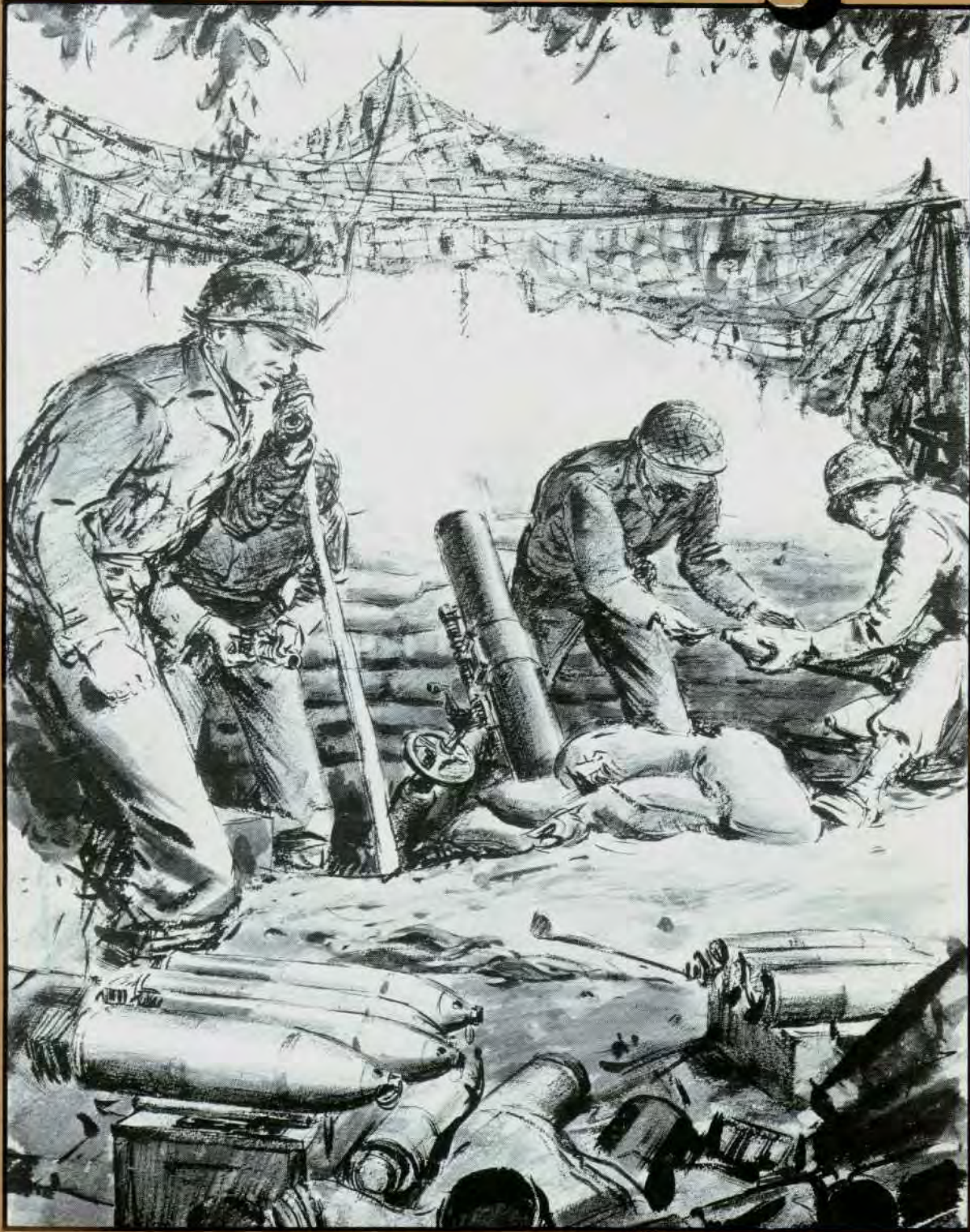


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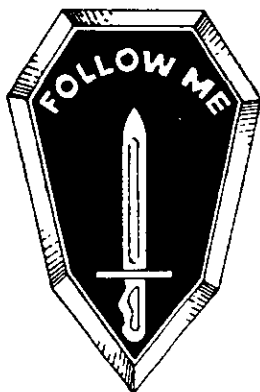
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FRONT COVER: 4.2-inch mortar in action, Europe, October 1944, by John Scott. Courtesy, U.S. Army Center of Military History.

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Commandant's NOTE

MAJOR GENERAL CARMEN J. CAVEZZA, Chief of Infantry

BRADLEY FIGHTING VEHICLE UPDATE

The Infantry School's continuing effort to provide logical, efficient, and descriptive strategies for weapon systems and unit training is producing several outstanding training products. Too, the demanding training programs that result from this effort will help our units reach and sustain the highest levels of combat readiness.

We have just put the finishing touches on the revised Field Manual (FM) 23-1, Bradley Fighting Vehicle (BFV) Gunnery, which is the cornerstone training product for the heavy Infantry force. This manual, which is scheduled to be in the field in the third quarter of Fiscal Year 1991, provides a comprehensive unit training strategy that integrates mounted and dismounted training.

The manual incorporates the use of several materiel developments that will significantly improve a BFV unit commander's ability to train and employ the fighting vehicle system. The development of M910 training practice discarding sabot-tracer (TPDS-T) rounds is one example. These rounds will allow units that are constrained from firing armor piercing service ammunition to train their gunners on the important ammunition selection and "switchology" skills.

The M910 is ballistically matched to the M791 armor piercing discarding sabot-tracer (APDS-T). The manual lists the ballistic characteristics and surface danger area information for this new ammunition and uses this data to update the gunnery tables.

At the same time, the Infantry School continues to support the development of M919 armor piercing, fin stabilized discarding sabot-tracer (APFSDS-T) combat ammunition. The M919,

whose characteristics are also shown in the gunnery manual, will significantly increase the BFV's ability to destroy enemy light armored vehicles. We are also developing M910E1 training ammunition that will match the M919's characteristics.

Another BFV product improvement now in the field is an integrated sight unit with an air defense reticle. Chapter 7 of FM 23-1 discusses air defense and the use of the new reticle, and air defense engagements have been added to the gunnery training and qualification tables. This training method matches the doctrinal concepts outlined in FM 7-7J for engaging enemy helicopters when passive air defense measures fail—shoot them immediately.

To sustain air defense training in units, the air defense reticle, along with the training exercises, have also been added to the conduct of fire trainer (COFT) and the video interactive gunnery system (VIGS).

One of the Infantry training strategy goals that I discussed in an earlier issue of *INFANTRY* (September-October 1990, pages 1-2) was to identify training shortcomings and develop some possible remedies. The revised FM 23-1 accomplishes this goal for several BFV training problems that have been identified at the combat training centers (CTCs).

No one graduates from the Primary Leadership Development Course or from any Infantry Basic or Advanced Noncommissioned Officer Course who cannot properly complete a range card. Yet our soldiers' range card skills are poor and need to be improved, and this is a training problem that must be solved. The revised manual can be of great help,

because it also describes in detail how to prepare and fire using the data on a BFV Standard Range Card (DA Form 5517-R). This information matches the discussion of the doctrinal range card and sector sketch in FM 7-71 and emphasizes the importance of the range card, especially in limited visibility conditions.

Another problem that has surfaced at the CTCs is that our TOW gunnery skills need improvement. In preparing the revised version of FM 23-1, we realized that a GO/NO GO task for BFV TOW gunnery on Table VIII was not sufficient for measuring a crew's effectiveness with this powerful tank killer. As a result, the revised manual adds three hands-on TOW tasks to the Bradley Gunnery Skills Test (BGSD), clarifies missile characteristics and markings, and adds separate TOW training and qualification tables to the BFV training strategy.

In addition, a BFV's crew members are not qualified until they successfully complete Table VIII and TOW qualification (a requirement that is identified in DA Pamphlet 350-38, Standards in Weapons Training, 24 September 1990.) TOW qualification consists of 10 engagements of both stationary and moving targets under varying conditions using TOW MILES and laser target interface devices (LTIDs).

The most critical Bradley training need identified both at the CTCs and the Senior Leadership Training Conference V concerns the integration of dismounted Infantry training. Although two of the four BFV battlefield roles directly support dismounted Infantry operations, the emphasis has been on the mounted role. Bradley squad training must receive the same command emphasis and resources as Bradley gunnery training, and the dismounted skills must be performed to standard.

Part of the solution to this problem has been the platoon reorganization, which was implemented in January 1990. (See *INFANTRY*, January-February 1990, pages 1-2.) The new organization provides focused leadership at the crew and squad level. The Bradley squad leader no longer has the dual responsibility for training both the squad and the BFV crew; his sole mission now is to train his squad.

Another part of the solution, probably the major part, is found in the discussion of the BFV inte-

grated platoon training strategy in Chapter 8 of the new manual. This strategy outlines a logical progression of separate and integrated training events for both Bradley elements. It is a "gated" approach wherein each event is followed by a proficiency evaluation before the individual, crew, or squad can progress to the next level. This strategy uses drills as a transition between individual and collective tasks and places equal stress upon mounted and dismounted training. The discussion of the unit training plan identifies crew and dismounted Infantry training considerations and links the training techniques and procedures to FM 23-101, Battle Focused Training, which has been another training strategy goal.

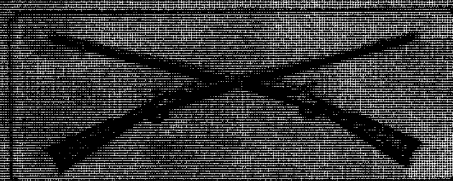
A major addition to the manual is Appendix F, which answers the question, "How do I train my dismounted Infantry?" It provides sample scenarios and standards for individual and buddy team movement, as well as squad live fire exercises.

This integrated strategy leads a BFV platoon to a collective, tactical, live fire qualification exercise shown in Table XII, BFV Platoon Qualification. This table allows commanders to evaluate their platoons' proficiency on ARTEP mission training plan (MTP) tasks during a live fire exercise. Commanders design their own Table XII on the basis of their units' mission essential task lists (METLs). To receive a "trained" rating, a platoon must meet stringent standards for crew and dismounted Infantry live fire accuracy and tactical employment.

The revised manual provides a complete and usable body of training literature. It will assist the unit commander in training and sustaining a combat ready force. To this end, the BFV gunnery manual provides the battle-focused training drills for our Bradley-equipped, mechanized Infantry units.

No manual is a stand-alone document in training combined arms and other integrated operations, and each commander must ensure that his unit leaders understand this. FM 23-1, however, does simplify the task of preparing and conducting mounted and dismounted training with the best Infantry fighting vehicle and Infantry soldiers in the world.

Follow me!



INFANTRY LETTERS



NAVIGATING IN THE DESERT

Navigating in the desert has always been difficult because of the scarcity of identifiable terrain features and the need for speed in mechanized operations. And if U.S. units equipped with the Bradley fighting vehicle are to use their night vision advantage, night navigation is another challenge they must meet.

A sound method of night navigation is to use an automatic computerized navigational aid such as the LORAN in conjunction with a standard military map and a lensatic compass. The LORAN can store up to 100 points on the ground (that is, way points) using the latitude and longitude information available on a standard military map. Once the points have been stored, the LORAN will give a distance and direction to the points needed along the route and can provide course information such as the direction of travel in degrees and the current speed. It also provides steering corrections and an alarm that can be programmed to go off 200 meters before arrival at the next point. With a map and compass to confirm the LORAN information, half the navigation battle is already won.

Another important element of mounted navigation is giving the Bradley driver good directions. The key to this is to identify a feature or point in the distance that will fix the driver on the proper azimuth. During day movements, the driver can be oriented to a piece of terrain and given the clock direction and distance. The farther out the identified terrain feature, the better, because this will enable the driver to "terrain drive," maneuvering his vehicle around high ground and sand dunes to reduce skylining.

The same process works for night movements when there is enough illumination to identify terrain features. A Bradley commander, using his PVS-7

night vision goggles, can orient on the desired azimuth and scan for an identifiable feature and then orient the driver (as he does in day movements).

