

One suit of O.D.s worn under my jumpsuit — this was an order for everyone — helmet, boots, gloves, main chute,



reserve chute, Mae West, rifle, .45 caliber automatic pistol, trench knife, jump knife, hunting knife, machete, one cartridge belt, two bandoliers, two cans of machinegun ammunition totaling 676 rounds of .30 caliber ammo, 66 rounds of .45 caliber ammo, one Hawkins mine capable of blowing the track off a tank, four blocks of TNT, one entrenching tool with two blasting caps taped on the outside of the steel part, three first-aid kits, two morphine needles, one gas mask, a canteen of water, three days' supply of K rations, two days' supply of D rations (hard tropical chocolate bars), six fragmentation grenades, one Gammon grenade, one orange smoke and one red smoke grenade, one orange panel, one blanket, one raincoat, one change of socks and underwear, two cartons of cigarettes, and a few other odds and ends.

Private Burgett said his load was so heavy that when he tried to stand up, "I found it impossible to even get to my knees...two men lifted me bodily, and with much boosting and grunting shoved me up into the plane where I pulled myself along the floor and, with the aid of the crew chief, got into a bucket seat."

A few hours after Burgett and his fellow paratroopers jumped into the inky blackness of the early morning sky, Company E, 16th Infantry Regiment, assaulted Omaha Beach. In the assault, each man carried a load similar to that described by Burgett, including three days' rations and four cartons of cigarettes. As soon as the men of Company E left their landing craft, they waded ashore, where they paused at the water's edge to get organized and orient themselves for the assault across the beach.

Enemy fire raked the area, and the company's leaders,

realizing that they were in a death trap, ordered their men forward. When the soldiers tried to move, however, they found that sheer exhaustion, rather than enemy fire, prevented anything other than a slow advance. Several noncommissioned officers reported later that after they had advanced only a few steps they had been forced to stop because their legs would no longer support them. It took the company an hour to cross 250 yards of beach.

Not far from where Company E landed, Company M of the 116th Infantry Regiment went ashore. These men were similarly weighted down but managed to make the beach crossing in about 10 minutes. Private First Class Hugo de Santis said of the experience, "We all knew we were carrying too much weight. It was pinning us down when the situation called for us to bound forward. The equipment had some of us whipped before we started. We would have either dropped it at the edge of the beach or remained there with it, if we had not been vigorously led."

Sergeant Bruce Heisley concurred, "I was carrying part of a machinegun. Normally, I could run with it. I wanted to do so now but I found I couldn't even walk with it. I could barely lift it. So I crawled across the sand dragging it with me. I felt ashamed of my own weakness. But on looking around, I saw the others crawling and dragging the weights which they normally carried."

Staff Sergeant Thomas B. Turner said, "We were all surprised to find that we had suddenly gone weak, and we were surprised to discover how much fire men can move through without getting hit. Under fire we learned what we had never been told, that fear and fatigue are about the same in their effect on an advance."

Discussion

All the units that participated in the invasion of Normandy in June 1944 experienced severe problems because the individual soldiers were overloaded. The paratroopers could not stand up and when actually aboard the aircraft, knelt on the floor so they could rest their heavy loads on their seats. Many reports following the landing indicated that the airborne units were able to regain their maneuverability once they got on the ground, but only because most of the soldiers had abandoned their heavy equipment.

The regular infantry soldiers who went across the beaches were similarly burdened in spite of the fact that the Normandy invasion included the greatest logistical effort in the history of mankind. Although resupply of the airborne elements would be problematic, the resupply of the infantry units was, in fact, offshore waiting to be unloaded even as the first wave of troops was hitting the beach. These supplies were in stockpiles on the beach by nightfall.

In addition to the stress of carrying the excessive loads through heavy surf and onto the beach, fear itself caused the soldiers to become weak, further reducing their ability to carry the weight of their equipment.

Thus it is apparent that when a decision is made to carry additional equipment into combat, leaders must understand the

unique leadership problems that will be generated when the men carrying that equipment come under fire and subsequently suffer from the reduced stamina that fear induces.

Most notable is a comparison between the performances of Company E, 16th Infantry, which took one hour to cross 250 yards of beach and incurred 105 casualties during the day, only one of which occurred after the company got off the beach, and Company M, 116th Infantry, which managed to push across the beach in 10 minutes to achieve the greatest advance of any unit that landed at Omaha Beach on D-Day.

BREST

From 9 September through 14 September 1944, Company F, 2d Battalion, 23d Infantry Regiment, commanded by Captain George H. Duckworth, fought its way through St. Marc, a suburb of Brest, France, and then through the center of the French port city against heavy opposition. The company had never been involved in fighting in a major built-up area and was largely unprepared, tactically or technically, for that type of combat.

By late afternoon on 9 September, in St. Marc, the company had advanced 1,200 yards; it had been meeting platoon-strength pockets of resistance throughout the day, had taken casualties, and had expended large quantities of ammunition. At 1700, Captain Duckworth called a halt and put his company into a hasty defensive position in a three-block area of the village.

He then ordered his supply sergeant to bring up a jeep that was kept immediately behind the company. It had in its trailer additional ammunition and wire communication equipment, some of it captured German gear. (Captain Duckworth said of this system, "This was not TOE, but it was necessary for the maintenance of good communication within the company.") The ammunition was immediately distributed and the wire communication laid.

While the ammunition was being distributed, the company mess sergeant brought forward a hot meal. It was Captain Duckworth's policy, wherever possible, to serve a hot meal soon after the company had stopped for the night. The food was brought to a central point within the company and was taken forward by porters provided by the platoons.

As soon as the ammunition had been distributed, the supply sergeant and the company executive officer went back to the regimental trains to get more. By company SOP, a jeep trailer full of ammunition was to be in reserve at all times.

During the next four days, in Brest proper, the company found that its radios did not work in the buildings and that it had to use field wire for its communications. This took large quantities of wire, all of which had to be brought up over terrain and in an environment not conducive to resupply. The company also discovered that fighting in a city led to greater than usual expenditures of ammunition and to a high casualty rate.

To add to its problems, the company discovered that its normal method of resupply, that of bringing materials forward in a quarter-ton trailer, could not be used. According to Cap-

tain Duckworth, "It was sudden death to step into the streets, as we soon learned...the only way the streets could be crossed was by throwing a smoke grenade and dashing quickly from one covered position to another." This was hardly the sort of environment in which a jeep could be expected to survive for very long.

After two days of heavy fighting with notable lack of success, Company F developed the tactic of breaching holes in buildings with demolition charges and using those breaches as supply routes. The sustainment of the company remained a risky matter for service support personnel. On the afternoon of 12 September, for example, "an aidman...was killed by an enemy bullet which pierced the red cross on his helmet."

To prevent additional casualties among service support personnel, the unit decided to resupply itself, as much as possible, during hours of limited visibility. A plan was then made and implemented whereby ammunition and food would be brought up along the routes blasted through the buildings and stockpiled at the forward positions in such quantities that the attack could be continued throughout the next day without additional resupply.

According to Captain Duckworth, this was no small accomplishment. "In the darkness," he later reported, "it was difficult to get food and ammunition to the two forward platoons, as many doorways, passages, and holes had to be traversed before reaching their positions. Parties from the company headquarters and the support platoon worked far into the night carrying the necessary supplies." Because the support platoon and parties from the company headquarters brought the ammunition forward, no porters had to be taken from the infantry platoons. This allowed the infantrymen to sleep during the night and to wake up in the morning rested, resupplied, and ready to carry the fight to the enemy.

Discussion

Although the type of combat the company encountered in Brest was new to its soldiers, Captain Duckworth and his subordinates were able to modify their previous SOPs to meet the new requirements. By trial and error, they learned that the best way to advance in a city was by using demolitions to breach holes in walls, thereby avoiding the murderous fire in the streets. In this process, however, the company's leaders did not lose sight of the fact that somehow the company would have to sustain itself.

Thus, they produced and implemented a plan by which they projected the amount of ammunition the platoons would expend during each 24-hour period and moved that amount forward during each night. They used the routes cleared and held open by the infantry, and used service support and headquarters personnel to get the supplies forward. In this way, they were able to get needed supplies up in a timely manner while reducing the exposure time of the support personnel to enemy fires and allowing the infantrymen to get as much rest as possible. The key to the company's sustainment during this operation was the ability of the commander and his subordinates to meet new supply problems and to produce a plan for overcoming them.



GRENADA

On the morning of 25 October 1983, Company A, 2d Battalion, 325th Infantry, conducted a combat air assault at the Point Salines airfield on the island of Grenada during the assault phase of the United States' intervention there. Because the unit had initially expected to jump in, each soldier carried the following items — one M16 rifle with bayonet, one M17 chemical-biological protective mask, one rucksack (medium) with frame, individual load-bearing equipment with two one-quart canteens and one two-quart canteen, seven 30-round magazines, one poncho with liner, three C-ration meals, 210 rounds 5.56mm ball ammunition, and one light antiarmor weapon. In addition, each machinegun crew carried 2,000 rounds of 7.62mm linked ammunition, each grenadier carried 36 rounds of 40mm ammunition, and the company carried six Dragon rounds. (No mines or grenades were carried.) Company commander Captain Charles Jacoby estimated that each rucksack weighed in excess of 65 pounds. A resupply was expected within 24 hours after landing.

In the initial phase of the operation, resupply proved to be no problem to the company. The First Sergeant, the company supply sergeant, and the company NBC NCO handled the supply efforts on Grenada itself. The company executive officer (who had stayed behind because he had broken his leg on a training jump) and the company supply clerk pushed the

needed items forward from the base of operations at Fort Bragg, North Carolina.

Ammunition began arriving at the airhead shortly after the initial assault and, because the secured area was small, resupply was easy: Ammunition-bearing parties from each platoon were placed under the First Sergeant and used to ferry ammunition forward. Although there was initially a shortage of fragmentation grenades, a stock of Soviet hand grenades that had been captured made up the shortage.

On 26 October, Company A got its first resupply. Among the items airlifted in from Fort Bragg was the much-needed Gamma Goat that the company XO had somehow managed to get loaded onto an aircraft and sent into the airhead. (How this was accomplished, Captain Jacoby did not know, as his was the only company to receive its Gamma Goat during the incursion.) This vehicle played a critical role in company resupply operations. By SOP, it was kept in the company combat trains, which for this operation was located with the battalion combat trains. There, it was kept loaded with "push packages" of ammunition and other critical supplies so that it could be sent forward at a moment's notice. By the time Company A was withdrawn from Grenada, its combat trains had been expanded by two jeeps with trailers that had been brought into the airhead and a Russian ambulance that the company had "liberated."

Throughout the operation, Captain Jacoby reported few supply problems. The First Sergeant and other company administrative personnel kept the supply vehicles well stocked and were generally able to respond to any supply request within 20 minutes. Since the unit had practiced sustainment drills in peacetime, these procedures worked well in combat. The platoons automatically sent ammunition bearers back to a central point when ammunition was brought forward, and casualties were taken back to the battalion aid station in the company supply vehicles after they had been unloaded.

The only major supply problem encountered was with clothing. To cut down on weight, each soldier had only the uniform he was wearing when he landed in Grenada, and some of these were in tatters within the first 24 hours. In addition, the weather was extremely hot and only about half of the soldiers had been issued jungle fatigues before deployment. Because clothing resupply had never been practiced, the unit had no established procedures for moving stocks of jungle fatigues forward from the supply base at Port Salinas to the troops in the field.

Additionally, Captain Jacoby reported that some of the leather boots worn by the soldiers in his company began to deteriorate during the operation, but that this problem was solved when a local cobbler volunteered to repair them and did so in a single night.

At no time during the operation did Company A have a severe supply shortage or a logistical problem that it could not overcome.

Discussion

The success of Company A in this operation was due, in part, to the excellent logistical support it received upon ar-

rival. This, in turn, was due primarily to the company's sound sustainment SOPs. These procedures, which had been practiced during peacetime training operations, fell neatly into place when the company arrived on the ground. In its planning, the company had carefully considered its logistical requirements, including the soldiers' loads, which were prudently reduced to the minimum required items. The early arrival of ammunition and food items was also planned for, and this plan was carried out efficiently. The soldiers were therefore able to carry a reduced load of ammunition and food while a steady supply of those critical items was assured.

Also important to the mission was the use of company administrative personnel in the sustainment operations. The First Sergeant was in charge of the immediate needs of the company, while the XO, albeit by accident rather than intent, functioned as the company's chief logistician rather than as its second-in-command, and was able to handle the long range needs of the company. It is important to note here that Company A's XO was the only one in the battalion who was used in such a manner and that Company A was the only one to have all of its organic vehicles delivered to it.

Worthy of note, also, is the company's use of locally procured items to fill in the gaps in its logistical support. Since the company was not issued fragmentation grenades before deployment, it used the captured grenades. When its soldiers' leather boots began to disintegrate and a resupply of them could not be procured from approved sources, the company used the volunteer cobbler to repair them. And, finding its supply of vehicles inadequate for the task of sustaining itself, Company A pressed the captured enemy vehicle into service.