During periods of limited visibility—20 percent illumination or less—identifying a feature to orient on, even with night vision devices, can sometimes be a futile effort in the flat open desert. In this situation, orienting on stars and constellations can be an effective last resort. The relative position of a star moves, of course, as the earth rotates, so movements must be short when orienting on a particular star. One to two thousand meters is a good distance to travel before checking the azimuth again.

Orienting the driver on anything identifiable will accomplish a number of things:

- Reduce the frequency of deviation corrections.
- Reduce movement time as the driver will pick up a straight line to move on and therefore reduce lateral deviations (commonly called S-ing).
- Reduce confusion within the crew as the need for corrections is reduced—not to mention the chatter over the internal radio net.
- Enable the Bradley commander to concentrate on his job, which is scanning with his night vision device for possible enemy vehicles or positions.

The LORAN will place a unit within the range of the desired point and will tell how far off the point is and its direction. Once the point is within range, the gunner and Bradley commander can quickly scan in the specified direction to locate

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. All letters are subject to editing to fit space and other editorial requirements.

it. They can then quickly resume normal scanning once the point or a terrain feature is found.

When using the same ground and route during the day that is to be used again at night (quartering party or leaders reconnaissance, for example), one technique is to have the gunner scan with the thermal sights on the Bradley's integrated sight unit to get a good picture of the terrain the way it will look at night. The gunner in the night exercises can then remember the same terrain as he scans with his thermal sights.

Navigating at night in the desert is indeed challenging. Using such techniques as these, a unit can easily overcome the challenge and drive on to its objective.

JOHN P. STACK, JR.

LT, Infantry

3d Battalion, 7th Infantry

OPERATION DESERT SHIELD

TALKING TO TANKS

In the article "Tanks with Infantry, Part 1" (INFANTRY, September-October 1990, pages 12-16), the authors (Captain John J. Wintels and Captain Kris P. Thompson) addressed an issue that is important to all infantrymen. In some cases, however, they failed to take into account the equipment differences between non-mechanized infantry units, inadequately explained key points, and mentioned trouble areas without presenting solutions.

Their logistical discussions focused on an infantry unit with HEMTTs (heavy expanded-mobility tactical trucks), which are found only in mech country. If light infantrymen were the target of the article, better illustrations might have come from assuming a unit with five-ton or two-and-one-half-ton trucks or even HMMWVs for resupply, cargo, and tank

and pump units (TPUs). The best answer if tanks are attached to an infantry-heavy task force is to get an appropriate number of the tank battalion's cargo and fuel vehicles.

When the authors discuss POL, their main emphasis is on fuel, but another important consideration is that many of the package POL requirements for the M1/M1A1 are different from those of light, motorized, and M113 infantry. Infantry units that receive M1 cross-attachments must plan to stock and distribute the tanks' distinctive hydraulic fluid and grease.

The article did not adequately explain ammunition problems that will develop if tanks receive an infantry support mission. Only M1 and M1IP (initial production) tanks have the capability to fire high explosive plastic (HEP) and antipersonnel (APERS) rounds. The first of these would be helpful in urban terrain and the second in the authors' proposed "pill-box" or POW missions.

In addition, some M1/M1IP tank units include only sabot and HEAT (high explosive antitank) rounds in their basic loads, since their primary mission is to kill armor. HEP and APERS may have to be specially requested by the receiving unit, or planned for in the receiving unit's basic load. The HEP/APERS option is not even available with the M1A1 120mm cannon, which now has round and fire control capability for only HEAT and sabot. Units receiving M1A1s should plan on making correspondingly smaller holes in bunkers and buildings.

The authors discuss communication difficulties between tanks and the infantrymen on the ground, and this problem became worse when the external phone box was left off the M1/M1A1. Some solutions that platoons have used to solve this problem are tying the tank into platoon hot loops and, in an urban situation, running a land line from the nearest fighting position to the tank so they can inform the tank commander when to unmask and fire.

Another solution, if mounted radios are inoperative or inadequate to handle the nets required, is for a platoon leader to let the tank crew use an AN/PRC-68 or AN/PRC-126. If a tank commander feels

that his close-in security is in doubt because nobody is talking to him from the ground, he may decide to move to his alternate or supplementary position.

There is no substitute for tank support, but the only way it can work is to make tank attachments an effective part of the infantry unit's offensive and defensive plans. And the only way to do that is to train with them and know their special requirements.

EDWARD S. LOOMIS
CPT, Infantry
Huntington, West Virginia

LET'S SAVE THE SQT(WC)

So, the written component of the Skill Qualification Test —SQT(WC)— is out the window! Too bad! And just when the test results were coming back in a timely manner.

There was a time when the SQT results took so long that we unit training NCOs were allowed to score the tests administered to corporals and below, and it was worth the extra work.

The SQT's written component served a valuable educational purpose: It gave our unit members a good reason to open their Soldier's Manual, and the test results were posted every year, not just every two years as required in the Reserve Components. The soldiers took pride in seeing their scores improve each year.

Some leaders may think that the NCOs are doing such a good training job that the SQT is no longer required, but the national scores for the two components of the test don't really bear that out. Besides, the SQT is another good tool to use in educating and evaluating our soldiers, and its written component should stay!

MARSHALL K. MADDOX
PSG, Nebraska Army
National Guard
Falls City, Nebraska

ARMY FOOTGEAR

There have been many changes in the type of footgear issued to the U.S. sol-

dier over the years, but to date it all leaves something to be desired.

There is no doubt in my mind that the U.S. Quartermaster Corps has taken the trouble to see that our soldiers are properly fitted with shoes and boots of the best quality. That is not my criticism. It is the style of the footgear that needs to be changed to insure the wearer's comfort and efficiency—particularly the infantryman's.

I have had a bit of experience with wet and cold feet. I spent some time in the Minnesota National Guard on strike duty (1936) when the daytime temperature was in the minus thirties and the nighttime temperature in the minus forties. We originally wore the G.I. shoe (with frosted feet) until we were issued shoepaks.

I also served in the artillery and the infantry during World War II and wore the G.I. shoe with canvas leggings. At the time, there were people around us who wore combat boots and later paratrooper boots, with their advantages and disadvantages.

Aside from this military experience, I have spent some time in northern Minnesota hunting, fishing, and the like and am quite familiar with wet and cold feet and the way we handled these problems.

When your feet are wet, or wet and cold, there is only one thing to do, and that is to get the footgear off and change socks, dry out the boots, and rub some circulation back into your feet. With boots that require lacing and retying you often can't take the time to do that (you may be a sentry or outpost man, or in a squad, just taking a rest break).

Even so-called waterproof boots get wet under combat or hunting conditions. Go into water that is over the top of them, and that's it. There was a time in my infantry experience when the rules were relaxed and some of us sent home for our Chippewa boots, and our feet were warmer and dryer than when we depended on G.I. supply.

In my early days in Minnesota, the Finns there had a boot called a mukluk, a slip-on with a soft upper. You put on your sock and then placed your foot in the middle of a folded newspaper and wrapped the paper around your foot and leg before pulling the boot into place.

When you came in from outside duties, you took your boots off, threw the perspiration dampened paper away, and put on slippers until you had to go out again. Not all of this can be adapted for the Army, but some of it can.

On strike duty, we faced another problem. We had to wear our shoepaks inside the building so we could be ready to rush outside on a moment's notice. Inside, our feet got sweaty and when we went outside the sweat turned to hoarfrost in our boots. If we had had slip-on boots, we could have licked such a problem, just as infantrymen bivouacked inside but subject to alert could pull on their boots quickly and be ready when needed.

In the case of soldiers making parachute landings, I am sure the boot they wear is better adapted to preventing broken or sprained ankles than a slip-on boot would be. But after a soldier is on the ground and exposed to the other hardships brought on by the weather, his feet will be wetter and colder than those of the soldier with slip-on boots.

Changing all of the shoes in the Army at the same time would be impossible, but it could be done a little at a time. At first, the soldiers in the infantry could get the new boots while those in the support branches continued wearing the combat boots. Support soldiers get their feet wet too, of course, but chances are they can take time to dry them more often.

A friend of mine who was a paratrooper at Bastogne said that in his unit they had to wrap their boots in cloth (burlap?) because the rear area troopers had taken all of the common sizes in overshoes intended for the men in combat. I suppose we will always have this problem, regardless of shoe or boot design.

But let's get some footgear that soldiers can take off and put back on quickly.

DON POWERS
Billings, Montana

MORTAR EMPLOYMENT

The three mortar articles in INFANTRY's September-October 1990 issue (pages 36-43) do a good job of describing the many fundamental problems units

find in the process of planning, coordinating, supporting, executing, and synchronizing mortar fires.

These articles discuss several key issues that commanders, S-3s, fire support officers, and mortar platoon leaders often do not fully consider in employing mortars. While I concur with most of what the authors had to say, I do have several comments and corrections.

Colonel Robert D. Sander, in his article "Mortars: Tactical Employment" (pages 36-39), says, "Doctrine on the specific responsibilities and roles of the S-3, the FSO, and the mortar platoon leader varies from one publication to another." This is not really true. The doctrine doesn't vary so much as the tactics, techniques, and procedures (TTPs). Our doctrine gives rise to the command and staff latitude in the employment process that is reflected by the TTPs. In this instance, Colonel Sander is discussing procedures, not doctrine.

Later in his article, Colonel Sander states, "Again, we must focus the mortar platoon's mission on critical targets that are compatible with its capabilities and then maneuver the platoon into a position to provide these fires at the time and in the volume needed." This statement is the "bottom line" of mortar employment planning. The focus on what, where, how, and when, as determined by the commander and his staff, is the essence of the top-down fire planning process. This focus also supports the synchronization process that uses the decide-detect-deliver approach to battle management. By deciding up front what type of targets mortars are to shoot, where to shoot and when to shoot, the mortar platoon leader and fire support officer can better integrate mortars into battle plans.

In his final paragraph, Colonel Sander says, "Admittedly, this approach (that I have described here) to mortar fire planning can be said to contradict current doctrine." The approach he describes is, in fact, completely supported by our doctrine. Chapter 6, Field Manual 71-2, The Tank and Mechanized Infantry Battalion Task Force, provides a good discussion of the doctrine for and the tactical employment of mortars. What is needed is

a more enlightened application of our doctrine (fundamental principles) and tactics (general guidance) as demonstrated by METT-T-driven techniques and procedures. A good example of this is the matrix.

Matrices similar to the ones Colonel Sander and Lieutenant Craig S. Linderman ("Mortar Platoon Matrix," pages 41-43) illustrate are a standard part of most tactical orders now used at brigade and below. In fact, the fire support tasks in ARTEP 71-1, 71-2, and 71-3 MTPs all require the development of a fire support execution matrix as a task standard. Whatever their titles and formats, matrices have become an essential tool for commanders and staffs in the battle synchronization process. Matrices are not doctrine, however. They are formats for displaying information. Their use, the staff sections that should prepare them, and the information that should be entered on them should be a matter of standing operating procedure (SOP).

Lieutenant Christopher J.L. Allen, in his article "Heavy Mortars: New Thoughts on Tactical Employment" (pages 39-41), says, "Our current doctrine states that the mortar platoon leader will succeed the battalion FSO in the event he becomes a casualty. . . ." Again, this is the wrong use of the term *doctrine*, and in any event is not correct. Field Manual 6-20-40, Tactics, Techniques and Procedures for Fire Support for Brigade Operations (Heavy), states (page 1-7) that either the targeting officer or the fire support sergeant acts as the FSO in his absence. Additionally, FM 71-2 (page 6-9) states that in the event the fire support element (FSE) is lost, the FSO must designate the least committed fire support team (FIST) to assume the FSE's functions.

The procedures for the replacement of personnel or battlefield functions during combat operations should be outlined in a unit's tactical SOP or contained in the operations order.

JOHN L. STRONG
MAJ, Field Artillery
Fort Sill, Oklahoma

INFANTRY NEWS



CHIEF OF INFANTRY UPDATE

EDITOR'S NOTE: In the past, the Chief of Infantry Update has been published separately and mailed directly to infantry battalion commanders. The update has proved to be a good way to keep the field informed of actions designed to improve the efficiency and effectiveness of

the infantry force.