The only problem that was not solved was clothing resupply, which had never been practiced previously. This leads one to conclude that in this operation, quite simply, the sustainment operations that had been planned and practiced and firmly established in SOPs, worked; those that had not, did not.

CONCLUSIONS

In reviewing these and similar military operations, one is struck by the similarity in the logistical procedures used by the units that succeeded and the similarity in the lack of sustainability shared by those that did not.

The guiding principle among the victors was a well-defined plan, not merely for the tactical disposition of combat and combat support elements for the battle at hand but for the disposition of combat service support personnel as well. Additionally, those units that were successful on the battlefield had consistently looked beyond the current engagement to those ahead and had carefully projected when, where, and in what quantity resupply would be accomplished.

The units that were unsuccessful had looked only to the maneuver of combat elements, trusting in some unseen and misunderstood "system" to sustain them. When that system failed, so did the mission.

When supplies were being pushed forward on a regular basis, as in Brest and Grenada, the prudent commander planned for a lower on-hand stockage rate and a more frequent

resupply of critical items. But he still kept a readily available emergency stock in his company trains to rapidly resupply his forward elements if necessary. When he could not be sure supplies could be brought forward in a timely manner, the prudent commander stocked enough supplies to sustain his unit for an extended period without resupply, relying upon the capacity of his company vehicles and the strength of his soldiers to transport the required supplies.

The imprudent commander, on the other hand, stocked too few supplies for a given operation or went to the other extreme and stocked too many.

The rule of thumb among mule packers, when mules were still the standard means of moving supplies to the front, was that one animal should not have to carry a load weighing more than one-third of its body weight. In the U.S. infantry, however, soldiers have often been required to carry into combat one-half to two-thirds of their body weight.

This is unfortunate and also often unnecessary, as it was during the Normandy invasion.

At times, there may be situations when it is necessary for soldiers to carry heavy loads. At such times, though, leaders must recognize the special leadership problems inherent in forcing their soldiers to do so. They will move slower, tire faster, and once in contact, fatigue may indeed make cowards of them all.

In trying to decrease the soldier's load or increase the speed of operations, however, a commander must not sacrifice unit sustainability. If he enters the field of battle without a firm logistical plan or without enough resources to sustain a fight, the unit will not be able to accomplish its mission.

Planning sustainment operations means preparing for them in peacetime by firmly establishing supply SOPs that are both sound and flexible and then training on them. Although no records exist of sustainability training in most of the units mentioned in this article, it is apparent that some of them, most particularly Company F, 23d Infantry, under Captain Duckworth, had some extremely well entrenched SOPs. Company administrative personnel—most notably the XO, the First Sergeant, and the supply sergeant—were in charge of keeping the company supplied, and a vehicle with critical supply items was kept in the combat trains, available on a moment's notice.

Captain Jacoby of Company A, 2d Battalion, 325th Infantry, used similar procedures some 40 years later during the invasion of Grenada. It is worthy of note that Captain Jacoby attributed much of his success during that operation to his logistical support, especially ammunition resupply and casualty evacuation; these had been part of his unit's peacetime training exercises. It is also worthy of note that the only supply channels that failed to work during the operation were those that the unit had *not* practiced.

Another similarity between Captains Duckworth and Jacoby was their willingness and ability to use locally procured and captured items to meet their logistical needs.

In all wars and in all places, the existing system will never meet all of the needs of all of its units. Neither will it be able to plan for all contingencies. Local commanders, then, must use any resources that may become available to them to meet the needs of their units.

A commander, of course, cannot completely ensure that his unit is sustained. Indeed, he should keep his eyes on the guns once the battle begins, relying upon his subordinates to carry out the sustainment plan that was formulated earlier. To this end, it is necessary for the XO, the First Sergeant, and all other administrative personnel to have well-defined duties during sustainment operations. It is also important for the XO to be viewed at least as much a logistician as a second-in-command.

Military history teaches that the most brilliant tactician faces ignominious defeat if he cannot sustain the fight. In order to do this, he must plan his logistical support as an integral part of maneuver. This means that SOPs must be developed—and used.

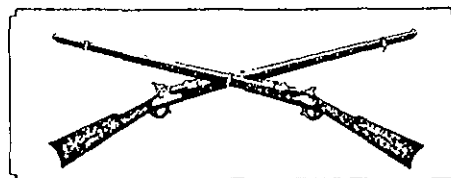
Key personnel must be trained to handle sustainment operations in much the same manner as weapon crews are trained to carry out their missions in support of their units. And while the main thrust of all sustainment operations is pushing supplies to the front, those who occupy positions at the front must always be on the lookout for ways to augment materials that are coming up from the rear or to replace those that are not.

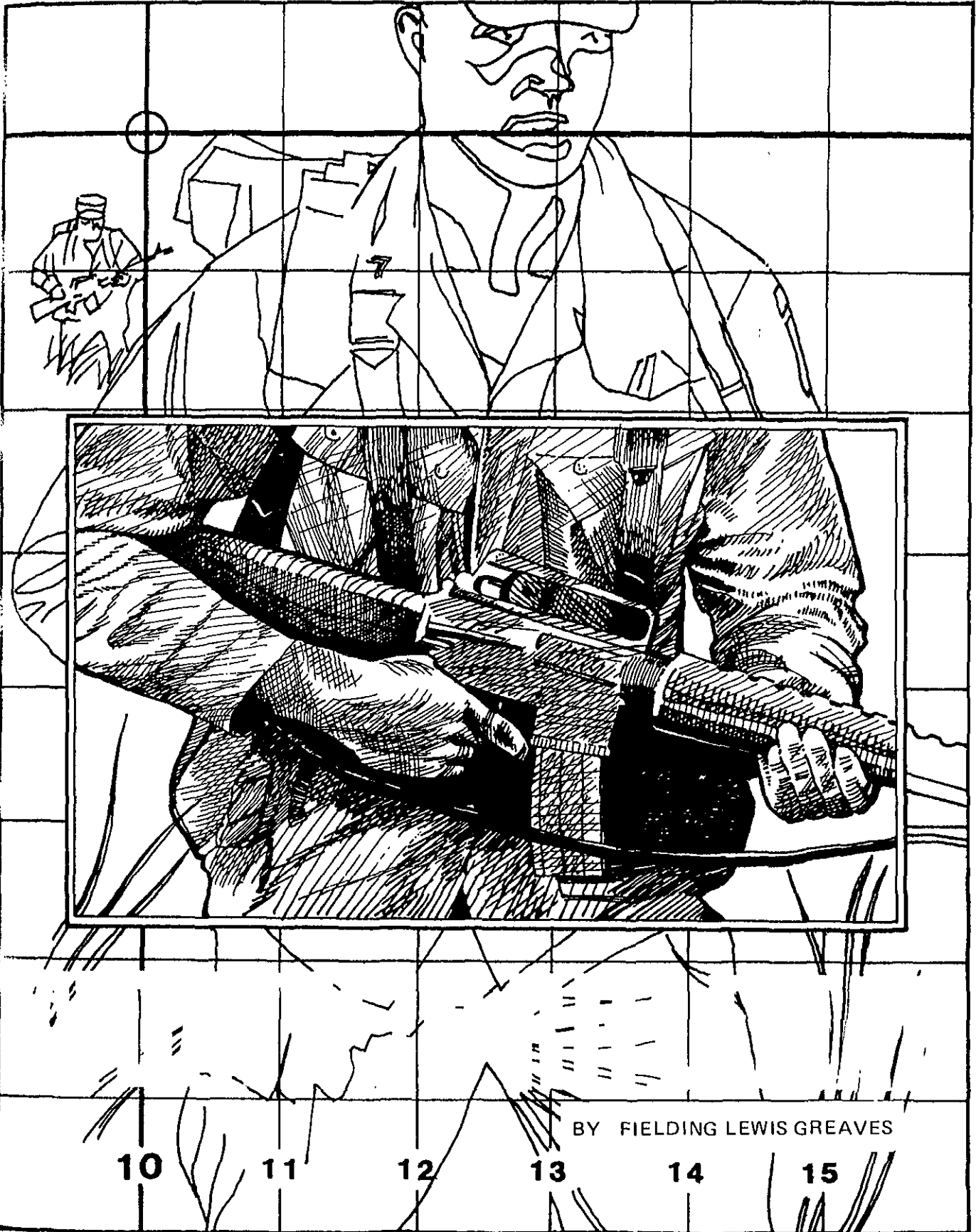
In the final analysis, it is the commander upon whose shoulders and in whose imaginative analysis the key to sustainment lies. He must decide what his soldiers will carry and what they will not carry. He must decide where and how they will be resupplied. And he must decide how the operation will be supported.

Above all, he must decide whether the resources are available to support the planned operation. He must at all costs avoid the temptation to engage in operations that cannot be supported logistically. Otherwise, he will learn firsthand just what can result from the "want of a nail."



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BY FIELDING LEWIS GREAVES

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In the end it all comes down to one man.

Nations mobilize, entire trainloads of supplies crisscross the continent, great convoys put to sea. General staffs pore over their maps, absorb intelligence reports, make their decisions for the commitment of divisions and armies, and produce elaborate deception plans in support of their operations. Corps and divisions are pointed at their objectives and unleashed. Battalions and companies move forward, meet opposition. Patrols are sent ahead, to probe and discover the enemy, to test him. Squads and platoons are moved up, to apply pressure, to punch a hole for a breakthrough, so that the advance may resume.

Do you want your armies and divisions to advance, to move toward the enemy heartland? Their movement is plotted on maps in command posts far from the scene of the battle, marked on acetate overlays in colorful symbols. Blue arrows advance across the acetate, are erased, and new ones move on. The arrows advance, but the rate of movement is slow and labored, and the unit of measure is small. The army moves forward at the pace of its squads and patrols. The pair of dividers by which its movement is measured wears combat boots. In the end it all comes down to one man.

It is he who buys the advance, who pays the cost in toil and suffering and sacrifice and high courage. It is he who makes the blue arrows move forward — by placing one combat boot in front of the other, endlessly. He is the winner of battles, the bringer of victories, and he bears the proudest title on the battlefield: Rifleman.

DOMINANT FIGURE

If the armies of the world should ever get together to select an international “Day of the Rifleman,” surely a leading contender for the honor would be the 28th of April. It was on that date, over four and a half centuries ago, that the man with the gun, the foot soldier equipped with the shoulder firearm, became the dominant figure on the battlefield, a preeminence he would hold for the next half thousand years.

This early infantryman with a gun was not then technically a “rifleman,” for his weapon was the smoothbore arquebus. Although rifling in firearms had been invented earlier, it would not be generally used in military weapons until much later. But the arquebus that won the field at Cerignola on 28 April 1503 was the direct ancestor of the Ferguson and Pennsylvania rifles of 1777, of the Prussian needle gun, of the 1873 Springfield and the 1898 Mauser, of the 1903 Springfield and the M1 Garand, and of the AK47 and the M16 of today.

The rifleman of every modern army or partisan band of the 20th century is a direct military descendant of the Spanish arquebusier of over four centuries ago. In the passage of time the weapon evolved: arquebus, musket, rifle; muzzle loader, breech loader; single shot, repeater, semi-automatic, full automatic. But the man endured, unchanged. The term “rifleman” as used today applies no less to the men of

Cerignola than it does to the rifleman of Saratoga, New Orleans, or Beecher’s Island; of Plevna, Spion Kop, or Belleau Wood; of Bastogne, the Pusan Perimeter, or the Delta of South Vietnam.

Before turning for a closer look at the Cerignola birth of the rifleman, let us go back for a momentary glance at the status of the foot soldier before 1503.

At Pydna in 168 B.C., the famous Macedonian phalanx fought its last battle, going down to defeat before the more flexible and maneuverable Roman legion. For the next five centuries the battlefield was ruled by the legions of Rome, the finest infantry in the world. If on occasion the legion suffered reverses, it was due not so much to any fault of its own as to the mistakes of its commanders.

The end of legionary supremacy came at Adrianople in 378 A.D. In that year, on that sad field, perished the Emperor Valens and 40,000 legionary soldiers, cut to pieces by Fritigern and his Visigothic horse-archers. Infantry went into a long eclipse. Cavalry was to be the dominant arm for the next thousand years.

This victory of cavalry over infantry at Adrianople brought a marked change in the practice of warfare, and had the further effect of determining not only the military but also the political and social development of Europe in the Middle Ages. It ushered in a grand parade of mounted warriors through ten centuries: Gothic light cavalry, Byzantine horse-archers and heavy cavalry, crusading knights in shining armor, the Mongol hordes of Genghis Khan — a thousand-year tapestry of charging horsemen — and, with the introduction of Spanish horses into the western hemisphere, spilled over even into the New World and a later time, when Comanche, Cheyenne, and other Plains Indians quickly adapted themselves to a new life on horseback to become the finest light cavalry in the world.

Early rumblings of the returning ascendancy of foot soldiers had been heard in the 12th century. At Legnano (1176) the pikemen of the Lombard League overcame Holy Roman Emperor Frederick I (“Barbarossa”) and his cavalry, Frederick himself barely escaping with his life. This first major defeat of feudal cavalry by infantry foreshadowed by more than a century the later “Battle of the Spurs” at Courtrai (1302) where French cavalymen, bogged in mud, were knocked from their saddles and clubbed to death by Flemish burghers, and the great longbow victories of Crecy (1346), Poitiers (1356) and Agincourt (1415) where superior forces of the finest French cavalry went down to crushing defeat at the heads of the English yeomen and their famous “cloth yard shaft.”