In the future, to save the expense of printing and distributing a separate publication, the pages of INFANTRY will be used to publish the same material.

As before, infantrymen in the field are encouraged to comment on the items that

appear here and to suggest topics to be included in future updates. Address your suggestions to Commandant, U.S. Army Infantry School, ATTN: ATSH-TDI, Fort Benning, GA 31905-5593, or call AUTOVON 835-2350/6951 or commercial (404) 545-2350/6951.

THE M249 SQUAD AUTOMATIC Weapon (SAW) has been approved to replace the M60 as the Army's light machinegun in its ground mount role. In that role, it will replace the M60 on a one-for-one basis in combat, combat support, and combat service support units. The M249 will not replace the M60 machineguns mounted on vehicles.

All of these M249s (automatic rifles and machineguns) will be configured the same in terms of basic weapon and basic items of issue; that is, each weapon will be issued with a spare barrel and a barrel bag. The M249 will operate with the M122 tripod and will have an adaptor to connect the traversing and elevating mechanism. Initial replacements are expected to begin in the second quarter of Fiscal Year (FY) 1992.

The USAIS point of contact (POC) is Mr. Brown, AUTOVON 835-3311, or commercial (404) 545-3311.

THE BFV MASTER GUNNER Course is intended solely to produce noncommissioned officers who are expert on all Bradley Fighting Vehicle operating systems. They receive extensive training in BFV maintenance, range operation planning and execution, and all phases of gunnery training. Graduates of the course are awarded Additional Skill Identifier (ASI) J3.

On occasion, however, these master

gunners are assigned to duties that do not require master gunner skills, and this valuable experience is wasted. Often this happens because personnel managers are not acquainted with ASI J3.

The Army's inventory of master gunners is short about 180 NCOs. To reduce this deficit, all master gunners (with the exception of those who are assigned to such career-building positions as drill sergeant, instructor, or recruiter) should be assigned to J3-coded positions in units equipped with Bradley infantry or cavalry fighting vehicles.

The School's POC is SFC Douglas, AUTOVON 835-1159, or commercial (404) 545-1159.

A LIGHTWEIGHT CHEMICAL biological protective garment (LCBPG) is being developed. The present battle dress overgarment (BDO) that protects a soldier from the effects of chemical agents is heavy, bulky, and restrictive, and subjects the wearer to severe heat stress.

A Phase II international materiel evaluation program was initiated in 1987 to de-

termine the suitability of several foreign candidates. During user testing, the British Mark IV chemical protective overgarment (CPOG) was selected as the one with the best potential for meeting the requirements.

Although the BDO's protection level during technical testing exceeded that of the CPOG, the CPOG appeared to offer the best balance between protection and comfort.

The School's POC is CPT Taylor, AUTOVON 835-5314, or commercial (404) 545-5314.

THE DOCTRINAL LITERATURE program at the Infantry School depends heavily upon the comprehensive review of all draft manuals by infantrymen in the field. Their critical comments help ensure that the School turns out manuals that are doctrinally correct, tactically sound, and usable.

Normally, the field responds with quality, though not always with quantity. For instance, the School has received little feedback on the coordinating draft (CD) of Field Manual (FM) 7-7J, The Mechanized Infantry Platoon and Squad (Bradley), which was sent to the field for review in March 1990 with a suspense date of 15 August 1990 for comments. We strongly solicit the support of the organizations that have not yet responded. Department of the Army (DA) Form 2028,

1990 INDEX

The 1990 index to INFANTRY has been prepared separately and is available to anyone who requests a copy. Please address your requests to Editor, INFANTRY, PO Box 2005, Fort Benning GA 31905-0605.

Recommended Changes to Publications and Blank Forms, provides the format for comments.

The following are Infantry School doctrinal manuals that have been or soon will be sent out for review.

FM 7-91, Tactical Employment of Antiarmor (September 1987), CD September 1990; comments due January 1991.

FM 23-26, Night Vision Devices (New), CD March 1990; comments due 30 September 1990.

FM 23-91, Mortar Gunnery (October 1985), CD September 1990; comments due 30 November 1990.

FM 21-26, Map Reading and Land Navigation, CD September 1990; comments due January 1991.

FM 21-150, Combatives, CD December 1990; comments due March 1991.

Five copies of a CD are mailed to each division. If you are having a problem receiving them, please contact CPT Williams at AUTOVON 835-4704/7114, or commercial (404) 545-4704/7114.

LIGHTWEIGHT FLASHLIGHTS are being examined in an effort to identify a nondevelopmental item (NDI) family of flashlights to replace the current right-angle MX-991/U. A family of flashlights is required because different flashlights may be required for dismounted combat soldiers, combat crew soldiers, and all others, depending upon their mission requirements.

The new flashlights will attach to the individual load-bearing equipment to provide hands-free illumination in periods of limited visibility and as a signaling device. When attached to the load-bearing equipment, the flashlights will look forward, and they will have integral filters.

The future development of the lightweight flashlights will include a blue/green lens that is compatible with third generation image intensification equipment and a near infrared filter for use as an image intensification spotlight. Further improvements will include an explosive-proof switch, a strobe module attachment, and an adaptor for firing antipersonnel mines and will make the

flashlight waterproof to a depth of six feet.

The NDI lightweight flashlights will be tested by the 6th, 7th, and 25th Infantry Divisions, the 82nd Airborne Division, and the U.S. Marine Corps. An interim light will be available in FY 1991.

The School's POC is Mr. Grady Scott, AUTOVON 835-5314, or commercial (404) 545-5314.

THE TOW 2B MISSILE, which is currently being developed, will have a tandem warhead design that exploits new technology. Its fly-over, shoot-down design will attack the more vulnerable tops of tanks.

The TOW 2B will take advantage of the TOW firing platforms currently in the Army inventory, both ground and vehicle mounted. The missile will not perform as well, however, when fired from non-TOW 2-capable firing platforms.

The new missile will have dual explosively formed penetrators and dual sensors (optical and magnetic). It will have a range of 3,750 meters and the same time of flight as the current TOW missiles. It will weigh 63 pounds (encased) and will measure 50.3 inches.

Since the current firing platforms, guidance hardware, and center-of-mass aim point will be used, the TOW 2B will add no TOW training requirements. The fielding of the missile is scheduled for FY 1991.

The School's POC is Mr. Hancock, AUTOVON 835-1016, or commercial (404) 545-1016.

THE 120mm BATTALION Mortar System (Towed) is a smooth-bore, muzzle-loading system with a maximum range of 7,240 meters and a minimum range of 170 meters. It has a maximum rate of fire of 15 rounds per minute for one minute and a sustained rate of 4 rounds per minute.

The system, which weighs 319 pounds in the firing position, was type classified "Limited Production (Urgent)" in March 1990 and is scheduled for fielding to the motorized brigade at Fort Lewis in February 1991.

The School's POC is Mr. Cogar, AUTOVON 835-1016, or commercial (404) 545-1016.

TWO ARMOR PIERCING training cartridges (the M910 and M910E1) are being developed for the Bradley fighting vehicle's 25mm gun.

The initial materiel need statement identified three types of ammunition to be developed for the 25mm: One cartridge was needed to defeat such thin-skilled vehicles as Soviet BMPs. A fast, flat-trajectory armor piercing (AP) round (M791) was selected. Another round was needed to inflict casualties on troops and to ignite flammable materials. This led to the second cartridge, a high explosive incendiary tracer (HEI-T) (M792). The third round was a training practice (TP) round (M793).

BFV gunnery training, however, revealed a deficiency that needed immediate correction: When a BFV crew loaded the ammunition ready boxes and the AP and HE feeder chutes, they loaded the same type of ammunition (TP-T). Although the training practice tracer cartridge was ballistically matched to the high explosive incendiary tracer (HEI-T) round, no training round was available that ballistically matched the armor piercing cartridge. The gunners were therefore getting a false impression by firing a round that did not duplicate the AP round's trajectory.

To correct this ballistic mismatch of 25mm ammunition, the Infantry School and the Army Research, Development, and Engineering Command (ARDEC) jointly developed an armor piercing training cartridge (M910). The new round is a limited range, armor piercing training round that matches the M791 for 2,000 meters and has a maximum range of slightly more than 6,000 meters. The M910 cartridge is now being fielded throughout the Army.

In response to improvements in threat armor (the new family of BMPs, for example), a new armor piercing cartridge (M919) was also designed. It will eventually replace the M791. The M919 has a long rod penetrator for its projectile. To defeat the new family of BMPs, a

depleted uranium (DU) tip was fitted to the penetrator. But this created another training problem—projectiles made of DU material can be fired only at major testing facilities.

Accordingly, the School and ARDEC are in the process of developing an armor piercing training round that will ballistically match the M919 and that can be fired on standard ranges. This is the M910E1 armor piercing training cartridge, which will be fielded by FY 1992. It will eventually replace the M910.

ALL AN/PRS-7/8 MINE DETECTORS were recalled in 1986, but some units failed to comply with the recall message. That message advised major commands to delete LIN G02204 from the TOE/MTOE; therefore, no authorization now exists for those still in the units.

A message from the Commander, Troop Support Command, dated R311330Z October 89 on this subject states that all requisitions for these mine detectors and spare parts for them will be sent back to the customer with Reject Code CY.

The AN/PRS-7/8 is obsolete because of its poor reliability in detecting mines, particularly in dry soils. The detectors are therefore hazardous to operate and also give the operators a false sense of security.

Units that still have not complied with this Department of the Army message should do so immediately.

TRAINING CIRCULAR (TC) 90-1, Military Operations on Urbanized Terrain (MOUT) Training, is now being revised to reflect the latest changes in doctrine and training techniques, along with the lessons learned from recent military operations, including Operation JUST CAUSE in Panama. It should be published in the last quarter of FY 1991.

The revisions will include the addition of such low-intensity conflict considera-

tions as the identification of friend and foe and special room clearing procedures for situations in which civilian personnel may be inside.

Although this circular can also be applied to other MOUT training facilities, it is keyed to the standard MOUT training complex (MTC), which consists of the MOUT assault course (MAC) and the collective training facility (CTF).

The MAC, which focuses on the fighting skills of individual soldiers and teams, consists of eight stations (six of them designed for the use of live fire). The revised circular will include a new station, the grenade house, which will allow soldiers to practice room clearing procedures with live hand grenades and ammunition. The grenade house uses new shock absorbent concrete panels to prevent ricochets.

The CTF is a dry fire facility that focuses on unit training up to the battalion level. The standard CTF consists of either 18 or 32 buildings constructed in a European setting.

The School's POC is Mr. Lemon, AUTOVON 835-1317, or commercial (404) 545-1317.

FM 7-30, THE INFANTRY BRIGADE (May 1990), a revision of FM 7-30, Infantry Airborne and Air Assault Brigade Operations (April 1981), is now in draft form. It contains a significant number of changes that include the operations of heavy brigades, hence the title change.

Analysts are now looking at the differences between the two publications and assessing the effects the new FM will have on officer and enlisted training publications.

The School's POC is LT Tierney, AUTOVON 835-3022, or commercial (404) 545-3022.

THE MILITARY QUALIFICATION Standards (MQS) II manual of common tasks, Soldiers Training Publication

(STP) 21-II-MQS, should now be in the field. The Infantry Branch MQS II manual, STP 7-11II-MQS, is scheduled to follow in the spring of 1991. The branch manual is expected to consist of 23 tasks for lieutenants and 15 for captains.

The development of MQS III standards is still in the planning stage at the U.S. Army Training and Doctrine Command and the Center of Army Leadership.

The School's POC is Mr. Walker, AUTOVON 835-7670, or commercial (404) 545-7670.

COURSES COMPLETED at the International Long Range Reconnaissance Patrol (LRRP) School may now be entered on an officer's Officer Record Brief or a soldier's DA Form 2.

The courses involved are Patrolling, Winter Patrolling, Survival, Close Quarter Combat, Combat Arms Recognition, Specialist Recognition, LRRP Leaders, and LRRP Medical.

Soldiers who have completed any of these courses should submit copies of the appropriate diplomas and documents through their unit personnel and administration centers for inclusion in their official records. (The reference for this action is Army Regulation 680-29.)

The School's POC is MAJ Bowman, AUTOVON 835-5143, or commercial (404) 545-5143.

THE CURRENT RESERVE Component advisors to the Infantry School are Colonel Rodney W.K. Morris (U.S. Army Reserve) and Lieutenant Colonel Richard A. Wright (Army National Guard).

Their office symbols are ATSH-RCR and ATSH-RCG, respectively. Both can be reached by telephone at AUTOVON 835-5741/6469, or commercial (404) 545-5741/6469. Their facsimile terminal number is AUTOVON 835-7837 or commercial (404) 545-7837.

THE INFANTRY CONFERENCE for 1991 is tentatively scheduled to be held 9-12 April at Fort Benning.

All correspondence concerning the conference should be addressed to the Office

of Infantry Proponency, U.S. Army Infantry School, Fort Benning, GA 31905; AUTOVON 835-5023, commercial (404) 545-5023.

THE PUBLICATIONS DIVISION of the Directorate of Training and Doctrine has provided the following list of publications that were scheduled to be in the field by this time:

FM 7-10, The Infantry Rifle Company. Provides doctrine, tactics, techniques, and procedures on the way all infantry rifle companies fight.

FM 90-26, Airborne Operations. Discusses the employment of airborne brigades, battalions, and regiments in airborne operations within the context of the AirLand Battle; sets forth tactical and administrative support doctrine for the employment of Army forces in joint airborne operations.

FM 23-90/TO 11W2-5-13-21, Mortars. Contains guidance for leaders and crewmen of mortar squads and platoons; discusses problems of mortar crew training; and presents practical solutions to assist in timely and accurate mortar fires.

THE U.S. ARMY RANGER Training Brigade, on the basis of field requirements and the SOPs of the TOE units it supports, has revised its policy concerning headgear for students attending the nine-week Ranger Course.

Instead of a modified BDU cap, students will be required to wear Kevlar helmets for all raid, ambush, and movement to contact tasks. When contact is not expected and when supported by an analysis of METT-T, they may still wear the modified BDU cap (referred to as a patrol cap). Generally, this applies to reconnaissance patrols, infiltration, occupation of patrol bases or hide sites, conduct of after action reviews, and activities in marshalling areas. Under no circumstances will modified BDU caps (patrol caps) be worn outside a field environment or staging area.

Kevlar helmets remain an item of student issue while students continue to provide their own modified BDU caps.

THE NATIONAL INFANTRY Museum honored the 100th anniversary of General of the Army Dwight D. Eisenhower's birth with several exhibits about him and also helped others prepare their own observances.

The museum participated in the dedication ceremony held at the Eisenhower marker on Fort Benning, which recognizes the quarters in which the Eisenhowers lived



Recast version of the Doughboy statue stood in front of the old Infantry School building (above) before being moved to the Henry Caro NCO Academy on Fort Benning.

during the 1920s. General Eisenhower was closely associated with Fort Benning's history, with assignments on two occasions in the early years and several visits later.

Again this year, the museum participated in the "Bells Across the Nation" tribute on the 203d anniversary of the signing of the Constitution by ringing an Army bell cast in Troy, New York (circa 1860) for 203 seconds. School children, members of the Daughters of the American Revolution (DAR), and others participated in the program.

An important donation has been received from the Montgomery, Alabama, Museum of Fine Arts—a World War I German Maxim water-cooled heavy machinegun (MG08 1915) with its original sled-type mount. The machinegun previously had been on a long-term loan from that museum.

An effort is now under way to acquire for the museum and Fort Benning the original Doughboy statue of a U.S. Infantryman from the U.S. Berlin Command Headquarters. A recast version of that statue stood for many years in front of the old Infantry School building at Fort Benning until it was moved to the NCO Academy.

One of the objects shown in the Benning Room at the museum is a fine oil painting

of General Henry Lewis Benning, for whom Fort Benning was named.

General Benning—who lived in Columbus, Georgia for most of his life—was a successful lawyer and an associate Georgia Supreme Court justice. He was a states' rights advocate and an infantry soldier of the Confederate States Army. When war was declared in 1861, he raised the 17th Regiment of Georgia Volunteers, which fought with the Army of Northern Virginia, and served as its colonel. He was promoted to brigadier general the following year and to major general shortly before the war's end.

Prints of the painting of General Benning, among others, are available from the National Infantry Museum's Regimental Quartermaster Sales Store.

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

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

PROFESSIONAL FORUM



Auftragstaktik Thoughts of a German Officer

LIEUTENANT COLONEL KNUT CZESLIK

The article "*Auftragstaktik*," by Lieutenant Colonel J. L. Silva, in *INFANTRY* (September-October 1989, pages 6-9), which I read in March 1990, is educational and worthwhile.

Colonel Silva persuasively and correctly describes *Auftragstaktik* (mission-oriented command and control), its causes and effects, and its advantages over *Befehlstaktik* (order-oriented command and control). Unfortunately, this useful, intellectual argument is too seldom heard in the Bundeswehr.

I would like to offer a few additional thoughts from the German perspective.

The main manual for leadership in the Bundeswehr, which is comparable to the U.S. Army's Field Manual 100-5, is HDv 100/100. Chapter 6 of that manual states that "Command and control of armed forces is an art, a creative activity based on character, ability, and mental power." That chapter goes on to say: "Mission-oriented command and control is the first and foremost command and control principle in the army, of relevance in war even more than in peace. It affords the subordinate leader freedom of action in the execution of his mission, the extent depending on the type of mission to be accomplished."

This principle creates, for leaders at all levels, the freedom of maneuver for

independent action. The most senior military leader passes on the objectives, provides the resources, and coordinates the combined arms cooperation. He never determines, however, *how* the mission is supposed to be accomplished.

This "mind set" is best related to free, mature, morally obligated men who act responsibly, who want to act freely and independently within the structure of the mission and the commander's intent. The delegation of authority to lower levels allows reaction to situational changes and the friction of battle in an orderly manner without great delay, because creativity and innovation can be brought to bear with full knowledge of the actual situation.

As Colonel Silva demonstrates, this thought process was introduced into the Prussian Army by General Gerd von Scharnhorst. He had already taught this principle as an instructor in the "School of Military Science for Young Infantry and Cavalry Officers" in Berlin, which was founded in 1801 and was a predecessor to the later officer schools as well as the War Academy.

Early in his career, von Scharnhorst had demanded "thinking officers" who understood taking action according to the "special circumstances" and taking extraordinary measures to control or

guide the future. He fought passionately against "mechanical thinking," "small minds," and "pedantism" as well as "limiting tradition."

This trend toward *Auftragstaktik* was brought about by the French Revolution and Napoleon's method of waging war, which swept away the traditional armies with their linear tactics, iron discipline, blind obedience, and intolerance of independent action.

On the other hand, the roots of *Auftragstaktik* lay in the Prussian concept of the spirit of the rugged, self-confident officer of the nobility who refused to act against honor and conscience, even for his ruler. One example of this can be seen in the battle of Zorndorf in 1758 during the Seven Years War. It was in that battle that General Friederich von Seydlitz said to the King, Frederick the Great, "I need my head until after the battle, then it belongs to the king." (The poet, Heinrich von Kleist, in the play "The Prince of Homburg," dramatically formulated this independence of action, not in a historical context but taking in the spirit of the times.)

It was thanks to Scharnhorst that the ability to lead units independently of time and place according to the commanding officer's intent was translated into educational efforts for troop leaders. The

principle became the central theme of leadership thinking in the Prussian-German Army. Gradually, Field Marshal Helmuth von Moltke the Elder expanded the principle to all levels down to company commander, largely as a result of the further development of firepower, technical progress, and better communication.

Von Moltke realized that there were inherent dangers in the independent actions of subordinates and that entire battle plans could be destroyed. He made known, however, in a conversation on freedom of decision with the historian Heinrich Friedjung, "Obedience is the principle, but man stands above the principle." And then came his decisive statement, "Who is right in battle is decided in most cases by success."

Thus, success or failure are, in the end, the guidelines for making a decision. Each decision and each action in the uncertainty of battle poses a challenge that offers both advantages and burdens. The double-edged nature of *Auftrags-taktik* therefore becomes clear—in the context of direction and independence, of free maneuver room or not, of responsibility and obedience.

As a guideline in the dilemma between freedom and constraint in decision making, a moral category was expressed early by General Wilhelm von Blume, a military theoretician, at the end of the 19th Century: "For independent action in war a moral courage is needed in order to execute decisively and energetically correct and necessary knowns, without allowing oneself to err through fear of responsibility." General Ludwig Beck (Chief of the General Staff from 1935 to 1938) noted in his own copy of von Blume's book at this particular place: "Also through danger of a wrong action."

This was and is the decisive foundation of *Auftrags-taktik*. It guarantees the leader on the spot the trust of his superior. This principle, which originated from the combat leadership of von Moltke, has influenced current field service manuals. As von Blume said: "Everyone from the highest leader to the lowest soldier must constantly be aware that to refrain from doing something (failure to act) will have

a greater negative impact than a mistake in the selection of resources."

General Otto von Moser mentioned the concept *Auftrags-taktik* for the first time when he wrote in 1912, "*Auftrags-taktik* is what I would like to call the leadership action which we saw for the first time in full action in our Exercise Rule 88 and also emphasized for lower leadership in Exercise Rule 06 in the same sense, by which the higher leader does not give his subordinate a binding order, but more an excerpt from his own thought process, through which he demands from [the subordinate] the intellectual cooperation for the accomplishment of the combat mission."

DECISIVE ACTION

The current German manual refines these thoughts: "Decisive action is the highest dictate in combat. . . leaders who wait for orders cannot utilize the momentary favorable opportunity. All leaders must constantly keep in mind that indecisiveness and omission can be just as bad a combination as acting on a bad decision. Success is mostly on the side of those who rapidly, courageously, and thoughtfully decide on sweeping action."

With this, we again have the dilemma that success is often only the last means we have for measuring *Auftrags-taktik*. In German military history, there are numerous examples that define the limits between freedom of decision and constraint in the weighing of a mission.

On the positive side, for example, is the behavior of General Yorck von Wartenburg at Taurroggen in 1812. He withdrew from Marshal Jacques MacDonald's 10th French Corps against the order of the Prussian king and decided to accept the Russian offer of neutrality and thus retained the mass of the Prussian troops for the king. He reported to Berlin, "The step which I have taken happened without the order of your Majesty." His decision was later glorified.

On the negative side, fate went against General Graf Sponeck in the Crimea at the end of 1941 when he also acted against an order. As commanding general

of the 42d Army Corps, he was subordinate to the 11th Army under General of the Infantry von Lewinski, better known as von Manstein, and had the mission to defend the Kerch peninsula. On 26 December 1941, the Russian counter-attack began and the Russian 51st Army succeeded in establishing bridgeheads in the rear of the 42d Army Corps near Feodosia. General Sponeck decided that the situation was critical and requested that the corps be withdrawn. This request was denied, although a Russian breakthrough to the north threatened the rear of the corps. General Sponeck ordered the clearing of the peninsula and an attack into the rear of the enemy force. At this point, communication was lost temporarily. Von Manstein forbade the movement but, since the corps was already five hours in retreat, he also ordered the attack on Feodosia, relieved Graf von Sponeck two hours later, and placed him before a military tribunal. Von Sponeck was sentenced to death, but this sentence was reduced to six years imprisonment by Hitler on 20 February 1942. (The subsequent murder of von Sponeck by SS henchmen of Heinrich Himmler in Gernersheim in 1944 had no connection with his actions at the end of 1941.)

Here it is again clear that *Auftrags-taktik* is closely tied to the undivided responsibility and hard obligation each leader assumes in fulfilling his mission. At the same time, it is also clear that in the context of this responsibility each leader is a free man. That is the spirit that also demands a free, democratic thought process.

In my opinion, *Auftrags-taktik* is the key to personally responsible and creative action and to success in peace as well as in war. Thus, it is also an essential foundation for the career satisfaction of a soldier.