In spite, however, of these impressive victories of dismounted archers over mounted knights, it was to be another century before the infantryman came fully onto center stage again, and when he arrived, it would be a Spanish commander and his arquebusiers who placed him there.

In the late 1400’s the earliest precursor of the rifle was already in existence. Hand cannon and arquebus had been used by soldiers for some years, but in small numbers and usually with more noise than effect. It was left for the “Great Captain” Gonzalo Fernandez de Cordoba of Spain to develop the full potential of the arquebusier.

This article is a modification of one by the same title that appeared in the April 1970 issue of Guns, p. 32.



After suffering a defeat at the hands of the French at Seminara, deep in the toe of Italy, this Spanish commander set about to reorganize his army. Breaking with tradition, Gonzalo equipped one-sixth of his infantry with the latest firearm, creating mixed companies of arquebusiers and pikemen. He reasoned that a defensive action by a strongly entrenched force of combined arquebusiers and pikemen should be able to withstand any attacker, cavalry or infantry. He was soon to prove his new concept conclusively.

In the spring of 1503 Gonzalo was more or less bottled up in the Adriatic coastal town of Barletta by French forces that were then striving to take southern Italy. Receiving a small band of reinforcements from Taranto, Gonzalo was able to slip out of Barletta with his little army. In unseasonable heat and choking dust on 28 April he marched westward, crossing the Ofanto River not far from the site of the ancient battlefield of Cannae, and at last took up a defensive position on a small vine-covered hill 16 miles from Barletta near the little town of Cerignola. A ditch at the base of the hill was quickly enlarged, the loose earth being thrown up as a defensive parapet

behind the ditch, and the bottom of the ditch was lined with sharpened stakes. Behind these works Gonzalo placed his artillery, 13 guns, and his Spanish arquebusiers and German mercenary pikemen, keeping in reserve a small mounted sally force for use as the battle might develop. As it happened, the artillery was to play little part in the fight: Early in the battle a random spark ignited and exploded the powder magazine, effectively putting the artillery out of action.

Meanwhile, the French, under command of the Duc de Nemours, noting the Spanish departure from Barletta, followed in pursuit. On reaching Cerignola they halted for a council of war before finally attacking near sunset. They moved forward to the attack in three units, echeloned to left rear. First, on the right and led by de Nemours himself, was the heavy cavalry, appraised by Gonzalo as the finest body of cavalry in Italy. Next came the Swiss and Gascon infantry commanded by Chandieu, and last the light cavalry under d'Alegre.

The headlong charge of the French right was checked at the ditch, of which they had been unaware in the gathering dusk. As the French cavalry wheeled left across the Spanish front

to seek an opening in the defenses, the Spanish arquebusiers raked them with a deadly and continuing fire. Many fell, including de Nemours, who was mortally wounded by an arquebus ball. Into this swirling scene of confusion now came up the Swiss and Gascon pikemen. They tried to storm the ditch and parapet, but the loose earth and the bristling array of pikes made headway impossible, while the arquebusiers continued to fire into the crowded ranks of the attackers.

French horse and foot now a confused mass before the Spanish position, Gonzalo ordered his sally force to counterattack. The French were routed, the battle quickly over, with D'Alegre's unit hardly getting into the action at all. The whole battle had taken little more than an hour. The following dawn revealed a grim picture: over 3,000 dead and wounded French, half the French force, lay scattered about the field. Their passing marked a larger passing, the end of French efforts to take southern Italy.

But this small battle, as important as it was politically for Italy, Spain, and France, was still more significant for another reason. Its outcome clearly validated Gonzalo's concept for the tactical use of that new type warrior, the arquebusier. Fabrizio Colonna, one of the captains with the sally force at Cerignola, afterward remarked: "Neither the courage of the troops nor the steadfastness of the general won the day; but a little ditch — and a parapet of earth — and the arquebus."

The true significance of Cerignola was best expressed by Field Marshal Viscount Montgomery in his book *History of Warfare*: "Gonzalo de Cordoba had raised the infantry soldier armed with a handgun to the status of the most important fighting man on the battlefield — a status he was to retain for over 400 years."

VOLLEYS

If any doubted the validity of the conclusions at Cerignola, those results were soon confirmed by later battles at La Motta, Biccoca, and Pavia. Unlike the others, Pavia (1525) was no defensive action. Here the Spanish arquebusiers and pikemen under the Marchese of Pescara attacked the French on open ground. Volleys of arquebus fire wrought havoc among both horse and foot of the French, and the French king, Francis I, was himself taken prisoner.

Gonzalo had made his point. The armies of Europe were not long in following his example. At Cerignola only one-sixth of the Spanish infantry had consisted of arquebusiers. As time went on, the proportion of firearms to pikes steadily increased. A century after Pavia, in 1626, a British military writer recorded that "According to our present discipline, a company of 200 men would contain 100 pikemen and 100 musketeers" — the musket by then having replaced the arquebus. By 1642 and the outbreak of the Civil War in England, Cromwell's New Model Army had two musketeers for every pikeman. Ultimately, with the invention of the plug bayonet, the need for pikemen disappeared.

In the early 1500s, while these first "riflemen" were becoming ever more important components of European military forces, they were not so popular with those whom they were

rendering obsolete, the mounted knights. The famed Chevalier Bayard, for example, the French knight *sans peur et sans reproche* (without fear and without reproach), lived in those early days of the firearm. This intrepid knight so detested (or feared?) the thought of being vulnerable to death from a distance, and at the hands of a social inferior, that he was guilty of most unknighly conduct: He made a practice of summarily hanging any Spanish arquebusier who had the misfortune to fall into his hands. Bayard must have had a premonition, for in his last combat, a valiant rearguard action at the crossing of the Sesia River in northern Italy in April 1524, he was slain by an arquebus ball.

The Age of Chivalry and knighthood had ended. The work that was started by English archers was completed by the Spanish arquebusiers of Gonzalo de Cordoba.

The Day of the Rifleman dawned over four and a half centuries ago, and the rifleman's sun is still high in the sky. Armored carriers and helicopters have increased, not diminished, his role on the battlefield. "We must never forget," remarked General Lyman L. Lemnitzer, former Chairman of the U.S. Joint Chiefs of Staff (1960-62), "that the military purpose of war is to achieve control over land and the people who live on it. The ultimate measure of the control which has been attained is the area dominated by the infantryman with the fire of his individual weapon. In the final analysis, the success with which that domination is established, maintained and extended depends in large part on the soldier's mastery of his rifle."

General Bruce Clarke said in his *Training Guidelines for the Commander* that "The fighting man on the ground is the 'ultimate weapon' — the fundamental factor of decision...The soldier who can and will shoot is essential to victory in battle." In the words of General Matthew Ridgway, "There is still one absolute weapon...the only weapon capable of operating with complete effectiveness — of dominating every inch of terrain where human beings live and fight, and of doing it under all conditions of light and darkness, heat and cold, desert and forest, mountain and plain. That weapon is man himself."

In 1503 Gonzalo de Cordoba made the infantryman with a gun the most important man on the battlefield. In 1962, four and a half centuries later, the then U.S. Secretary of the Army, Elvis Stahr, remarked that "Despite all the powerful weapons systems available for our defense today, the rifleman still bears a major responsibility for the security of the land on which we live, from which we draw our sustenance, and to which we must return after every flight into space or fancy. Indeed, it is still the thin line of uniformed riflemen who form the true cutting edge of our national power."

Fledding Lewis Greaves is a retired Military Intelligence officer. A former China area specialist and former Field Artillery officer, his assignments have included two attache tours, two Army Language School courses, two tours on the Army's top G-2 staff at the Pentagon, and three years as a Command and General Staff College instructor. His articles on a wide variety of subjects have appeared in various publications.

TRAINING NOTES

Bradley Gunnery Training

LIEUTENANT THOMAS G. ZIEK, JR.

The introduction of the M2 Bradley infantry fighting vehicle (BIFV) into the Active Army's inventory brings along with it the need to change not only our tactics but also our methods of training mechanized infantry units.

The Bradley moves faster than any vehicle the infantry has every had, and its weapon systems — the 25mm chain gun, TOW missile system, M240C coaxial machinegun, and M231 firing port weapons — make it one of the deadliest pieces of equipment in the world. It enables an infantry squad to fight through to the objective using the vehicle's armor for protection. In addition, its thermal energy equipment allows the squad to rob the enemy of the protection of darkness.

All of these advantages will count for nothing, though, if the infantry squad is not properly trained to use the vehicle and its weapons.

Training for Bradley infantry squads should emphasize two areas: gunnery and crew drills. Without adequate gunnery training, the crew will not be able to use the on-board weapon systems to their fullest advantage. Some targets may be engaged with the wrong type of weapon system, for example, or, because of poor fire commands, targets may not be engaged at all.

Ranges are a problem, though. Because of the nature of the 25mm cannon on the vehicle, most of the existing infantry vehicle gunnery ranges are too small. Fortunately, this is changing as more and more Bradley ranges are be-

ing built. Meanwhile, existing tank ranges can be used for Bradley gunnery practice, but the Bradley units will have to compete with tank units for these already scarce tank ranges, and the priority for their use will normally go to the tank units.

RANGES

This lack of adequate live fire ranges for Bradley gunnery training can be overcome to some degree by a good, well-planned home station gunnery program. This program is not a substitute for actual live fire and gunnery exercises, but it does enable the crews to get the maximum training value from those exercises once ranges become available.

Home station gunnery training has several advantages that recommend it to immediate implementation. It can be easily set up, it is relatively inexpensive, and it makes use of motor pool "down" time. Everything needed for both home station gunnery training and the corresponding squad drills can be easily obtained or made by a unit's Training Aids Support Center.

INFANTRY HOTLINE

To get answers to infantry-related questions or to pass on information of an immediate nature, call AUTOVON 835-7693, commercial 404/545-7693.

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

This training program can be broken down into two basic phases: initial training and scaled range training. The initial training phase starts with the basics: range estimation, target acquisition, fire commands, and turret manipulation.

The crew must be trained in range estimation using the stadia line method and the mil relationship method. To help the crew estimate range faster, every vehicle should have the mil range relationship table that appears on page 8-4 of FM 23-1 affixed either to the turret top on the commander's side of the vehicle or to the gun guard door.

Range estimation can be taught anywhere — the motor pool, an open field, a classroom. Training aid models can be made or drawn from the TASC, binoculars can be used, or a Bradley can be brought to the training site.

Target acquisition — the ability to identify targets; classify them as either friend or foe; categorize them as most dangerous, dangerous, and least dangerous; and assign them priorities for engagement — should begin with vehicle identification. Once the crews have become adept at this, the gunner and commander should be taught how to categorize threat vehicles.

When the commander and the gunner are skilled at categorizing targets, both should be allowed to practice this skill. For example, slide projectors can be used to flash images of targets with an exposure time of three to five seconds. In fact, this technique can give them the

TRAINING NOTES

practice they need in all aspects of target classification.

Another task taught in the initial phase is how to issue fire commands and do the specific duties that each crew member must perform. The crew must master five basic fire commands — TOW, battlesight, precision, degraded, and firing port weapons. It is essential that the gunner master every task that he must accomplish to get the first round downrange — selecting the proper weapon system and ammunition, arming the system, acquiring the target, selecting the proper range, switching from low to high magnification once the target is acquired, picking up a good sight picture, and squeezing the trigger. (These are the duties a gunner must perform during a precision gunnery fire command.)

FIRE COMMANDS

This task can be practiced initially in a dayroom or classroom with both the commander and the gunner going through the fire commands. Once both members feel comfortable with each other, they can move either to a turret mock-up or to an actual vehicle and tie the fire command to the specific duties of engaging a target. (A turret mock-up should be built for practice to save wear and tear on the Bradley.)

The final task in the initial phase of this training is manipulation — acquiring and tracking targets. Manipulation training can be divided into three phases: Worm board training, the use of scaled ranges, and stabilization runs.

A worm board is a board with two parallel lines painted on it to simulate vehicular movement when a gunner tracks along its length. It is effective in giving both the commander and the gunner tracking experience in both the manual and the power modes of turret operation. It is easy to make and can be hung anywhere.

A scaled range is set up to give the commander practice both in issuing fire commands and in laying the gun. It can be set up anywhere — a corner of the motor pool, an open field. Scaled range training reinforces everything that has been done up to this point in home sta-

tion gunnery training.

Stabilization runs should be programmed into the training. This is the most important exercise, because it shows the coordination of the commander and the gunner in target hand-offs (the gunner taking control of the turret once he has acquired the target), and also in fire commands and crew duties. If there have been any problems in the training of the Bradley commander and the gunner as a team, they will show up here, early enough to be rectified by additional training.

The second phase of home station gunnery training is subcaliber range training. This range gives the gunner, the commander, and the driver an opportunity to fire, sense, and correct actual rounds going downrange.