Lieutenant Colonel Knut Czeslik is an experienced mechanized infantry officer in the German Army, a former battalion commander, and a military historian who is now assigned to the German Armor School in Munster.

Why Men Fight

A Rebuttal

MIKE FISHER

The echoes of their voices still come to me across two decades and 10,000 miles, echoes that were etched indelibly in my memory during those respites from the grinding repetition of operation, patrol, and ambush that consumed our lives in Vietnam during 1966.

The night would take most of these men—the C.O. killed by a Chinese communist grenade at the “Horseshoe,” Snake slashed by automatic weapon fire along Highway #9, Ox savaged by a Bouncing Betty near Hoi An, and on and on. Though the darkness of those years has blurred my vision of those men, their voices remain clear.

If INFANTRY contributor Harry F. Noyes, III, who wrote the article “Why Men Really Fight” (July-August 1989, pages 23-27), heard the same echoes, he would recast his analysis of the warrior’s motivation. Those echoes reflect little of the idealistic patriotism that he considers the lynchpin of a soldier’s motivation. Nor does a review of the literature lend any credence to his hypothesis.

Rather, the voices and memories that drift back to me from the killing fields of South Vietnam echo the earned humility and enduring hope that cloak combat infantrymen against the travail of their craft—humility that they have survived when others less fortunate have fallen, and hope that luck and skill will give them one more day, and then perhaps still another.

Often the survivors of those fields find their vision obscured by the immediacy and depth of their experience. Men involved in combat often recall only snapshots randomly selected from periods of

stress and danger. The warrior himself proves unsure on both the circumstance and the motivation surrounding times of heavy combat. Consequently, often only the times of respite return with objective clarity.

For this reason, I feel confident in emphasizing the recollection that in my own rifle platoon little idealism or patriotism characterized the conversation of men who had been placed on the cutting edge of harm’s way. Those intangibles found themselves sublimated by the stronger standards of pride, comradeship, and leadership—and even these more tangible standards remained largely unspoken. The common thread that binds together the voices of the Army infantrymen or Marine riflemen farthest forward during the Vietnam War focused on the hopes and dreams of ordinary men and boys involved in extraordinary circumstances.

“THE WORLD”

Those voices dwelled on the hope of going home to “the world,” little realizing it was a world in which many of them would find themselves unfamiliar or unwelcome—unfamiliar because their youth had provided no depth of civilian experience, and unwelcome because many had come from underprivileged, disfranchised, or troubled backgrounds and had found sanctuary in the service of their country. Their conversations focused on that which they knew best: the common odyssey of training, combat experiences, and comrades gone.

The politics of the war seldom war-

ranted discussion. Two factors contributed to this. First, these men found themselves ill prepared—by training, background, and interest—for the mental gymnastics needed to follow the complex ideological and political arguments that undergirded the grand strategy of that war.

Perhaps more important, the men of my platoon saw little reason to discuss a war over which they had no control. Caught in the interlocking web of human circumstance that led them to Sutter’s Ridge and the Rockpile, they realized the futility of arguing their fate. Like the riflemen who had followed either Union General Ulysses S. Grant or Confederate General Robert E. Lee into the deadly inferno of the Wilderness little more than a century earlier, my men found themselves in a position where they had scant time for analysis.

What does motivate the warrior, then, if not the patriotic idealism that Mr. Noyes stresses?

First, for many, war offers an attraction few other endeavors in life can equal. Many men find in the adventure and danger of combat an elixir beside which the rest of life’s experience pales. Because of the immediacy of his experience, the combatant often obscures this point. The uninitiated cannot believe that a soldier finds fulfillment in war, and the combatant himself often contributes to this belief. As a result, those who return from the killing fields tend to color their reminiscences to suit their audience, avoiding subjects the listener seems unable or unwilling to understand. Additionally, memory often short circuits an

accurate re-creation of events that have occurred under great stress. Finally, those same circumstances are beyond the returning warrior's ability to describe adequately. So silence follows.

"War is hell," as William T. Sherman emphasized. But the Union General whose indirect approach through the South hastened the downfall of the Confederacy also would have agreed with Robert E. Lee, who, looking past the Federal corpses strewn on the fields at Fredericksburg in 1862, said, "It is well that war is so terrible, or men would grow to love it too much."

Second, as men often find peace in the stark simplicity of combat, they also gain a sense of comradeship and self-worth that had previously eluded them. Writer Stephen Crane calls it "a mysterious fraternity born out of smoke and danger of death." The hardship and danger of war, the common suffering for an often unnamed and unidentified cause bonds men into this fraternity. This bonding process contributes greatly to the warrior's motivation. That inner drive springs from both the belief in self and the responsibility to others that compel the combatant to live the creed of his unit. Individual and collective pride form the basis of unit and individual esprit de corps.

Napoleon realized the need to build this pride in the tough, irreverent legions that carried the French colors at the turn of the 19th Century. He called this quality in his *Grande Armee* the *Feu Sacre*, or "sacred fire." Through leadership and rewards, Napoleon sought to encourage and increase the elan that made his armies the pride, as well as the scourge, of the continent.

Many men of the *Grande Armee* entered the service filled with the traditional patriotic fervor and jingoistic slogans that surround the beginning of most wars. Others joined to escape the past or to search for new horizons. But as ideal turned to reality, the foot soldiers learned the lessons of pride, comradeship, and leadership. As the siren's song of war intensified, patriotism and jingoism disappeared.

As one bloodied World War I veteran grimly insisted, "There is no room for



idealism in the trenches," and that same admonition held true for the 173d Airborne Brigade at Hill 875 and for the Americal Division in the Arizona Territory and for the other nameless and forgotten places where individual soldiers met the lonely challenge of the battlefield in Vietnam with courage and grace.

The essential tools for the infantryman's motivational kit are comradeship, pride, and, of course, strong leadership. The leader must blend and mix, creating and maintaining the comradeship and pride that bond his unit into a cohesive whole. Committed to combat, the leader must spend frugally that most valuable capital of courage that fire team, squad, platoon, company, and division must conserve. To insure that only the necessary accounts receive payment from the infantryman's all too mortal treasury, the leader must expend that reserve with great care.

This kind of leadership supplies the glue that binds the unit in place. Mr. Noyes would do well to review his historical precedents. I believe it was leadership, not patriotism, that supplied the mortar of cohesion in the examples he cites.

• During the initial months of the German *Barbarossa* invasion in 1941, three million Russian soldiers, surprised and outfought, fled or surrendered. During the late fall and early winter of that year, however, Marshall Zhukov assumed overall command of the Soviet armies

defending Moscow. He reorganized and counterattacked, striking the Germans with veterans fresh from combat in Asia, driving the Germans to the west, and turning the tide of World War II. It was properly reorganized and well led formations, not Stalin's belated cries for the army to defend Mother Russia, that turned Soviet despair to exultation.

• Mr. Noyes says that during the frenetic fighting on the Golan Heights in 1973, Israeli troops distinguished themselves because of patriotism. Perhaps. But the harshness of the Israeli basic training process had actually begun the unit bonding process. Additionally, Israeli Major General Chaim Herzog recalls the self-sacrifice of his leaders during the conflict. One relief unit for a beleaguered outpost found an Israeli brigade commander, battalion commander, and brigade artillery commander forward leading their men.

• By the fall of 1862, when Robert E. Lee led his slim legions of the Army of Northern Virginia across the Potomac toward Sharpsburg, Maryland, and a gentle bend in Antietam Creek for what proved to be the bloodiest single day in the Civil War, observers noticed a strange sight. Blood covered the approaches where the Confederate soldiers entered and exited the river. Shoeless and hungry, their ranks thinned by desertion and battle, only the strong remained. Lost was the ideology of a Confederacy divided politically by leadership and pur-

pose. In the ranks of the foot cavalry that followed Lee and his lieutenants, it was pride and comradeship that bound the soldiers to their leaders and drove them on to face the crucial days ahead.

Lee understood that men fight because of their nature, finding release in the danger and excitement of combat. That ability to fight must be strengthened by comradeship and pride and liberally seasoned with strong leadership, which supplies the catalyst for successful performance on the battlefield. Lee understood that patriotism and idealism grew from these factors, not the other way around, as Mr. Noyes maintains.

The question that follows from all this then is not why men fight but how we can improve upon their battlefield performance. The answers lie, as always, in the development of pride and comradeship in the individual and the unit, overarched by a strong dose of leadership.

Concerning his Army of Northern Virginia in 1864, Lee wrote to a subordinate, "Never has there been such men. Properly led, they will go anywhere. But proper commanders," he lamented, "where to obtain them?" Similarly, a U.S. regimental commander in the Korean War who had grasped the value of leadership told an observer, "The boys

up there aren't fighting for democracy now," pointing to a fire in progress, "they're fighting because the platoon leader is leading them."

Leadership is still essential to performance on any battlefield, and neither patriotism nor idealism will ever replace it.

Mike Fisher was a platoon sergeant in a rifle company in the 1st Marine Regiment in Vietnam. He has written numerous articles and book reviews for *INFANTRY* and other military publications. He holds a doctorate from the University of Kansas and was Director of Academic Advisement at Pratt Community College in Kansas when he wrote this article.

System Safety

PRECY D. AGUAS

A newly developed system (a piece of equipment or a facility) sometimes presents risks in a unit that the leaders have failed to consider. A system safety program, as required by Army Regulation 385-10, The Army Safety Program, will help a commander identify and eliminate safety risks, or at least to reduce them to an acceptable level.

System safety is the application of engineering and management principles, criteria, and techniques for making a system as safe as possible, given the constraints of operational effectiveness, time, and cost throughout all phases of the system's life cycle.

In this context, a system is a composite of elements that are used together in the intended operational or support environment to perform a given task or to achieve a specific production, support, or mission requirement. A typical ground vehicle system, for example, would include the vehicle, maintenance equip-

ment, training equipment, personnel (both crew and support), facilities, and training and procedural manuals.

Army Regulation 385-16, System Safety Engineering and Management, dictates the requirements for developing and implementing a system safety program. It emphasizes that contractors, combat developers, materiel developers, and others who design and develop hazard control measures for various systems should influence the system early in its life cycle. But it also emphasizes the need for input from the leaders and soldiers who use the system in the field, and it appears that this need is not being fully achieved.

The Infantry Branch Safety Office at Fort Benning is in the process of developing a comprehensive system safety program that should improve system safety management for all infantry products. Two safety professionals are assigned to the Infantry School to perform system safety tasks in the development and field-

ing of systems for which the School has proponentcy.

A system safety engineer permanently attached to the Directorate of Combat Developments is responsible for providing design information for requirement documents in order to develop and field systems that will be safe for soldiers to operate and maintain. This engineer ensures that safety is considered throughout the development phase of a system's life cycle and also serves as the central point of contact on system safety at Fort Benning.

In addition, a safety specialist assigned to the Directorate of Evaluation and Standardization is responsible for seeing that safety is integrated into all programs of instructions, technical manuals, and other related publications for infantry proponent systems before their deployment. This specialist also manages a safety lessons learned data base that may provide information that can be incorporated into



requirement documents for similar systems that may be developed in the future.

A few infantry leaders and soldiers are introduced to a new system during its operational testing and are given an opportunity at that time to identify hazards or unsafe equipment. Problems can then be eliminated, or reduced to a level that is acceptable to the designated decision authority, before the system is deployed.

Most users, however, do not see a newly developed system until their units receive it. Although any corrective action at this point will be expensive and more difficult to implement, these users, too, have a responsibility for promptly reporting failures or accidents in the field.

During the deployment phase, the personnel in the units' local installation safety offices play an important role. They evaluate hardware or procedural changes that have been made; review operational activities to ensure that maintenance procedures are not hazardous and do not cause other hazards; and evaluate emergency procedures and training programs to ensure that proper safety measures have been included. They also investigate any problem, incident, or accident that occurs after a system is fielded to determine the cause, the interim procedures for preventing a similar problem in the future, and the appropriate design modifications (if any) that can permanently

eliminate or control the hazard.

Anytime an accident investigation reveals that a materiel failure, malfunction, or design contributed to the accident, the proponent activity responsible for the equipment must be notified. This report should be submitted without delay even if the item has been repaired or replaced locally. A report of a failure is important because it could signal the existence of a more widespread problem.

Similarly, anyone who has a recommendation that may improve a piece of equipment should submit a report to the sponsoring agency.

To notify the proponent activity, a user must prepare a Standard Form (SF) 368, Quality Deficiency Report (QDR)/Equipment Improvement Report (EIR). A QDR is used to report conditions that result from substandard workmanship (such as materiel that does not conform to design specifications). An EIR is used to report faults in materiel design, operation, or manufacture with the purpose of initiating early and effective corrective action or of recommending improvements. These reports provide a basis for corrective deficiencies and preventing the same problems from being repeated in the development or acquisition of similar systems or replacements for the same system.

A properly completed SF 368 should be sent to the responsible command with-

in five work days after the discovery of the defect. The command should acknowledge its receipt within seven days and must then investigate the report and, if necessary, ensure that the disclosed deficiencies are corrected.

Even though the user is responsible for reporting equipment deficiencies, his local installation safety office should also be actively involved in monitoring the submission of all QDRs and EIRs. AR 385-16 requires that installation commanders review (through their safety offices) all locally initiated equipment improvement recommendations for their effects on safety and for their proper classification.

In addition to reporting equipment defects and deficiencies to their local installation safety offices, all users of infantry systems are also encouraged to provide a copy of each report to the Infantry Branch Safety Office, ATTN: ATZB-SO (Ms. Precy Aguas), Fort Benning, GA 31905-5000, or to report by telephone to AUTOVON 835-3914/3898 or commercial (404) 545-3914/3898.

Precy D. Aguas is the System Safety Engineer assigned to the Directorate of Combat Developments at the Infantry School. A graduate of Mapua Institute of Technology in the Philippines, she also attended the U.S. Army Materiel Command School of Engineering and Logistics.

Putting the Care into Caring

LIEUTENANT COLONEL COLE C. KINGSEED

If you ask any officer or non-commissioned officer if he is a caring leader, his answer will probably be a resounding "yes." We as leaders talk a lot about the concept of caring but, unfortunately, do not always pay the proper attention to the soldiers entrusted to our charge. Failing to care for subordinates is not restricted to any grade or rank; senior officers are often as guilty as junior NCOs.

I would like to offer a few suggestions on how to recognize the most common problems relating to improper care and how to improve the morale and welfare of units by more efficient caring practices. Many of these ideas may not be original, but they can serve as gentle reminders that if we provide for our soldiers, they will willingly perform to the utmost of their ability to accomplish the tasks we assign them. Some concepts may be a bit more controversial, but they are based on my observations during 18 years of commissioned service. The list is by no means all inclusive or in any order of priority.

Field Marshal Erwin Rommel's well-known adage that the best form of welfare for the troops is first class training is as applicable today as it was when he offered it. Excellent training procedures reduce friendly casualties. Tough realistic training produces disciplined units that can absorb a solid punch and then deliver decisive results on the battlefield. Well disciplined units will not crack when confronted with superior firepower or numbers.

Consequently, small unit leaders must instill a spirit of combat discipline in their

units if they expect to survive in combat. The leaders who do this will bring their soldiers home when the fighting is over. As General Matthew Ridgway once stated, "Only through high training requirements, rigidly enforced, can low casualty rates be possible. Only well armed and equipped, adequately trained and efficiently led forces can expect victory in future combat." This is the essence of soldier care.

COUNSELING

Inadequate counseling is another area that needs vast improvement. When was the last time you counseled a soldier to his face when you wrote his performance report? As a senior rater, do you take the time to discuss your rating profile with each officer or soldier? Do you advise soldiers of their promotion potential, opportunities for military and civilian schools, or what they need to do to meet unit standards? Unfortunately, the answer to most of these questions is, "Not as often as I should."

Nothing is more disturbing to soldiers, NCOs, and officers than the perception that their superiors care so little for them that they will not take the time to discuss duty performance. This applies to both positive and negative performance counseling. Leaders must make time to tell soldiers where he thinks they stand. There is nothing worse than receiving a negative efficiency report or a counseling statement when all along the soldier felt that he was performing to standard.

One final word on efficiency reports

is in order. As future field grade and general officers, first sergeants and command sergeants major, leaders should never fall into the pattern where they rationalize their failure to counsel subordinates on their reports. A soldier's efficiency report is the most important item in his official file. If you are making decisions that will inevitably affect a young soldier's or leader's career, then take the time to discuss your rating with him. Don't be "too busy" to counsel him. Call it professional courtesy if nothing else.

A third area that many leaders overlook is the reception of soldiers into a unit. It is not enough to have a good plan on paper or simply to assign sponsors to incoming personnel. Check up on the sponsors. Are they actively helping the soldiers and their families in the transitional process? Or did they merely pick up the soldiers at the airport and drop them at the orderly room? Are incoming soldiers given enough time to settle their families before being sent to the field? Does the chain of command actively assist soldiers in finding adequate housing? Remember that an incoming soldier's lasting impression of the unit is often based on how well he was received when he arrived.

As important as a soldier's reception into a unit is, so is his departure. Do we as leaders ensure that award recommendations are submitted in a timely fashion? Do we see that dedicated soldiers receive their good conduct medals, end-of-tour awards, and Army lapel pins in company formations in front of their contemporaries?

Too often, award recommendations are

made so late that a soldier receives his award after he leaves a command. Sometimes he gets it in the mail. Our soldiers deserve better than that. Let each soldier be recognized in front of his friends and comrades in arms. Give immediate gratification where it is warranted. Present marksmanship and skill qualification badges on the spot. Not only will this increase a soldier's pride in the unit, but it will also give him an incentive for better performance.

It is equally important to correct and instruct soldiers who are not meeting the standard. How frequently do junior officers and NCOs fail to make corrections on the spot for uniform violations, failure to render proper military courtesy, and the like? Sooner or later, someone will make the correction, but generally not until numerous leaders have failed to do it.

Periodic inspections also contribute to the well being of a unit. Why are some units more cohesive than others? Why do some commands routinely perform better in tactical and garrison environments than others? I believe you will find a strong command presence in the better performing units. The squad leaders check their men and equipment, the platoon sergeants and company commanders

check and track training performance, and so on.

Closely related to inspecting subordinates is teaching them how to perform at the next higher level of responsibility. The greatest contribution a leader makes to the Army is training the soldiers who will then train others to assume positions of increased responsibility. Commanders should train platoon leaders, and first sergeants should train platoon sergeants, to take their place on the battlefield. In fact, I judge the success of every leader on how well he does train his immediate subordinates.

Last, but certainly not least in importance, the most caring leaders I have observed are those who take time to talk to their soldiers. What is wrong with a platoon leader or company commander taking the last 15 minutes before the final formation on Friday to outline the next week's activities?

Today, the U.S. Army has the best trained, best equipped, and best educated soldiers in its history. These soldiers, if properly led, are capable of accomplishing the most demanding mission we as leaders can devise. They will perform better, however, if they know what to expect, and if their leaders keep them informed. In units where the corporals and

sergeants continually brief their soldiers, nobody fails to get the word.

There are certainly numerous other examples of ways to improve soldier care. Caring, as one of the Army's four major pillars, is as important as training, leading, and maintaining—perhaps more so—because it contributes heavily to the other three pillars. We must recognize that units in which soldiers feel their leaders demonstrate genuine care for their well being will perform better in training and in combat.

That is the challenge we as leaders face in the modern Army. It is not really different from the challenge all leaders have faced throughout the history of warfare. If leaders care for their soldiers and lead by example, the battle is half won before the first round is fired. Now is the time to put the care back into caring.

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

SWAP SHOP



STAR CLUSTER HOLSTER

In a light infantry unit, the soldiers carry the LCE (complete with bayonet, AN/PRC 126, three ammunition pouches, and the like), rucksack, ammunition, water, and pyrotechnics. Besides adding weight, the pyrotechnics are bulky, and there is really no good place to carry them. Star clusters are the worst. If you put them in your cargo pocket, they don't fit right and tend to irritate your thigh if you move a long distance. The rucksack or buttpack are not a good solution either, because you can't get to them in a hurry when you need one.

While in my company arms room, I noticed a group of cases for the bipod legs that automatic riflemen carried be-

fore the M249 SAW became part of the inventory. According to my unit armorer, he had turned in the bipod legs but the supply system did not want the cases.

I took these cases and tested them with a star cluster, and the experiment was a success. This "holster" takes up only one-and-a-half or two inches on the LCE and allows easy access to the cluster. I was able to carry two or three on my LCE and one or two clipped to my rucksack.

The holsters are also a good place to carry acetate overlays or several chemical lights.

The stock number for this item is 1005-00-992-6676.

(Submitted by Lieutenant John E. Hodge, 1st Battalion, 506th Infantry, in Korea.)

PAST TIMES



EDITOR'S NOTE: In the November-December 1990 issue of INFANTRY (pages 28-31), we reprinted "The Middle East: A Traveler's Guide," by Charles L. Black, from our November-December 1970 issue (pages 8-11). A companion article that also appeared in that earlier issue (pages 6-7) is reprinted below. Both articles outline some unique problems that combat

leaders—as well as commanders of combat support and combat service support units—are likely to encounter in the desert.

S.L.A. Marshall, a well-known author and syndicated columnist, observed at first-hand the Sinai War of 1956, the Lebanon crisis of 1958, and the Six-Day War in the Middle East in 1967.

THE DESERT: It's Different

S.L.A. MARSHALL

The late Justice Holmes is credited with the classic remark that no generalization is worth a damn, including this one. Because no two deserts are alike, one had best heed that warning when writing about the special problems of desert warfare.

The Namib in Southwest Africa and the true Sahara are clearly impassable for armies. Their unbroken and massive seas of dunes make them so.

Much of the surface of the Sinai is blocked to military columns by the same kind of barrier, no less imposing. Back a jeep a few meters off the road and it is stuck. But the Sinai is not the whole Middle East and there is desert country directly east of the Jordan River where motor vehicles can wheel about almost as freely as on the Bonneville Flats.

What is invariable, however, in fighting operations across desert country, is that the water supply must finally dominate movement and the side that is least roadbound has the decisive advantage, all else being equal. In desert campaigning, the distance between wells and oases has a strangulating hold on tactics.

Being barren, the desert cannot be conquered by armies. Of itself, as Winston Churchill once wrote, the desert yields nothing to them but hardship and suffocation. To occupy it is therefore purposeless and wasteful, unless occupation is an essential step toward ultimate security.

It is this very singleness of purpose about desert warfare that makes it unique. The arena is suitable for nothing except primordial combat, with death or survival as the issue. All movement is limited or regulated by the availability of water, and all maneuver seeks the destruction of the enemy force.

A column may be stopped by fuel exhaustion and suffer no

real hurt. Beached and waterless, however, its people are as vulnerable as the 40,000 Persians who, in 500 B.C., marched from Kharga to destroy Siwa and were themselves destroyed to the last man by heat and thirst.

The fighting tank was so named because when first developed, it was disguised as a water tank for service on the Middle East desert. While the point is almost allegorical, 55 years later there is still no replacement for either in desert fighting operations. Both fighting tank and water tanker must be up front, with water in plentiful supply. Then there is no need for a salt therapy. The Israelis, who don't use salt tablets, didn't lose a man from heat exhaustion in the 1967 Sinai campaign.

All infantry should be mechanized, rather than motorized. Unless artillery is self-propelled like mechanized infantry, it stays roadbound, unsuited to flanking movements, incapable of supporting surprise attack, and so it becomes a drag on the armor.

Foot infantry's place is in the halftrack, or armored personnel carrier (APC). It may be good for a march of five or six miles during a nighttime approach over ground forbidden even to tracked vehicles. But more than that by night, and even half as much by day, may drain it of all fighting power.

Night operations are a boon to troops who know the terrain like the palm of their hand and a reckless risk for those who don't. In this respect, desert operations differ not a bit from others. There is no easier way to scramble a force than to deploy it at night on jumbled, unfamiliar ground. Voice recognition is about five percent efficient in the dark. Too quickly, men drift away, units become mixed and all control is lost.