Depending on space and available money, one of three types of subcaliber ranges can be set up: a 1/35 scale range using either 5.56mm ball or .22 caliber rimfire ammunition; a 1/60 scale range using .22 rimfire ammunition; or an M55 laser range.

The subcaliber ranges for 5.56mm and .22 caliber rimfire ammunition are set up the same way. Unit master gunners will be able to offer advice on target mixes for gunnery practice, the proper spacing of targets, the space needed to set up a range, safety considerations, and materials needed to mate the subcaliber weapons to the Bradley.

Because neither 5.56mm nor .22 caliber rimfire ammunition acts the same ballistically as 25mm ammunition, extreme care must be taken in training gunners. Once the subcaliber device is zeroed to the sight unit, the gunner cannot index a different type of ammunition or a different range without destroying his zero. Because of this, the gunner must not be allowed to fire on a subcaliber range until he has mastered the initial gunnery phase. For training purposes, however, it is up to unit leaders to make sure their gunners are going through the motions of indexing range and ammunition.

If for some reason a subcaliber range cannot be set up or used at a unit's home station, the same training can be accomplished using a stout board, an M55 laser, scaled targets, reflective targets,

the Brewster device, and the Fioni adapter.

All that is necessary is to set up a scaled range, place the board so that it is out of the gunners' field of view, and mount the M55 laser to the M2. Once this has been done, either the master gunner or the unit leader "chokes" the targets using the ISU's stadia lines, indexes the proper ammunition type and range, aligns his sight with the center of mass of the target, and then engages the laser. An outside helper then places the appropriate reflective target (center of mass) where the laser will strike the board. This is then done for all targets. The proper ranges and ammunition are written on a sheet of paper and used to help critique the commander on his ammunition selection and range estimation.

Once this has been done, the gunner and the commander are put into the turret, where they go through their engagement sequence, doing all the tasks as if ammunition were actually being fired. Once the gunner has announced "On the way" and has fired the M55, the commander can look down at the board and give his sensing corrections from there, at the same time practicing burst on target, a critical M2 gunnery task. Because the crew can use all the controls realistically and also sense rounds, whenever possible the M55/stout board range should be used instead of the other subcaliber ranges.

SIGHTS

The use of the thermal imagery sight in the ISU takes considerable practice to master. Since there is now no set way of teaching the use of thermal sights, units must be inventive in their training. Field problems give the crews an excellent opportunity to manipulate the sight. Scaled targets made of tin can be fashioned and then heated with a candle to simulate targets.

Since the M2 is an infantry squad vehicle, during home station gunnery training special emphasis must be placed on training the dismount element to use the M231 firing port weapon properly. Because of the M231's high rate of fire, and because of low ready ammunition avail-

ability, every effort must be made to allow the dismount team to practice using the weapon from the vehicle itself. Otherwise, one of the vehicle's key capabilities is wasted.

The dismount team, therefore, must learn to give quick, accurate spot reports and fire commands for the M231, serv-

ing as extra eyes for the commander. This again improves both the team concept and the capabilities of the vehicle itself.

A strong, coherent home station gunnery program is critical to the training of Bradley crews, for it will ensure that once a unit does get some range time, it will

be able to use that time to the best advantage.

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NTC: Lessons Learned

CAPTAIN GREGORY M. HERITAGE

Military actions over the past two or three years have served to remind us that war can come without warning. Our units, therefore, must be thoroughly trained during peacetime to be ready for war anytime, anywhere.

The National Training Center (NTC) at Fort Irwin, California, was established as a place where our units could train under realistic combat conditions. Units in training at the NTC often make mistakes, but from those mistakes they learn lessons that improve their operational readiness. Other units, too, can study these same lessons and, perhaps, avoid making the same mistakes when they go to the Center to train.

Reports from the NTC and observation reports from officers who visit there specifically mention certain recurring problems in the areas of planning, troop-leading procedures, communications, tactical operations, and logistics. Accordingly, a discussion of these problems may help other units to avoid them and conduct better training both before going to the NTC and while they are there.

Planning

First, in their planning, battalion commanders must develop procedures for using their staff officers more fully. Too often at the NTC, a battalion commander's plan is seriously flawed because of a superficial or inadequate METT-T (mission, enemy, terrain, troops, and time) analysis. This usually occurs when

a commander and the S-3 ignore the battalion staff and develop their plan without sufficient consideration of the unit's current equipment status or its logistical support. A plan that lacks a thorough staff analysis often has inherent problems that are quick to surface when the operation begins.

At the same time, each commander must make sure his intent — his purpose and overall goal — is completely understood. If it is not, there will be a lack of initiative on the part of his subordinate chain of command.

Another planning problem involves the development of an appropriate task organization in which units can be integrated to form a combined arms team. The appropriate task organization depends, of course, on the situation. Nevertheless, battalion commanders at the NTC have been known to employ pure infantry or pure tank companies when the situation clearly called for a mixture of some sort. In war, as a result, a unit could either suffer an excessive number of casualties or could be unable to bring its full combat power to bear on any enemy force. A commander must be flexible, too, ready to reorganize his forces as the situation changes.

In the planning process, commanders must also demand that only standard graphic signals be used to represent control measures on maps and overlays, and that these depictions be accurate. At the NTC many units use graphic symbols that are confusing, incomplete, or not

precisely depicted.

Finally, a unit's plan must take into consideration the use of emergency signals. Such signals are often crucial when a unit lifts or shifts fires, and when it conducts a withdrawal.

Troop Leading

The primary lesson learned in regard to troop-leading procedures is this: Leaders must follow through with inspections. Part of this problem at the NTC stems from the fact that senior leaders are late in issuing warning orders and operations orders, leaving their subordinate leaders too little preparation time. Many leaders, however, fail to inspect even when there is plenty of time. (Junior leaders, in particular, have a tendency either not to check at all or to over-supervise.)

Another problem is that both battalion and company commanders tend to try to do too much themselves instead of delegating some tasks to their key subordinates.

Communications

Communication security continues to be a major concern at the NTC. Enemy interception and direction-finding capabilities make radio use hazardous, yet radio transmissions at the NTC occur too frequently and last too long. Soldiers also unthinkingly reveal their positions by relating them to landmarks

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that are visible to both friendly and enemy forces.

Remote or directional antennas are seldom used; wire communication is not used enough; and messengers are rarely ever used. Also, command nets are often cluttered with detailed instructions that are a direct result of poor planning.

Tactical Operations

Many lessons have come from the tactical operations conducted at the NTC. For example, one of the most important lessons is this: Continuous reconnaissance is necessary, not only for gathering information but also for security reasons. But experience tells us that many unit commanders do not emphasize reconnaissance activities. As a result, their units fail to patrol aggressively, especially at company level. Furthermore, listening posts and observation posts are not used to their full potential.

Units tend to limit the number of patrols they send out, relying instead on the scout platoon to screen the front. But the scout platoon's primary mission is to help the commander see the battlefield. When enemy contact seems possible, this is what it should be doing. Routine screening missions and coordination with adjacent units should be its secondary missions. (Because the platoon has limited firepower, it should avoid decisive engagement during these missions.)

In short, all front line units must be required to patrol aggressively and continuously, and the scout platoon should be used to provide continuous observation.

Although commanders usually conduct a personal reconnaissance before issuing an operations order, they tend to leave behind key leaders who could also benefit greatly from that reconnaissance. Commanders also tend to overlook supporting aircraft as a valuable source of current information.

Another important lesson from the NTC concerns night attacks. We all agree that our units must be trained to conduct effective night attacks because they can greatly reduce casualties. Unfortunately, at the NTC, too few units seem to know how to conduct them.

Night attacks must be simple and

clandestine. But at the NTC they often include complex schemes of maneuver that result in uncertainty and confusion. Poor navigation then adds to that confusion. (Navigation, overall, needs much improvement.) Soldiers use lights carelessly and make too much noise, and units use their vehicles' "blackout drive" lights within sight of the opposing force (OPFOR).

Many times, too, surprise is completely lost before an attack jumps off because of vehicle noises and radio transmissions. Seldom is artillery or mortar fire used to muffle the noises, and soldiers often forget tools (such as wire cutters) that could enable them to remove obstacles more quickly. Then, following a night attack, reorganization and consolidation efforts are also excessively confusing.

Battle drills need to be emphasized so that soldiers will react immediately and correctly when they are fired upon. These drills should include obstacle breaching; actions on enemy contact, air attack, artillery fire, and nuclear-biological-chemical (NBC) attack; and reorganization and consolidation following an attack.

Breaching operations should be executed like a drill, and obstacles should be removed quickly. Ideally, units should breach obstacles before attacking, making several breaches. The breached lanes should then be marked with standard markers and guides made available. Smoke should be used to protect the engineers while they breach an obstacle. If these measures are not taken, units tend to bunch up during breaching operations, creating lucrative targets for enemy air attacks.

A number of other tactical operations lessons that have come out of the NTC:

- Tactical operation centers (TOCs) need to be used more effectively. Experience at the NTC indicates that TOCs are not able to perform planning, reporting, or command and control functions adequately. Sometimes they are too far to the rear to be effective in communicating and coordinating information. Sometimes, too, a junior leader is left to supervise the TOC, and this practice has resulted in such errors as single-echelon displacements and TOC locations in terrain that practically prohibits the use of

radio communications. Lack of security for a TOC is another common problem. (TOCs also need a central working area to make coordination easier.)

- Ground surveillance radars (GSRs) are not used effectively at the NTC. They should be integrated with a unit's fire control system to assist that unit in acquiring targets and adjusting fires. They can also be used during both day and night attacks to help a unit with its navigation. (It is well to remember that GSR elements must have adequate security.)

- Redeye, Stinger, and Vulcan anti-aircraft elements must be near the front so that they can protect the friendly unit from enemy air attack. The Redeye and Stinger elements will have only limited mobility, so that must be taken into consideration when they are deployed.

- Whenever they halt, units should seek cover and concealment and deploy their anti-aircraft weapon systems. All too often during halts on a road march, units take no protective action at all and thus become obvious targets for enemy aircraft. All vehicles should have air guards because the enemy's air threat cannot be ignored, and there is no guarantee that we will always have air superiority in future conflicts.

- Vehicles under air attack should not use vehicle-generated smoke, because the smoke will clearly pinpoint them as targets.

- Flank shots are far superior to frontal engagements, and shots from both flanks are better still. A few well-sited weapon systems often cause the enemy the most casualties. Once the battle has started, it is often useful to reposition key weapons to bring as much destructive power as possible on the enemy.

- Frontal attacks are used too often, even when flank attacks are possible, and frontal attacks can result in high casualties. Furthermore, in a frontal attack, the attacking forces tend to lose momentum upon contact with the enemy; they slow down and become exposed to enemy fires at the very moment when aggressive violent action is needed to overcome the enemy defenses.

- Units must be prepared to form combined arms teams instead of fighting their own battles as individual units. When

various units fight their own battles, the result is often piecemeal commitment and a failure to concentrate the combat power needed to defeat enemy defenses. Casualties increase, too, when units fight individually and fail to form combined arms teams.

•During attacks, armored personnel carriers must provide machinegun fire to help protect the leading tanks. Overall, suppressive machinegun fire is not used effectively at the NTC. Furthermore, leaders appear to be hesitant about dismounting their troops, even when facing strong antitank guided missile defenses. Finally, when the soldiers are dismounted, their individual fighting positions tend to be too wide and not deep enough to provide them proper protection from enemy fire.

Logistics

During NTC operations, the combat elements often run low on ammunition and fuel because they are not properly resupplied. The first lesson regarding logistics, therefore, is this: Resupply must occur at every opportunity, especially before attacking and immediately afterward. A continuous resupply effort will ensure that units get the supplies they need to handle unforeseen events.

Vehicles should be required to "top

off" even when their tanks are nearly full, but adequate cover, concealment, and security must be provided during the refueling operation. Continuous refueling will also ensure that a unit's vehicles are always ready for extended movements.

Company trains must be far enough from their supporting unit to avoid being vulnerable to direct fire; task force trains need to be close enough to be responsive to supporting units. At the NTC, company trains tend to be too close, and task force trains too far back. Furthermore, task forces tend to concentrate entirely on the enemy forces to their direct front. Consequently, their lines of communication are often vulnerable to enemy troops who may have been bypassed or who come around open flanks. *Supporting train elements must have proper security.* Yet, too often train security elements have no antiarmor weapons with which to defend themselves against enemy armor.

Logistical responsibility for supplying attached elements must be clearly established. This is essential in keeping special equipment operational.

Maintenance deficiencies should be corrected daily. Following a two-week NTC training cycle, units request an average of 6,500 repair parts for their vehicles during their recovery periods. It is obvious from this statistic that units are

waiting to correct their vehicle deficiencies during these recovery periods. This is the wrong thing to do; in actual combat, during which operations will have to be conducted for extended periods, maintenance deficiencies must be corrected daily if a unit expects to keep on the move. In short, proper maintenance and an adequate resupply of spare parts are essential for success on the modern battlefield.

It is evident from these lessons learned at the NTC that our combat units must *improve in their training* if they are to be fully prepared for war.

Our combat units, and our supporting elements as well, must be ready to deploy to an active war zone on a moment's notice. Our leaders must take advantage of the lessons learned at the NTC, and must incorporate those lessons into their own training programs. We can afford to make mistakes — and to learn from those mistakes — in peacetime; the price of error in combat is too high.



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NTC: Techniques

LIEUTENANT COLONEL ALAN G. VITERS

The National Training Center (NTC) at Fort Irwin, California, is one of the finest military training facilities in the world today. Among its unique aspects are an instrumented battlefield and a live opposing force (OPFOR) regiment. Combat realism is achieved through the employment of MILES (Multiple Integrated Laser Engagement System) sensors and monitoring devices and through the

OPFOR, which is trained and equipped to challenge the best of our own forces.

The purpose of this article is to share some of the lessons learned and the techniques of combat (or "field craft") devised during one mechanized infantry battalion's rotation at the NTC. Some of these techniques are not particularly innovative, but they seemed to work well in the stressful desert training environ-

ment at Fort Irwin.

A unit scheduled to go to the NTC needs to do several things before it deploys.

First, it needs to run an effective leader training program. As the highly professional German Army discovered before World War II, leaders can learn a lot through the use of sand tables, chalk talks, and TEWTs (Tactical Exercises

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Without Troops). Today, leaders can add to that list simulations (especially CAMMS and ARTBASS).

An excellent way for leaders to increase their knowledge of the threat (and of the OPFOR they will face at the NTC) is to study and reflect upon the series of NTC-related articles in *Red Thrust Star*, a publication put out by the FORSCOM OPFOR Training Detachment at Fort Hood. It will also help them if they are tested periodically on OPFOR doctrine and tactics.

Another pre-deployment task for commanders is to prepare the family members of the unit's soldiers for this major training event, giving them as much information as possible. Wives appreciate having a better understanding of the environment in which their husbands will be training, and they also need to have a chance to prepare for the extended separation. They may need to plan for paydays, for example, adjust appointment and social calendars, and arrange for Powers of Attorney or other legal assistance.

In addition, family members like to share in the excitement that surrounds an NTC rotation and can often plan separate activities around the unit's departure and its return.

There are some useful devices that the unit can prepare before it leaves for the training center. Since managing direct and indirect fires at NTC will be critical, it will be important for adjacent elements to be able to readily recognize their sectors of fire. One technique for doing this is to use clearly recognizable target reference points (TRPs).

A unit can construct a TRP marker by fastening a plywood board to an engineer stake. If the enemy side of the board is painted a sand color and the friendly side in luminescent paint, such a marker can be effective in both day and night operations. Chemical lights can be hung on the wood panel at night to create a lighted effect. (Unit SOPs should designate team or company colors, and the markers should be painted and issued in compliance with those SOPs.)

Vehicle marking systems that will help the unit identify friendly equipment can also be developed. Such a system is valuable when the battlefield is obscured,

when elements get mixed together, and when ground movement needs to be directed from the air. In addition, maps can be printed with TIRS (Target Identification Reference System) points already on them. This way, this information will be less likely to be erased or washed off in the heat of battle.

One of the items the unit should plan to take along is a good mimeograph machine to use in copying orders. At the NTC, written operations orders must be prepared at task force level for each tactical event. It is not uncommon for these orders to be as long as 10 to 20 pages, depending upon the type of operation and the planning time available. Since copies of these orders have to be submitted to the NTC evaluators and, of course, to attached, subordinate, and higher units as well, as many as 30 copies of orders may be required.

The "jelly roll" device is sometimes used, but a mimeograph machine such as the A.B. Dick is more effective. My battalion used one of these machines, and it produced fast, high-quality copies in the field, failing only once when the handle broke.

Once the units begin their training at the NTC, commanders must be aware of the importance of managing time on the modern battlefield. Subordinate units must be given enough time to conduct their planning, write orders, and perform reconnaissance and rehearsals before the battle. Higher headquarters, therefore, should abide by the one-third/two-thirds rule, never using more than one-third of the planning time available in issuing its own directives and orders. Proper adherence to this simple, basic rule of tactical procedure pays dividends and is rewarded at the NTC.

Before each tactical operation, the commander of a unit must make sure his subordinates understand his intent and his concept of the operation. This will enable them to take charge when operations become decentralized and they are left on their own. Controlling the battle by radio may be a luxury the OPFOR's jamming capabilities won't allow. For these and other reasons, it is critical, as the situation permits, for commanders to require subordinate commanders to backbrief them on their plans before crossing the

LD. This technique can help reduce some of the self-induced "fog of battle" a unit often experiences.

Whenever possible, commanders (particularly task force commanders) should use attached helicopters to conduct aerial reconnaissances before an operation. These aerial reconnaissances can be particularly valuable during defensive operations in determining the location of fighting positions and in monitoring the progress of construction. (Engineer units can assist in constructing overhead cover to augment the barrier materials available to the infantrymen digging fighting positions.)

In addition, air scouts can be helpful in locating any OPFOR reconnaissance vehicles (BRDMs and motorcycles) that may have penetrated friendly positions by stealth to gather intelligence on friendly positions.

Finally, the single most important skill soldiers need if they are to kill the OPFOR is proficiency with the MILES devices on their individual weapons. Soldiers need to zero their MILES devices before each tactical operation (the OPFOR does this religiously), and they need to develop confidence in the system. They can achieve that confidence by practicing and by learning techniques such as mounting sensor bolts on distant targets and gradually increasing the number of sensors they can engage until they achieve highly accurate MILES firing.

To succeed at the NTC, a unit needs several critical ingredients — its authorized number of personnel, the opportunity and funds to conduct annual ARTEPs, and tactically proficient and competent soldiers at all unit levels. The techniques offered here are not meant to substitute for these ingredients, but they help make *your* unit all that it can be in training for and in going to war.



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ENLISTED CAREER NOTES

SQI ORDER OF PREFERENCE

A soldier's skill qualification identifiers (SQIs) appear as letter codes in the fifth position of his five-digit PMOS and SMOS codes. This letter on each identifies special qualifications the soldier holds.

SQIs have an order of preference as set forth in AR 600-200, Paragraph 2-33, as follows:

- V (Ranger-Parachutist)
- Y (Pathfinder)
- P (Parachutist)
- M (First Sergeant)
- X (Drill Sergeant)
- G (Ranger)
- K (NCO Logistics Program)
- H (Instructor)

Either the commander who has custody of the soldier's Military Personnel Record Jacket (MPRJ) or the training activity commander awards an SQI.

When an SQI is removed from the PMOS because the soldier has been awarded an SQI with a higher recording preference, the lower SQI is then recorded on the SMOS. This does not apply, however, when the skills of the new SQI include those of the old one. For example, if a soldier's PMOS carries a P (for Parachutist) and he later earns a V (for Ranger-Parachutist), the V is recorded on his PMOS and the P is dropped entirely instead of being entered on his SMOS. Then another SQI (if he has one) can be recorded on his SMOS — an X, for example, if the soldier is also drill sergeant qualified.

All personnel concerned (military personnel office, battalion personnel center, unit First Sergeant, and the soldier himself) share the responsibility for seeing that the soldier's qualifications are registered (where applicable) in the Enlisted Master File (EMF). The proper recording of these codes is essential to the effective management of specially trained soldiers.

For the SQIs not listed above, the most recently awarded SQI (except "L") will be recorded first.

SSG PROMOTIONS

Beginning with the next sergeant first class promotion list, expected to be released in February, promotable staff sergeants will receive their stripes on the basis of the needs of their particular MOSs — not on seniority alone.

The change will not affect how staff sergeants are chosen for promotion, nor will it affect the number selected.

Instead of having one promotion list arranged by seniority as in the past, a separate promotion list will be prepared for each MOS. Within each MOS list, however, the soldiers will still be promoted by seniority.

Under the old system, the number of soldiers promoted in some MOSs exceeded the number of job vacancies in the MOS, while other MOSs remained critically understrength.

In some cases, this change may benefit soldiers already filling sergeant first class positions, because they can be promoted and paid for the duties they are already performing.

CORRECTION ON INFANTRY ANCOC NOTE

The item on Infantry ANCOC in our November-December 1985 issue (page 42) needs to be corrected.

That note states that the course is tracked — that all CMF 11 students receive training in certain common subjects and then the 11B, 11C, and 11H students follow different tracks.

This is incorrect.

All the students — 11B, 11C, 11H, and 11M — receive the same instruction.

The earlier note also states that appli-

cants must be staff sergeants, but they can also be promotable staff sergeants or sergeants first class.

The remainder of the item is correct.

For additional information on the Infantry ANCOC program of instruction, anyone interested may refer to AR 351-1 or call the Directorate of Training and Doctrine, U.S. Army Infantry School, at AUTOVON 835-1612 (SFC Carpenter or CPT Martin).

GETTING PROMOTED

Each time an SFC/PSG promotion list is published, the questions start. Some staff sergeants ask, "Why wasn't I promoted?" or "Why should I continue to seek the tough jobs?"

Meanwhile, their commanders and supervisors are also wondering why these good NCOs have not been selected.

On each selection board it seems that a large percentage of those selected have been considered previously—some several times. Why does this happen?

For one thing, the needs of the Army may change from year to year. An NCO now competes only against those in his own MOS, and the number of projected vacancies at the next higher grade determines the number to be promoted. And with force modernization and changes to the force structure, the number needed in each MOS may also vary from year to year.

Another factor, however, is that these NCOs may have improved their files. If you are still trying to be selected for promotion, there are several things that you can do to improve your own file.

First, if you have any old Article 15s in your Official Military Personnel File (OMPF) at the Enlisted Records and Evaluation Center (EREC), get them out. AR 27-10 contains procedures for transferring old Article 15s (received, per-January-February 1986 **INFANTRY 43**

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haps, when you were in a junior enlisted grade) from the performance portion of your OMPF to the restricted portion. (Selection boards do not see the restricted portion.)

Then you must put the same effort into preparing your OMPF to appear before the board that you put into preparing yourself to appear personally before a local promotion board. (For the local board, you reviewed your local personnel file for accuracy; made sure your uniform was spotless and sharply creased, shoes spit-shined, and ribbons new and properly worn. You did all this detailed preparation because you knew it would make a favorable impression on the board.)

Check your file yourself before the board convenes. Make sure all your awards and decorations are listed and see that the documents that should be on your OMPF are there—EERs, academic reports, and course completion certificates for resident and nonresident courses. At the same time, make sure all the records in your file are yours and not someone else's.

Check your photograph. In it, you should be standing at attention, wearing the correct uniform with the proper fit. In short, make sure the photograph shows you the way you want the board to see you.

Are you physically fit? If you are overweight, lose what you need to lose. If you can't pass the APRT, work out, get in shape, and pass it!

Don't give up hope if you have failed an academic course. Take it again. If you can't retake a resident course, do it by correspondence. Study your military skills and do the best you can on your SQT. Raise your GT score if it is below 100. Continue with civilian education, and make sure the courses are properly reflected on your PQR and OMPF.

Seek out the toughest leadership job. Be a squad leader, a platoon sergeant. If your current duty position has you supervising several people, make sure the duty description and narrative portion of your EER reflect this leadership information. The "tough jobs" tend to stand out when selection board members review assignment histories.

Competition for promotion is tough.

There is no single item that will guarantee your promotion. You must be strong in all areas, do well in all your jobs.

Seek the tough leadership jobs, stay physically fit, take your SQT, if available, and score high. Keep your official records current. The opportunities are there.

PLDC REQUIRED FOR PROMOTION

As of 1 July 1986, in order to be promoted to staff sergeant, sergeants will have to be graduates of a primary leadership development course (PLDC).

This requirement is intended to ensure that all soldiers being promoted to staff sergeant have had a primary level of leadership training. Soldiers who have graduated from a PLDC or a primary or basic noncommissioned officer course (PNCOC or BNCOC) will be considered to have met this requirement.

Soldiers on the staff sergeant promotion standing list who are not graduates of one of these courses as of 30 June 1986 will be removed, and no soldiers will be recommended for promotion unless they are graduates.

Meanwhile, attendance at this course will be restricted to sergeants and promotable sergeants so that they will have every opportunity to attend.

Primary leadership development courses are conducted at noncommissioned officer academies throughout the Army.

Although sergeants review their records when going before staff sergeant promotion boards, NCOs who have graduated from an accredited leadership course should make sure their diplomas are in their official personnel files. Soldiers can contact their unit First Sergeants or personnel NCOs for more information.

PSYOP MOS

The Army has opened a new enlisted military occupational specialty that gives soldiers in the psychological operations (PSYOP) field more specialized training and a better chance at promotion and

career advancement.

The new PSYOP MOS (96F) was implemented on 1 October 1985 for both active duty and Reserve Component personnel. (Reserve personnel currently account for 76 percent of the Army's PSYOP manpower.)

PSYOP positions were previously filled by soldiers from selected MOSs who had attended the four-week Psychological Operations Course at Fort Bragg and had received the "W" special qualification identifier. But once these soldiers had completed a tour of duty in a PSYOP unit, the identifier was sometimes dropped or replaced, making it difficult to identify course graduates for future PSYOP assignments.