Man needs rest and sleep. Just try and get it under a baking sun. Night operations are justified mainly when the blitz is on, the enemy is clearly off balance, and the advantage to be won clearly requires a continuing momentum.

In their book *Alternative to Armageddon*, General I.D. White and Colonel Wesley W. Yale see a prime model for desert operations in the 1967 sweep to Suez by the armored army under Israeli General Yeshuyahu Gavish. Strike with all power, get the objective won as swiftly as possible, and thereby keep casualties down. That, they say, is the lesson.

Like another brilliant model, Cannae, however, the Six-Day War did not settle the dust. It was a forced-draft plan through-out, demanding more of men and the gods of chance than is likely to be gained again. The Israelis went the limit of risk, believing that they had to beat Egypt in four days or see the United Nations intervene.

DEMANDING

Still, the all-out attack from base to base has no alternative in desert warfare, since the enemy is bestride the waterhole. Not for that reason alone, but because I feel it a principle that has been proved sound time and again by the boldest commanders in our time—for example, Patton and Rommel—I hold with the Israeli idea that the logistical tail must not be allowed to snag or to wag the combat dog.

Take the chance and keep fighting movement free! Each combat column should move out with enough basic supply for men and machines to see it through the day. Resupply can come along by helicopter or the road under cover of dark. Whether we can adjust or liberate our staff thinking to loft such an ideal and hold with it should be less of a question today than formerly. In Vietnam operations, we have taken equivalent risks repeatedly.

The airborne attack and airmobile deployment of patrols, strike forces, and reinforcements are highly suited to fighting in the desert. Good drop zones and landing zones, though not

ubiquitous, are more common than in country that seems more hospitable, or for that matter, in jungle-clad hills. Any dune promises a featherbed landing, and in Sinai there are far more dunes than wadis. Forest and swamps, the bane of paratroopers during the fighting in Western Europe, are not to be found.

It may be asked: How about the threat to the vertical attack that comes of sophisticated antiair weapons, such as have already appeared along the Suez? The threat is indubitable. Our losses of aircraft and the men aboard due to ground fire have been grievous even in Vietnam, where sophisticated is a less-used word.

Similar questions probably have been raised with the appearance of every new weapon since before the first appearance of Greek fire. There is only one answer in logic: The enemy with his weapon cannot be everywhere, and as Willie Keeler said about wielding a ball bat, the secret of success is to hit 'em where they ain't. Having laid down this policy guideline, I call on intelligence to provide the implementing detail.

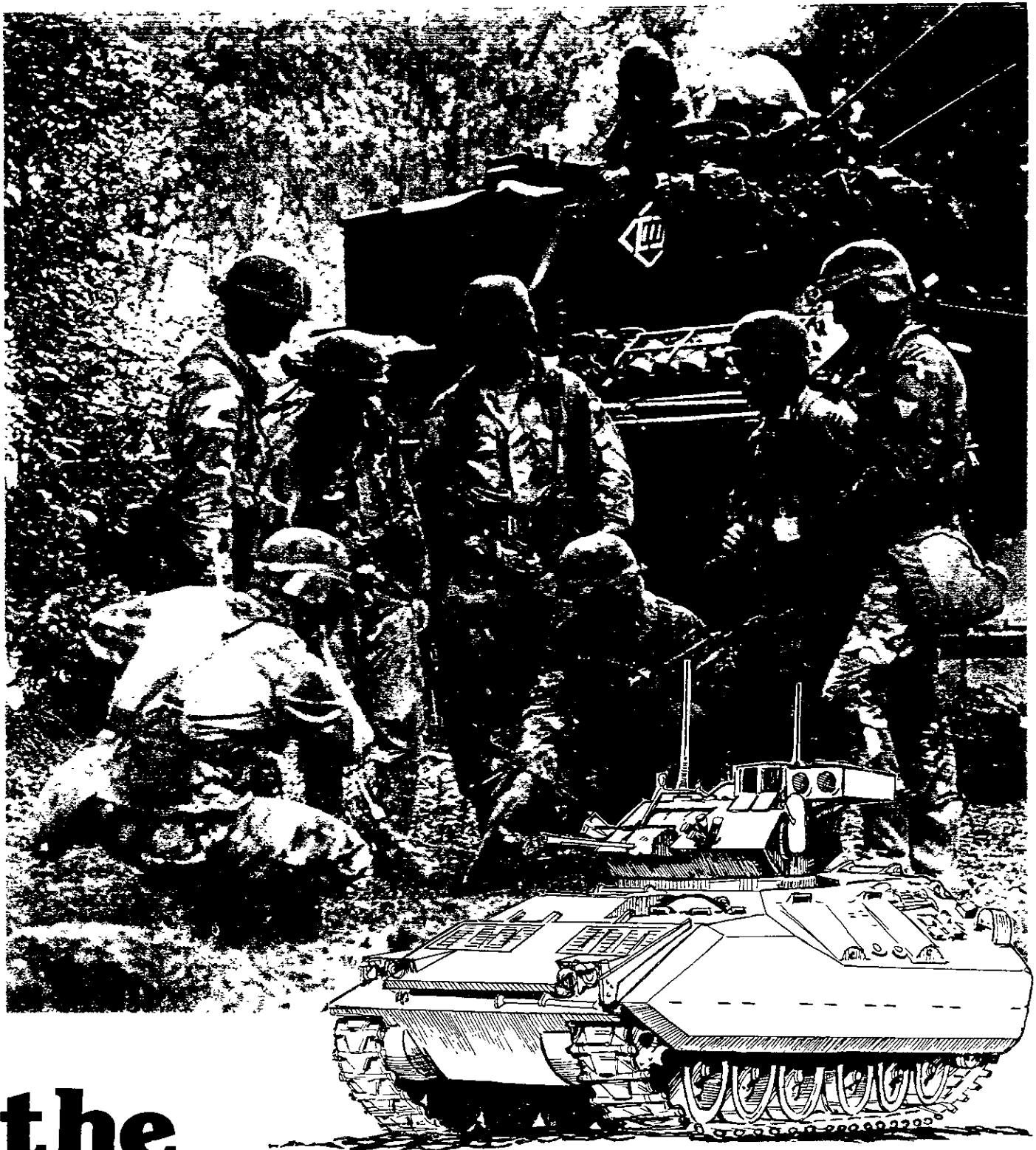
Over my lifetime, I would say that we have made too much of the commanding importance of high ground in our schooling of officers, and it has cost us dearly many times. Experience in Vietnam may have conditioned a larger number to understand that there are other values, sometimes more prizeworthy.

High ground in desert fighting is the prime consideration when it constricts a pass, commands a crossroads at a workable range, flanks a main highway over sufficient distance to keep a column in prolonged enfilade or, when fortified, protects the approaches to a port, main city or watering place.

Otherwise, leave it to the birds, meaning the ravens and vultures. Where there can be no sustained linear fighting because the object itself is unrelated to the outcome of the campaign, high ground is another mirage.

We haven't looked at desert operations for the last quarter century. It could be about time. There's much to learn, and when we last stopped, we had hardly begun.





the BRADLEY challenge

Lieutenant Harry C. Andress

The challenge the M2 Bradley infantry fighting vehicle (IFV) has presented is far-reaching and fundamental for all leaders at platoon level, from the platoon leader on down. The essence of this challenge lies in overcoming the dichotomy between the mounted element and the dismounted element and forming the two into one team capable of fulfilling the Bradley's infantry mission.

Accomplishing this mission implies the most demanding aspect of the Bradley concept—that of training the soldiers in crew drills that will enable them, through cross-training, to retain the traditional skills of infantrymen as they move through the rank and position structure of 11M soldiers.

Mounted versus dismounted is a constant theme when a platoon leader attempts to understand, define, and implement the Bradley concept: The M2 can destroy other vehicles, but its truly unique and primary role on the battlefield is its dismounted function.

Where, then, does the priority in training, tactics, and leadership lie when a platoon leader has an infantry-carrying vehicle that has far more measurable kill capability than the troops it transports? This is the complex challenge the Bradley platoon leader faces in trying to wargame his place on the fluid battlefield of the future.

A platoon leader fresh out of the Army's system of schools must be prepared for a considerable amount of on-the-job training, especially in tactics. He will quickly find that his job requires an understanding of armor, improved TOW vehicle (ITV), and infantry platoons.

The instruction a future platoon leader receives in the Bradley Commander's Course is a good and necessary introduction to the Bradley in a technical sense. But this training is oriented more toward the track commander than the platoon leader or company commander. The Infantry Officer Basic Course and the Ranger Course give a lieutenant an excellent background in "light" or "straight-leg" Infantry operations, but the only preparation he receives for a Bradley unit is one week of a mechanized infantry field training exercise (FTX), which uses M113s.

He does not truly grasp the amount of firepower his platoon has until he sets up his first full scale defense, such as the live fire exercise at the National Training Center (NTC). As he prepares to receive and give his operations order, he finds that he has to emplace or check target reference points (TRPs), maximum engagement lines, range cards, sectors of fire, final protective lines (FPLs) or principal directions of fire (PDFs), left and right limits, and the like for 18 crew-served weapons, along with his fire support and obstacle plan. A Bradley platoon has more raw combat power than a light rifle company, and the corresponding difficulties in their employment.

On the offense, the platoon leader's tasks are equally complex, and offensive tactics demand quick reactions and decisions. Because of the Bradley platoon's firepower and flexibility, the platoon leader must evaluate the situation rapidly and decide how he will use his mounted and dismounted elements. Usually, he simply will not have enough time to analyze the situation thoroughly.

A hasty attack or chance encounter, however, presents the question of when, or whether, to dismount. Should the platoon use its vehicle firepower, speed, and mobility to defeat the enemy? Or should the dismount element be sent out to get in among the enemy with the Bradleys in support? Or should the dismount element stay with the Bradleys in a hide position if the platoon should encounter a tank unit in limited terrain (where the TOW is of little or no use)? Such split-second choices often present themselves while the platoon leader's vehicle is moving at speeds up to 45 miles per hour.

In a deliberate attack, the platoon leader has at least four avenues of approach in maneuvering against the enemy: Remain mounted until contact, use his dismount element on the same avenue to clear the route for the mounted element, use different avenues for the mounted and dismounted elements to assault the objective, or use the Bradleys as a base of support while the dismount element assaults and clears the objective.

DIFFICULT OPTION

When the decision-making narrows to the most basic yet difficult option—whether he should stay with the vehicles or dismount with the ground element—the platoon leader has a difficult task. He is trained for the traditional ground aspect of Bradley infantry tactics in which he can make his presence felt, face to face, leading by example. Yet if he dismounts, he loses substantial control over his most powerful and mobile asset. He also loses his two-net communication capability and his vision of the battlefield, especially at night (with the M2's thermal night-sight).

The best position for the platoon leader depends, of course, upon METT-T (mission, enemy, terrain, troops, and time). Because of the possible loss of momentum in a hasty dismount—a chance or unplanned contact, for example—just the time it takes for him to dismount and be replaced could be costly to his unit.

In a deliberate dismount, the platoon leader will probably want to be on the ground, because this effort becomes the platoon's main focus.

Time and focus, then, determine his positioning. For example, the depth of an obstacle in an in-stride breach equates to the time necessary to reduce the obstacle and thereby becomes a major factor in the platoon leader's positioning. If the obstacle can be breached quickly, there is no need for him to dismount.

The requirement for a separate tactics course for new platoon leaders assigned to M2 units, or even for commanders going from light to mechanized units, becomes more evident as one delves into the complexities of Bradley infantry tactics.

The duality of the mounted versus the dismounted roles also increases the amount of knowledge a noncommissioned officer (NCO) in MOS 11M needs, when compared to an 11B, as he moves up through the ranks. A sergeant, for instance, is expected to hold one of two distinct positions—either gunner or dismount team leader. The difference between these two

jobs is fundamental, as is the training inherent in both.

A BFV gunner is a technician on a complex weapon system, and he is responsible for hundreds of thousands of dollars worth of equipment—and for the M2 driver as well. His abilities, especially in the field, are taxed far differently from those of a traditional sergeant in the infantry.