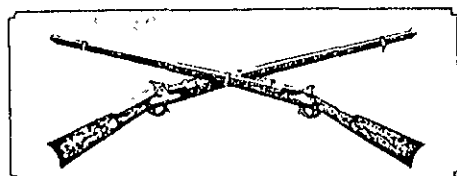
The new MOS is expected to improve the management of personnel and to make better use of training money by reducing the need for retraining soldiers for PSYOP positions.

PSYOP personnel will now receive job-specific training and be able to compete for promotion without having to leave the PSYOP field. Also, they will be competitive with their contemporaries within Career Management Field 96.

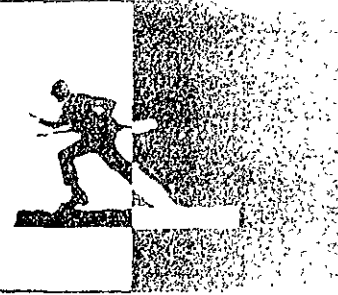
Advanced individual training for the new MOS, as well as higher-level skill training, will be conducted at Fort Bragg and at the U.S. Army Intelligence Center and School at Fort Huachuca, Arizona.

A warrant officer program is also being devised to develop PSYOP technicians for the Active Army and the Reserve Components. And modular training (including supervised on-the-job training and correspondence courses) will allow Reserve Component personnel to become MOS-qualified without having to attend resident courses.

Further information on MOS 96F is available from Commander, U.S. Army John F. Kennedy Special Warfare Center, ATTN: ATSU-SI-DT, Fort Bragg, NC 28307; AUTOVON 236-9172, MSG De Waele.



OFFICERS CAREER NOTES



PHOTOS SWITCHED

In INFANTRY's November-December 1985 issue, photos of the Infantry Branch team at MILPERCEN appear on page 45. Unfortunately, somewhere in the publication process, two of these photos were switched.

The photo labelled "CPT Dan French" is, in fact, that of CPT Frank Wiercinski, and vice versa.

INFANTRY apologizes for the confusion.

FUNCTIONAL AREA BRANCHES

In response to the revised Officer Personnel Management System (OPMS), a Functional Area Management Branch has been formed in each of the Officer Personnel Management Divisions at MILPERCEN. Each of these branches is responsible for certain functional areas as outlined in INFANTRY, November-December 1985, p. 44.

Each officer is invited to call his Functional Area Management Branch for any further information he may need. The following are the AUTOVON telephone numbers for the divisions: Combat Arms Division—221-9846/9623; Combat Support Arms Division—221-0628; Combat Service Support Division—221-8110.

ACCURATE, POSITIVE FILES

Each promotion list that is released again emphasizes several critical measures an officer must take when he is to be considered for promotion.

Voting members on a centralized DA Selection Board evaluate the file of each officer eligible for consideration. The board file actually consists of the Officer Record Brief (ORB); the performance microfiche containing OERs, AERs, and commendatory and disciplinary informa-

tion; any recent documents not yet converted to microfiche; and the hard-copy official photograph. Selection or non-selection of an officer is based primarily upon an appraisal of his overall performance and potential, but each officer can improve his chances by making sure his file contains the most accurate and positive information available.

The following are some general guidelines for an officer who is eligible for consideration by a promotion board:

- Have a recent high quality official photograph on file in Infantry Branch. This photograph should show current rank, present a neat appearance, and adhere to the requirements of AR 640-30.

- Provide an updated copy of his Officer Record Brief to the appropriate MILPO for forwarding to the board. ORBs are normally mailed to officers being considered by a promotion board 60 to 90 days before the convening date. This ORB must reflect accurate information, emphasizing areas that frequently change, such as assignment history, weight, physical profiles, military education level, civilian education level, and military awards. The officer must sign the "remarks" section confirming the validity of the information.

- Forward critical information, such as completion of non-resident CGSC, to MILPERCEN as far in advance of the convening date as possible to allow timely posting. In cases where a course is completed just before the board is to convene, the officer should provide Infantry Branch with the official date of completion as soon as possible.

In addition, each officer being considered by a selection board has the option of writing a letter to the president of the board, detailing information he feels is pertinent to his official file. This letter will normally accompany the officer's board file and will be seen by each voting member. A letter to the president should be written only when information of true

significance is not already in the board file.

Copies of OERs should not be sent; only the official copies processed by MILPERCEN will be seen by the board.

Selection boards carefully consider the entire file of each officer who is eligible for promotion. Attention to these guidelines will help ensure that the board actually evaluates an officer on the basis of the most timely and positive information.

INSTRUCTOR VOLUNTEERS

The United States Military Academy routinely needs officers to fill a variety of instructor positions in all academic fields and the military sciences, and positions as tactical officers. Ideally, instructors should include a half and half mix of West Point graduates and ROTC or OCS graduates with varied backgrounds and academic disciplines.

Volunteers for instructor positions must be branch qualified, must have demonstrated outstanding performance within their branch, and must have the capability of obtaining an advanced degree in their particular field of study.

Any officer who is interested in applying for instructor positions should contact both the Academy (AUTOVON 688-3212/3877) and his Infantry Branch assignment officer at MILPERCEN.

Applicants should make sure they have current photos, undergraduate college transcripts, and recent Graduate Record Examination test scores on file at Infantry Branch. Point of contact at Infantry Branch is Captain Dan French — AUTOVON 221-7823/0317.

FOREIGN AREA OFFICERS

The Foreign Area Officer (FAO) Enhancement Plan is intended to improve the quality of the officers who participate

in the FAO career field. To ensure that officers entering this field have enough time for professional development, those who wish to do so may request this functional area (FA 48) in advance of the normal designation process for their year group.

FA 48 includes positions in which officers can apply regional expertise, language skills, knowledge of U.S. and foreign political-military relationships, and professional military skills and knowledge in key Army and Department of Defense positions.

Training in the FAO program includes the FAO course, language training, graduate schooling, and in-country study. All training is oriented toward the officer's designated geographic area. Possible areas include Africa south of the Sahara, Western Europe, Russia and Eastern Europe, the Middle East and North Africa, Latin America, China, Northeast Asia, South Asia, and Southeast Asia.

All officers interested in participating in the FAO field should submit their applications to U.S. Army MILPERCEN, ATTN: DAPC-OPA-C (MAJ Kensingler), 200 Stovall St., Alexandria, VA 22332-0400. Applications should include branch qualification, current DLAB score or language proficiency, BA/BS subject area, Graduate Record Examination composite scores, and a priority list of geographic areas of interest.

GRADUATE DEGREES

Many Army officers ask, "Do I need a graduate degree, and if I do, how do I get one?"

The answer is that some specialties and many specific assignments require graduate degrees, especially at the rank of lieutenant colonel and above. Requisitions for officers at MILPERCEN frequently specify graduate degrees for certain functional areas: Comptroller (45), Foreign Area Officer (48), Operations Research/Systems Analysis (49), Research and Development (51), Systems Automation (53), and Procurement (97). Some highly technical areas such as scientific research specify graduate degrees in the hard sciences.

If a graduate degree is in his plans, an officer managed by MILPERCEN may take advantage of several Army-sponsored programs:

Fully-Funded Advanced Civil Schooling (ACS). Officers who are available for reassignment during Fiscal Year 1986, are branch qualified, and have strong academic records are encouraged to apply for ACS. Professional competence and previous academic performance are considered in the selection process, and only the best qualified officers are selected. If an officer has been accepted by a highly accredited school before applying, his chances for selection are better.

Interested officers should take the Graduate Record Exam or the Graduate Management Admission Test, then submit applications on DA Form 1618-R with copies of their college transcripts.

After these officers complete their graduate studies, they must serve three years in positions identified for their disciplines and grades by the Army Educational Requirements Board (AERB).

U.S. Military Academy Instructor Program. MILPERCEN sends officers to the USMA instructor program, which includes fully-funded ACS and follow-on duty as instructors at West Point. The prerequisites are the same as for any other fully funded ACS. Officers may apply for branch approval for this program at any time.

Cooperative Degree Program (CO-OP). The Logistics Executive Development Course (LEDC), Command and General Staff College (CGSC), and Army War College (AWC) have COOP. Under this program, colleges give partial credit toward a graduate degree for completion of particular military schools.

Students in this program may remain on a post or be reassigned to another location to complete the remainder of the degree on a full-time basis, usually six months.

Officers pay all tuition and related costs. The GI Bill or Veterans Educational Assistance Program (VEAP) may be used to fund the education, and the Army pays the permanent change of station (PCS) costs.

Officers can apply for COOP when

they request or are slated for LEDC or resident CGSC or AWC, six to 12 months before the start of the military course.

Degree Completion Program (DCP). If an officer can be accepted by a school to complete an appropriate degree within about one year, that officer may qualify for DCP. Officers in the program pay all tuition and other related costs. The GI Bill or VEAP may be used to fund the education. The Army pays the PCS costs, but officers who can complete a degree in less than 20 weeks can be authorized permissive temporary duty rather than PCS.

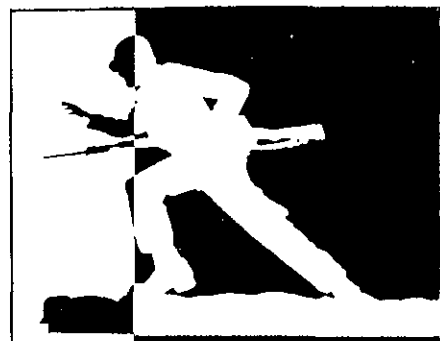
Officers must apply by letter for a DCP. The application must include a letter of acceptance from the school indicating the inclusive dates of attendance.

Off Duty Schooling. Most officers who complete graduate degrees do so on their own time.

Assignment officers may be able to help them get assignments that will make it easier to get a degree, such as tours as ROTC instructors. Or an officer may be able to stay where he is for a longer than normal period. The GI Bill, VEAP, or tuition assistance may be used to help fund the education.

Officers should be aware of two provisions when they complete their graduate degrees. When they go to school full time, they must remain on active duty for three times the length of time spent in school, but not more than six years. Those who attend full time for more than 26 weeks are required to complete three-year AERB utilization tours.

Publications that rate graduate programs at colleges and universities can normally be found at public libraries. Local education offices can also provide information for officers interested in graduate degrees.



REVIEWS



The Avery Publishing Group (Wayne, New Jersey) has sent us the first two books in its new *West Point Military History Series*:

• **DEFINITIONS AND DOCTRINE OF THE MILITARY ART, PAST AND PRESENT**, by Lieutenant Colonel John I. Alger (1985. 234 Pages. \$18.00, Softbound). The ten chapters of this volume contain definitions or discussions of over 2,500 terms and concepts that are a part of the military vocabulary. Some of the terms can be found in current military doctrine, but some cannot. The author, a former instructor at West Point who is now stationed in the Washington, D.C., area, feels that all of them are important "to the understanding of the military past and present." The first two chapters examine the fundamental principles that underlie the military art. The next seven survey the major periods of military history. The final chapter reviews some of the fundamental concepts and offers a few considerations on future warfare. The publisher claims that this book "is an essential guide for anyone seriously interested in the study of military history." We agree.

• **THE WARS OF NAPOLEON**, by Colonel (Retired) Albert S. Britt III (1985. 204 Pages. \$18.00, Softbound). This is a fine study of Napoleon Bonaparte's attempt to unite all of Europe under his rule. It is, in short, a study of the rise and fall of his "empire," and of the costs to all sides—nearly one million men died in less than 25 years—of his drive for power. The author is also a former instructor at the Military Academy, and in this book discusses not only the battles and campaigns but also Napoleon's generalship and his strategy, and points out that, indeed, the great military leader did have warts.

Both of these books were produced under the general editorship of Colonel (Retired) Thomas E. Griess, who served as head of West Point's history depart-

ment for 14 years.

We have also received a large number of interesting and informative reference books. Here are some of the ones we think all infantrymen should be aware of:

• **WORLD WAR II, THE EUROPEAN AND MEDITERRANEAN THEATERS: AN ANNOTATED BIBLIOGRAPHY**, by Myron J. Smith, Jr. (Garland Publishing Company, 1984. 450 Pages. \$49.00). This is the second in the publisher's series titled *Wars of the United States*. It contains some 3,000 annotated entries that cite English-language books, monographs, articles, official documents, papers, dissertations, theses, and 16mm documentary films. The book is organized in six broad subject areas and then subdivided by subject. It also has author and subject indexes.

• **CAVALRY REGIMENTS OF THE UNITED STATES ARMY**, by James A. Sawicki (Wyvern Publications, 1985. 415 Pages. \$25.00). This is the author's fourth entry into the lineage field. His previous work traced the lineages and honors of our infantry regiments, field artillery battalions (in two volumes), and tank battalions. This one matches his previous attempts on all counts — it is authoritative, complete, factual, and comprehensive, probably the most comprehensive publication of its kind ever to appear in print. The first 149 pages give a historical account of the cavalry from its beginning to the present time. Most of the remainder of the volume documents the history, heraldry, and honors of the 133 regiments of horse, mechanized, air, airmobile, and armored cavalry that have been a part of the United States Army. The book ends with three appendixes, a select bibliography, and an index.

• **RED ARMY ORDER OF BATTLE IN THE GREAT PATRIOTIC WAR, INCLUDING DATA FROM 1919 TO THE PRESENT**, by Albert Z. Conner and Robert G. Poirier (Presidio Press,

1985. 408 Pages. \$22.50). The authors have consulted many primary and secondary sources to detail the combat histories of the fully mobilized Soviet Army. The order of battle itself is arranged in army, corps, and division sections. Each part introduces the type of information and then lists the records of specific units in numerical order. All honors, honorifics, and awards are also shown.

• **HITLER'S LEGIONS: THE GERMAN ORDER OF BATTLE, WORLD WAR II**, by Samuel W. Mitcham, Jr. (Stein and Day, 1985. 540 Pages. \$20.00). The author has written three books on German Field Marshal Erwin Rommel. In this book he gives the organizational and technical aspects of infantry, panzer, panzergrenadier, mountain, airborne, jaeger, and light divisions, as well as security, Luftwaffe field, and Waffen-SS units, and a number of miscellaneous units in the service of Nazi Germany. The book also contains summaries of the important activities of each of the German corps, armies, and army groups.

• **A GUIDE TO THE REGIMENTS AND CORPS OF THE BRITISH ARMY ON THE REGULAR ESTABLISHMENT**, by J. M. Brereton (Merrimack, 1985. 272 Pages. \$16.95). This book presents a complete order of battle of all of the components of today's British Army and traces the parentage of the regiments and corps to their original ancestors. Where applicable, each entry includes the date of raising, successive titles, battle honors, motto, uniform details, regimental marches, regimental journal, regimental headquarters, regimental museum, and nicknames.

• **A DICTIONARY OF EUROPEAN LAND BATTLES FROM THE EARLIEST TIMES TO 1945**, by John Sweetman (Macmillan, 1985. 309 Pages. \$19.95). This is a handy and most useful guide to who fought, won, and lost, and how it all happened in more than 2,400

BOOK REVIEWS

battles from Marathon in 470 B.C. to Berlin in 1945. The book also includes an index of the battles arranged by the wars in which they occurred, and another index that contains the names of the hundreds of key figures mentioned in the book.

• **GREAT BATTLEFIELDS OF THE WORLD**, by John Macdonald (Macmillan, 1985. 200 Pages. \$35.00). This is a unique and beautiful book in which the publisher uses computer graphics to create two-dimensional maps and three-dimensional graphic models of battlefields on which expert illustrators have overlaid all the details of battle information. These nicely complement the author's narrative, which is highly readable and informative. Thirty battlefields are depicted and the battles on them explained. The book also has biographies of the principal commanders, location maps for each battlefield, and information on how to visit the most accessible sites.

• **THE OXFORD BOOK OF MILITARY ANECDOTES**, edited by Max Hastings (Oxford University Press, 1985. 514 Pages. \$17.95). Here is a collection of vivid accounts of war and warfare culled from a wide variety of sources by a noted war correspondent and military historian. The collection is concerned primarily with British and U.S. conflicts, although other military forces are represented. Max Hastings has tried to emphasize the human experience, and he has succeeded.

• **THE WORLD FACTBOOK 1985** (U.S. Government Printing Office, May 1985. S/N 041-015-00159-1. 274 Pages. 13 Maps. \$14.00, Softbound). Produced annually by the Directorate of Intelligence, Central Intelligence Agency, this factbook includes data on all of the countries of the world. Some of the countries and governments that are included are not fully independent, and others are not officially recognized by the U.S. Government. The individual entries range from "Abu Dhabi" to "West Bank" and "Gaza Strip." Five appendixes and thirteen maps add to the publication's reference value.

• **THE SECRETARIES OF DEFENSE: A BRIEF HISTORY, 1947-1985**, by Roger R. Trask (U.S. Govern-

ment Printing Office, 1985. 75 Pages. S/N 008-001-00147-9. \$3.00, Softbound). The author describes the evolution of the office of U.S. Secretary of Defense and its major activities, policies, and programs through the careers of the 15 men who have served as secretary since 1947. Six appendixes add much other useful material, including a number of organizational charts and a description of the department's seal.

• **MILITARY INTELLIGENCE, THE FIRST HUNDRED YEARS**, by John Patrick Finnegan (U.S. Government Printing Office, 1985. 187 Pages. S/N 008-020-01010-3. \$7.00, Softbound). Last year marked the 100th anniversary of the establishment of military intelligence in the United States Army. This book consists of hundreds of selected photographs to show each of the major intelligence and security disciplines and, at the same time, the continuity of intelligence functions during those years. The selection includes photographs of military and related civilian intelligence operations, POW interrogations during wartime, and cryptographic devices. The text traces the development of military intelligence and its transformation into a recognized professional discipline within the Army. This is an ideal introduction to military intelligence as it was and as it is.

• **ARMY TRIVIA**, by Colonel Edward J. Burke (Quinlan Press, 1985. 182 Pages. \$7.95, Softbound). The author is a serving Army officer and in this book offers a reader several hundred questions dealing with wars, personalities, army lore, photographs, and army history, and several hundred more of a general nature. For example, "What was Operation Bluehearts?" "What was a T-5?" "Name the only two World War II unnumbered divisions." Don't worry, the answers to all of the questions are at the back of the book.

• **FORMATION BADGES OF WORLD WAR II: BRITAIN, COMMONWEALTH, AND EMPIRE**, by Lieutenant Colonel Howard N. Cole (Sterling, 1985. 192 Pages. \$14.95). This book has been recognized as the standard reference on the subject. It first appeared under a different title in 1946, but has been out of print for more than ten years.

It was never published in the United States. The author, for many years the president of the British Military Heraldry Society, describes and illustrates every formation badge and sign involved in World War II — more than 500 all told — and gives the reasons for each design and its adoption. He also lists the details of the different campaigns, theaters of operation, and garrisons in which the formations served. He includes descriptions of a few formation badges from U.S. units and from other Allied forces, a descriptive index of the badges, and an index of formations.

• **U.S. SMALL ARMS OF WORLD WAR II: A GUIDE FOR THE COLLECTOR, SHOOTER, AND HISTORIAN**, by Howard R. Crouch (SCS Publications, 1984. 225 Pages. \$19.50, Softbound). This very useful reference book is divided into three major parts, the first and major one of which is titled "design, battle performance, and collector's data." The second part is aimed at the collector only, while the third part contains some useful reference data and a bibliography. The author has included a discussion of submachine guns, but not of machineguns; he feels collectors should steer clear of them unless they have an important reason for doing otherwise. The book does contain numerous photographs, most of them of great historical interest, and four personal accounts from individuals who were involved either in developing our small arms or in using them in active combat during the war.

Here are a number of our longer reviews:

GENTLE KNIGHT: THE LIFE AND TIMES OF MAJOR GENERAL EDWIN FORREST HARDING. By Leslie Anders (The Kent State University Press, 1985. 384 Pages. \$27.50). Reviewed by Colonel Rolfe L. Hillman, Jr., United States Army, Retired.

Here is the career of a capable, ambitious, front-running professional infantryman, a career that spanned his active duty from West Point graduation in 1909 until retirement as a major general in 1946 and on through the gentility of hometown honors and adulation. The shattering World War II climax of Harding's career has been told many times

before; this is the scholarly and engrossing full biography that provides the perspective.

What does the professional infantryman want to make of his years? He learns early that to stay the course he must acquire a proper set of qualifications and experiences. He wants to hit the lists for successive levels of service schooling, and may want to instruct at those same schools. He outdoes himself to give his best for respected seniors, for he wants his capabilities to be recognized and remembered, and that is entirely as it should be. As he rises in rank, he makes every effort to bring near him those junior officers and enlisted soldiers who strike him as "comers." He may also see the professional rewards of writing for publication.

But at the heart of this matter of managing one's own career to the extent possible (and if that's "ticket-punching," so be it), he knows that all is likely to go for naught if he has not checked off command of troops at each level. If he can reach the semi-summit of commanding a combat division, and if he can do it well, he has opened all doors.

Forrest Harding in his early career did all these things, and he did them with a rare depth of intellect and a full-speed personal flair, activating people and events. He held battalion command and related duties in the fabled 15th "Can Do" Infantry Regiment in Tientsin for nearly four years, beginning in November 1923. For more than two of those years he was under the eye of Lieutenant Colonel George C. Marshall, the acting regimental commander.

Harding came back to Benning's advanced course in the summer of 1927 to find the same George Marshall arriving

Assistant Commandant two months later. For about five of the next six years Harding was under the Marshall wing, without doubt having his name added to Marshall's well-known little black book of talented juniors.

He edited the forerunner of INFANTRY magazine under the title *The Infantry School News*, put the associated *Infantry School Mailing List* on the professional map, and after graduating from the Army War College in 1934 went on to high acclaim by gaining professional

respect and international note for the *Infantry Journal*, a forerunner of the current *Army* magazine.

The year 1938 found promotions loosening up, and Harding acquired his eagles after 29 years of service. He also received a choice assignment — command of the 27th Infantry Regiment in Hawaii.

Next, the fine hand of George Marshall, who had become Chief of Staff in September 1939, is apparent in Harding's promotion to brigadier general in October 1940. Harding spent an intense year of pre-war training and maneuvers as assistant division commander of the 9th Infantry Division at Fort Bragg and then assumed command of the 32d Infantry Division. His two stars were in place in February 1942, and by mid-May the 32d had closed in Australia. Forrest Harding had arrived at his semi-summit of division command in wartime. (Charles Dickens said it just right: "It was the best of times, it was the worst of times.")

In August 1942, eight months after Pearl Harbor, Marine Corps units began landing on Guadalcanal. The first of the offensives in the south Pacific opened with the September advance of Douglas MacArthur's U.S. Army-Australian Army on Buna, New Guinea — the Papuan campaign. In this arena, in late November and while pushing two of his regiments through a jungle nightmare of ground operations, Harding became the exact focus of MacArthur's displeasure.

It is the central, pulverizing fact of this career and this biography that Harding was forthwith relieved of his hard-won command. In a survey of similar incidents (see *Army*, 1971), historian Martin Blumenson rates the event as "one of the most curious and celebrated incidents, illustrating how the chain of command was bypassed."

Somehow, Anders has avoided what must have been a great urge to make this biography a polemic of defense instead of the full account of a long and useful life. Others have been more blunt and vehement, even if at less length. Anders is objective to the point that a reader can infer some of Harding's vulnerabilities, especially in the retrospective views of some of Harding's peers that he may have lacked a ruthlessness seen as a re-

quirement for combat command, that he may have been too tolerant of poor performance.

Anders concludes, however, that "faced with making his juniors scapegoats or becoming a scapegoat himself, Harding chose the latter and stepped resolutely into the twilight." He believes that any student of the affair "comes away oppressed with the tragic injustices done Forrest Harding and his Red Arrowmen."

The author is a professor of history at Central Missouri State University. He served in a World War II infantry division and has been a historian in the office of the Chief of Engineers. We must be grateful that he has developed Harding's career in such understanding detail. Unfortunately, a reader will find some difficulty in a style that makes it hard to fix a date readily and in a system of footnoting that is downright irritating when he needs to know for sure who said or wrote what. (Another tragic injustice is that the publisher has found it necessary to hang a price of \$27.50 on the book.)

It seems safe to say, though, that a reader will take from this book the impressions that best fit his personal experience and his view of the history of, as Anders puts it, "that 'Old Army' which vanished forever in the thunderous years of World War II."

MANEUVER WARFARE HANDBOOK. By William S. Lind (Westview, 1985. 133 Pages). Reviewed by Captain Thomas M. Jordan, United States Army.

Although written primarily for Marines, this book can also greatly expand a junior Army officer's understanding of the essence of maneuver warfare.

Essentially, William Lind provides valuable insight into the development of maneuver warfare theory. He contrasts maneuver warfare and attrition tactics and further discusses the characteristics of a maneuver-oriented organization. He does this in a crisp, concise style. Much to his credit, he provides historical examples that do much to improve a reader's understanding of what he is trying to say.

Of particular interest to the infantryman is Lind's discussion of the con-

cept of the commander's intent. He correctly views this concept as being the commander's long-term vision of what he wants to have happen to the enemy, or the final result he wants. Lind's discussion of mission orders along with examples not only clarifies the concept but also demonstrates how orders should be communicated.

Lind recognizes the need to train junior leaders in a manner that will enable a unit to conduct maneuver warfare. His suggestions for doing so are valid and unquestionably necessary if we expect to fight according to our AirLand Battle doctrine.

This book is intended to provide a basic understanding of maneuver warfare theory and certain fundamental tactical principles. It certainly accomplishes that purpose. Despite its Marine orientation, Lind's book is recommended to all company and field grade Infantry officers.

THE GREAT RIFLE CONTROVERSY: A SEARCH FOR THE ULTIMATE INFANTRY WEAPON FROM WORLD WAR II THROUGH VIETNAM AND BEYOND. By Edward C. Ezell (Stackpole Books, 1984. 368 Pages. \$29.95). Reviewed by Major C. O. Shanahan, Jr., United States Army, Retired.

The development, adoption, and large-scale fielding of the M1 rifle took almost 17 years, that of the M14 rifle about 16 years, and that of the M16A1 rifle approximately 10 years (although three or four of those years were ones in which the AR15/M16 rifle was in limbo as far as the Army was concerned). If a person wonders why it took so long to develop and field these rifles, Edward Ezell's book will provide most of the answers.

The title of the book could well have been *The Great Rifle Controversies*, because most of the rifles adopted by our Army since World War I have been surrounded by varying degrees of controversy. (The recently developed M16A2 rifle, however, has been relatively free of controversy to this point.)

This book is very informative, well written, and extensively documented. The author is well known in small arms weapons circles as a writer and a

historian. He is eminently qualified to write about military rifles. Ezell details the controversies, failures, frustrations, problems, and successes in the development, management and mismanagement, testing, adoption, and fielding of U.S. military rifles and related items since 1945. For example, the book covers the recent adoption of the 5.56mm squad light machinegun, which is called the SAW (for squad automatic weapon). "SAW" is a euphemism used in an attempt to disguise the fact that the weapon is a belt-fed machinegun and not a magazine-fed automatic rifle.

Of considerable interest, too, is Ezell's account of the 1978-1979 NATO small arms systems trials, which were unique in their scope and conduct in that they consisted of both technical and field testing of a variety of small arms systems. And the results of the ammunition trials had a significant effect on the characteristics of both the M16A2 and the SAW in this country.

In his foreword, Eugene (Gene) Stoner, the designer of the AR15/M16 rifle series, writes that "this book should be required reading for those who make decisions about small caliber weapons development." He points out that the institutional problems that have plagued the development of the M14 and M16 rifles have not been entirely eliminated. This is an understatement.

Stoner goes on to say that "by studying this history we might just be able to keep from making some of the same mistakes over again in the future." The history of small arms development in this country and its current status does not lead one to be overly optimistic about this advice.

This is the best single-volume history of the development of military rifles in this country this reviewer has read. All military and civilian personnel who have responsibility for the development and direction of military small arms projects can profit from studying it. It should also prove of keen interest to the non-professional who is interested in military small arms.

EDITOR'S NOTE: The reviewer was a small arms test officer on the Infantry Board from 1957 to 1961, and a small arms test equipment specialist with the

Board from 1965 to 1983. He knew and was associated with many of the personalities and events of the period covered by this book.)

SURRENDER AND SURVIVAL: THE EXPERIENCE OF AMERICAN POWs IN THE PACIFIC, 1941-1945. By E. Bartlett Kerr (William Morrow, 1985. 356 Pages. \$18.95). Reviewed by Edward J. Drea, U.S. Army Military History Institute.

Few soldiers dwell on the prospect of spending months or years as a prisoner of war. Nevertheless, it is worthwhile for them to have an awareness of how men act and react in extreme circumstances. This book offers such an insight to the conditions of captivity through a general survey of the diverse experiences of U.S. military and civilian personnel who were held as prisoners of war by the Imperial Japanese forces.

The genuine relief that usually accompanies the return of former captives to their homes and families often sweeps aside the harshness of the POW experience. It is sobering, then, to recall the fact that more than 40 percent of all U.S. prisoners of war of the Japanese — 10,650 — never came home.

Although his father died in the Philippines during Japanese captivity, Kerr maintains his impartiality and objectivity when describing the POW experiences. At heart he believes that traditional Japanese frugality and strict adherence to orders were the chief reasons for the squalid prison camp conditions that brought suffering and death to so many Americans. His underlying theme, however, is the inconsistent manner in which the Japanese treated their POWs. One wonders whether this inconsistency resulted from a cultural gulf, an individual aberration, or an expression of the contradictions of Japanese interacting with non-Japanese.

Kerr's survey tells the reader what happened, but not why it happened. Why, for instance, did one Japanese officer behead American prisoners while another, for a more serious offense, simply reduced their rations?

This book provides a place to begin to

answer such questions. Surely this generally well-written overview is a testament to the incredible resilience of the human spirit to endure and survive the worst indignities that other men can inflict. On the darker side, it is still worth asking today why those other men were capable of committing those atrocities.

MOUNTAIN WARFARE IN EUROPE. By Gerhard Schepe (National Security Series No. 2/83. Center for International Relations, Queen's University, Kingston, Canada, 1983. 101 Pages). Reviewed by Major Scott R. McMichael, Combat Studies Institute, USACGSC.

The author of this study, Major Gerhard Schepe, has served eleven years with the 1st German Mountain Division. He wrote this study while assigned from 1982-1983 as a Visiting Defense Fellow at the Center for International Relations at Canada's Queen's University. Thus, he has been able to couple personal experience with scholarly research into mountain warfare.

Schepe observes early in his study that mountain warfare is of relatively recent vintage, and that except for Hannibal's crossing of the Alps in 218 B.C., no significant military operation in mountains occurred in Europe until the 18th century. The Soviet invasion of

Afghanistan has served to renew interest in this field of operation.

The author describes the basic influences of terrain, climate, and weather on mountain warfare, dwelling on Clausewitz's determination that a strategic defense based in the mountains is likely to suffer defeat because of the lack of defensive mobility. Schepe notes, though, that the modern helicopter has altered the picture substantially, perhaps nullifying Clausewitz's objection. In fact, Schepe devotes an entire chapter to the use of helicopters in mountain warfare.

In his conclusions, Schepe makes several important points. He feels that in NATO's overall theater strategy, mountain operations as such occupy a relatively minor role. Nevertheless, he is concerned about the lack of a common European theory of mountain warfare. To Schepe, the helicopter increases the pace, scope, depth, and defensive value of mountain operations, from which he determines that airmobile forces are best used in mountains.

As in any short work, there are a number of gaps. For example, there is no mention of the use of pack trains or of the important issue of mountain logistics. Still, given its modest length and limited scope, it can serve as a fine primer on the subject and is an excellent place to begin a further investigation into mountain warfare.

U.S. Army personnel who might find themselves committed to mountain operations would do well to devote the time needed to digest this excellent study.

CASSINO, THE HOLLOW VICTORY. By John Ellis (McGraw-Hill, 1984. 478 Pages. \$19.95).

MONTE CASSINO. By David Hapgood and David Richardson (Congdon and Weed, 1984. 244 Pages. \$17.95).

Both books reviewed by Captain Anthony R. Garrett, United States Army.

As the Italian campaign of World War II receives increased attention, it is only natural that the struggle for Monte Cassino should come to epitomize the entire campaign.

In his book, John Ellis effectively analyzes the major battles of the campaign that culminated in the capture of Rome by the U.S. Fifth Army. He develops the personalities of the main Allied commanders — Clark, Alexander, Juin, and Freyberg — and points out that the Allied peculiarities and indecisions resulted in a considerable amount of frustration for the subordinate commanders and soldiers.

Ellis, a British author, narrates each separate battle and uses interviews and personal diaries to illustrate the futility and the errors that plagued the campaign. He also addresses in detail the

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BOOK REVIEWS

geographical obstacles that proved to be more formidable than the German defenders, and how the Allied commanders at all levels often failed to consider the terrain when they planned their operations.

The book by David Hapgood and David Richardson is far different in approach. Their main story revolves around the events that led to the Allied decision to bomb the Benedictine Abbey of Monte Cassino. While not addressing the tactical situation in detail, the authors do raise certain questions about the need for bombing the Abbey.

The authors tell their story effectively and with enough suspense to hold the reader's interest. Unfortunately for U.S. and British readers, the most sympathetic characters in the book are the Germans whose initiative saved many priceless artistic treasures from the bombing.

RECENT AND RECOMMENDED

BRENNAN'S WAR: VIETNAM, 1965-69. By Matthew Brennan. Presidio Press, 1985. 275 Pages. \$17.95.

INDIA: LABYRINTHS IN THE LOTUS LAND. By Sasthi Brata. Morrow, 1985. 336 Pages. \$19.95.

FRENCH FOREIGN LEGION PARATROOPS. By Martin Windrow and Wayne Braby. Illustrated by Kevin Lyles. Elite Series 6. Osprey, 1985. 64 Pages. \$9.95, Softbound.

SOVIET BLOC ELITE FORCES. By Steven J. Zaloga. Illustrated by Ron Volstad. Elite Series

5. Osprey, 1985. 64 Pages. \$9.95, Softbound.
AFRIKA KORPS. By George Balin. Tanks Illustrated 17. Sterling, 1985. 64 Pages. \$5.95, Softbound.

OPERATION BARBAROSSA. By Steven J. Zaloga and James Grandsen. Sterling, 1985. Tanks Illustrated 16. 64 Pages. \$5.95, Softbound.
SOVIET ARMY UNIFORMS IN WORLD WAR II. By Steven J. Zaloga. Uniforms Illustrated 9. Sterling, 1985. 64 Pages. \$5.95, Softbound.

ARMIES IN LEBANON, 1982-84. By Samuel M. Katz and Lee E. Russell. Color Plates by Ron Volstad. Men-at-Arms Series 165. Osprey, 1985. 48 Pages. \$7.95, Softbound.

THE AMERICANS PLAINS INDIANS. By Jason Hook. Color Plates by Richard Hook. Men-at-Arms Series 163. Osprey, 1985. 48 Pages. \$7.95, Softbound.

PRUSSIAN CAVALRY OF THE NAPOLEONIC WARS (I): 1792-1807. By Peter Hofschroer. Color Plates by Bryan Fosten. Men-at-Arms Series 162. Osprey, 1985. 48 Pages. \$7.95, Softbound.

THE CANADIAN ARMY AT WAR. Text and color plates by Mike Chappell. Men-at-Arms Series 164. Osprey, 1985. 48 Pages. \$7.95, Softbound.

UNIFORMS OF THE AMERICAN CIVIL WAR. By Philip Haythornthwaite. Illustrated by Michael Chappell. Blandford Color Series. Sterling, 1985. 192 Pages. \$6.95, Softbound.

UNIFORMS OF THE NAPOLEONIC WARS, 1796-1814. By Philip J. Haythornthwaite. Illustrated by Jack Cassin-Scott. Blandford Color Series. Sterling, 1985. 195 Pages. \$12.95.

UNIFORMS OF THE AMERICAN REVOLUTION. By John Mollo. Illustrated by Malcolm

McGregor. Blandford Color Series. Sterling, 1985. 228 Pages. \$6.95, Softbound.
UNIFORMS OF THE SOLDIERS OF FORTUNE. By Leroy Thompson. Illustrated by Ken MacSwan. Blandford Color Series. Sterling, 1985. 159 Pages. \$12.95.

THE SOVIET UNION: WHAT LIES AHEAD? MILITARY-POLITICAL AFFAIRS IN THE 1980s. Edited by Major Kenneth M. Currie and Major Gregory Varhall. Published under the auspices of the United States Air Force. Government Printing Office, 1985. S/N 008-070-00559-0. 800 Pages. \$18.00, Softbound.

THE UNITED STATES AIR FORCE IN SOUTHEAST ASIA, 1961-1973: AN ILLUSTRATED ACCOUNT. Edited by Carl Berger. Government Printing Office, 1984. S/N 008-070-00516-6. 408 Pages. \$14.00.

MILITARY. A magazine published monthly by the MHR Publishing Corporation, 2122 28th Street, Sacramento, CA 95818. \$10.00 for one year.

1985-86 CONGRESSIONAL DIRECTORY. Government Printing Office, 1985. S/N 052-070-05994-0. \$13.00, Softbound.

THE EFFECTS OF NUCLEAR WEAPONS. Edited by Samuel Glasstone and Philip J. Dolan. 1984 Reprint of 1977 Edition. Government Printing Office, 1984. S/N 008-046-00093-0. 668 Pages. \$17.00

TREATIES IN FORCE. U.S. Department of State. Government Printing Office, 1985. S/N 004-000-02048-3. 352 Pages. \$9.00, Softbound.

CRUSADE IN NUREMBERG: MILITARY OCCUPATION, 1945-1949. By Boyd L. Dastrup. Contributions in Military History 47. Greenwood Press, 1985. 159 Pages. \$27.50.

POLAND IN THE SECOND WORLD WAR. By Jozef Garlinski. Hippocrene Books, 1985. 387 Pages. \$25.00.

THE HORSEMEN OF THE STEPPES. By Albert Seaton. Hippocrene Books, 1985. 251 Pages. \$22.50.

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From The Editor

1986 INFANTRY CONFERENCE

The 1986 Infantry Conference will be held at Fort Benning during the period 8-10 April 1986. All members of the Infantry Association are invited to attend. Many of the sessions will be open to all attendees, and there will be enough space at these open sessions to accommodate all who want to attend them. A formal agenda is now being developed.

Infantry Association members who would like to come to the Conference are asked to contact the editor of INFANTRY as soon as possible. They will be sent copies of the formal agenda (when it is available) and information on housing, as well as other general information.

SWAP SHOP

Some years ago – in the late 1960s – a popular feature in INFANTRY was the Doughboy Swap Shop, through which infantrymen everywhere shared practical ideas that they had used successfully in doing their jobs.

With this issue, we are reviving this idea and calling it, simply, Swap Shop (see pages 11 and 26). These short items will be used as fillers whenever we have room for them – or occasionally we may have to make room for one.

If you have an idea you want to share with your fellow infantrymen, send it in. And if you need a good idea, this may be the place to watch for one.