To be proficient, he needs extensive training. He must be able to engage moving targets with a burst-on-target cannon (where no round strikes the same place twice) while on the move at ranges out to and beyond 1,800 meters, destroy tanks using an antiarmor missile at 3,750 meters, maintain three different weapon systems, and perform other tasks normally associated with tank and ITV gunners. And through all this, he is also expected to stay sharp in his role as a straight-leg infantry leader.

Although the Bradley platoon members have more to work with than their predecessors had with M113s, they actually have less with which to handle their main mission—that of dismount operations. The M113 can carry nine men and a crew of two, the M2 carries only six men plus three specialized crewmen. Even at full strength, the Bradley platoon, by doctrine, dismounts only 18 11Ms. Yet the requirements given the platoon's "ground pounding" section remain the same as those of the larger dismount section of the M113 platoon. These men on the ground have always proved critical in combat. Tracks can secure an objective, but only infantrymen can seize and hold it.

IMPROVED QUALITY

Quantity, however, is not nearly as crucial as quality, and quality is improved by the M2's ability to carry the fight to the battlefield—along with its dismount element. This allows the dismounted soldier to carry more weapons and ammunition, because he will rarely operate more than two kilometers from his vehicle or, even less often, carry out extended patrols of more than 12 hours. The 11M soldier will therefore be less fatigued when he begins his main task of closing with and destroying the enemy, because he has done most of the "closing with" riding in a vehicle.

The smaller dismount section can therefore handle as much firepower as their light infantry brothers: Three M60 machine-guns, six squad automatic weapons, and three Dragons on the ground. (The Bradley dismount soldier has been called the "lightest" infantry in the U.S. Army; all he needs to carry is his ammunition, because he has a 26-ton "rucksack" working nearby in which to carry the rest of his gear.)

The extra work load and extra abilities that are expected of 11M soldiers point to the need for intensive training and cross-training. The fewer soldiers, the more essential it is for the individual to become competent in all aspects of his trade, from Dragon gunner to team leader. Each Bradley vehicle dismount team must be able to function in the unit's full range of requirements, from bounding overwatch to land navigation (which is quite difficult after leaving a closed-in troop compartment).

Although flexibility has always been the watchword of the infantry, flexibility is rooted in training. Therein lies the challenge to the Bradley leader—to consistently, strenuously develop and sustain his troops in dismount tactics—and this is the driving purpose behind his platoon's mission.

Cross-training in crew and dismount skills can be conducted using readily available resources. The best technique for sustaining dismount skills is to hold field training exercises (FTXs) without vehicles. These are cost effective and allow for the training of pure infantry tactics. To be truly effective, however, these exercises must include all members of the platoon—the crewmen cannot be left behind to pull maintenance in the motor pool.

Many of the BFV crew requirements can be trained in the motor pool by practicing the Bradley Gunnery Skills Test in Field Manual 23-1. Cross-training drivers in gunnery requirements during these periods is particularly fruitful.

OPPORTUNITY TRAINING

This is great opportunity training, but it can be handled more efficiently if specific times for it are entered on the training schedule and the resources are coordinated under the supervision of the company and platoon master gunners. The use of simulators such as the U-COFT (unit conduct of fire trainer) and the SIMNET (simulations network) increases crew proficiency. It is also valuable as an orienting and sustaining tool for non-crewmen.

The biggest weakness is often in the skills of the dismount element, because everyone in the platoon, from private to lieutenant, tends to focus upon the vehicles with all the capabilities and maintenance associated with them. FTXs for the dismount soldiers should therefore be emphasized. This "light" field training has first-rate benefits for all, but especially for the staff sergeant Bradley commanders who normally remain in the turret and are not expected to dismount at all during tactical play. This "ground pounder" training will enable them to practice leading by example, the "Follow Me" professionalism that has always set the infantry sergeant apart.

Squad training requirements for the dismount soldiers are especially difficult for a Bradley unit, because crew slots take priority. Gunner and commander positions often claim the platoon's most experienced NCOs. Likewise, the driver slots claim the most promising, best motivated lower ranking enlisted men. And the crew members, once in garrison, are generally lost from dismount training because of maintenance or crew drill.

This often leaves a smaller, less experienced pool of instructors for classes or activities at squad level, especially if the platoon does not have its full complement of NCOs.

A good technique for individual training in garrison is to pool assets and instructors at company level. Although this breaks down the traditional squad integrity in which individual training is led by the squad leader, it does make for the most productive training.

When dealing with the Bradley concept, this re-defining of

accepted norms is, in fact, a constant theme, and the most difficult to accept for many has been the breakdown of the squad as the fundamental building block of the infantry. The delineation of 11Ms into squads is quite blurred and the split along dismounted and mounted lines is the primary cause.

The structure of the Bradley platoon is evidence of this breakdown. By doctrine (which was revised in January 1990), the platoon is organized into two mounted sections and two dismounted squads. This has a tremendous effect on squad level leadership and training. Each of the two staff sergeant Bradley commanders is now responsible for two M2s and four men and the two dismount squad leaders have nine soldiers each. This further differentiates the training requirements of the 11M NCO, who holds a position analogous to that of a staff sergeant in an armor unit as he progresses in rank. The M2 crewmen are further differentiated, because they are no longer in a squad but in a section.

Although this is a necessary development, we must be careful to ensure that these staff sergeants and Bradley commanders continue to lead their soldiers in the traditional infantry tactics to avoid further solidifying the crew-dismount split.

The best solution is for all four staff sergeants to be considered equivalent to squad leaders, with shared responsibilities across distinct squad or section lines and where leaders do not guard their own turf but work together to train all of the platoon's troops. A balance must be struck and enforced if these leaders are to remain competent enough to train in all aspects of the infantry.

The Bradley infantry fighting vehicle is an excellent machine that will help the platoon accomplish its missions—if the soldiers who operate and ride in the vehicle are properly trained. But the Bradley's capabilities and limitations must be put in perspective. True, it does not swim as well as the M113; it has a high profile; and it does not take a 125mm round as well as a tank does. It is equal to the job of keeping up with the M1 Abrams whether it is in the swamps and forests of south-

east Georgia, the desert and mountains of the Mojave, or now in the Middle East. Even the relatively small number of dismount soldiers in a Bradley platoon is not a major drawback.

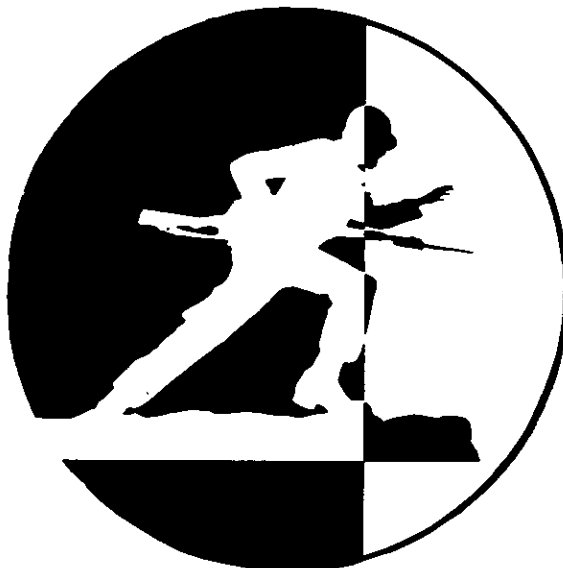
The number of dismounted soldiers complements the mission essential tasks of a mechanized unit, even when a Bradley platoon is cross-attached to a tank-heavy team. These tasks are principally obstacle breaching, local security patrols, listening and observation posts, antiarmor ambushes and hunter-killer teams, reconnaissance patrols, covering a dismounted avenue of approach, and clearing an objective. (Local security is not a problem if 360-degree scanning is performed by the team's vehicle thermal sights.)

The platoon, to perform these missions, must maintain a certain training standard, and that standard is clearly established by a list of collective and individual tasks in the Bradley Platoon ARTEP 7-247-11-MTP.

The Bradley concept provides the mechanized infantry with tremendously increased organic firepower and mobility. This mobility in turn furthers the footsoldier's protection and flexibility, counteracting the potential threat posed by such fighting vehicles as the Soviet BMP.

The challenge implicit in this expanded firepower is in training the infantryman in his essential tasks. This can be done without degrading the critical skills of the traditional infantryman, even as the individual soldier moves from crew member to dismount element and back again while proceeding through the 11M rank and position structure. The successful employment of the Bradley platoon's various assets is dependent on this cross-training effort for the entire platoon, from private to lieutenant.

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THOUGHTS ON

MEDIUM

OR

MOTORIZED FORCES

Lieutenant Colonel Thomas R. Rozman

In response to a changing world, our military requirements are now being reviewed. The emerging outline of our future ground force is one of smaller organized force levels, both Active and Reserve Component, that must be responsive over the full spectrum of intensity.

Although this force must continue to be able to deploy and to execute the most intense kind of ground battle we can foresee, it is most likely to be applied at the middle or low end of the conflict spectrum. This means we must have a substantial ground force that is strategically deployable by the available strategic movement assets (for quick response, by aircraft; for long term sustainment, by ship).

Once deployed, these forces will have to be able to operate effectively, on both an operational and a tactical level, against forces that range from medium to small regular military establishments with sophisticated and significant heavy forces to the military and paramilitary arms of political movements or criminal elements.

How does the Army fight on such an array of possible battlefields against such a range of threats? How do we develop, organize, man, and equip a smaller organized Active Army and Reserve establishment?

Although the answers are not yet clear, indications are that

the force structure may consist of a collection of more specialized maneuver and supporting forces capable of operating as efficient combined arms force packages when they are deployed.

One of the real issues facing the force developers is determining how light infantry units can be integrated with heavy forces or equipped to compete on high intensity battlefields and still be strategically deployable to other areas where we have no forward deployed forces and where we expect to encounter sizable heavy forces.

The answer may lie in two alternatives. One of these might be to develop an augmentation package for light forces designed to give them the equipment, support, and doctrine they will need when they deploy to theaters that require more organic operational and tactical mobility and weapons and other system capabilities than they possess.

The other alternative might be to create a maneuver force permanently organized to operate between the extremes of high and low intensity conflict. This force would be able to team with a heavy force in a non-linear environment to release scarce heavy force elements from such missions as the security of critical lines of communication, denial of terrain, economy of force, and other "corps fire brigade" requirements.

This force would also be more responsive strategically for "stiffening" light force elements. It would be rapidly deployable and highly mobile, and it would have organic weapons capable of defeating enemy heavy forces in contingency theaters. Such a force would be a motorized or "medium" force.

Off and on during the past 50 years, the Army has dabbled with the idea of creating motorized formations. In fact, motorized divisions mounted in "soft-skinned" trucks were part of the force structure during World War II. For many valid reasons, however, the Army has not developed a permanent motorized or medium arm as part of its force structure. The reasons range from issues of battle doctrine and warfighting concepts developed over the past 45 years, to funding constraints, to the Army's internal and external political interests.

Other armies have also considered motorized formations simply because as necessary as heavy forces have been and will continue to be on any high intensity battlefield, they are extremely expensive to develop, sustain, and continuously modernize. Consequently, two conditions have driven various armies to examine the use of motorized formations in their force structure.

First, in conflicts of a year or longer, where a substantial number of heavy forces have been employed, cheaper motorized units have been used for any ground mobile formations required beyond the existing heavy forces. Thus, the expanded requirements for security and strategic reserve forces could be organized on an infantry basis more quickly, efficiently, and affordably. Then, as the equipment became available, these forces could be converted to a motorized or heavy format. In the interim, these infantry formations could be augmented with whatever heavy weapons and transport might be at hand. Too, countries that faced the added challenge of strategic deployment and sustainment typically found themselves making trade-off decisions based on the needs of the operational force structure and the available means of transportation.

Second, countries with limited fiscal resources that required proficient forces with effective organic operational and tactical mobility, as well as a capable array of heavy weapons, have typically considered the option of medium forces. If we read "medium" as "motorized" (wheeled) systems, three sub-aspects are important to understanding this trend:

- Wheeled systems, although traditionally inferior to tracked systems in cross-country trafficability and in their ability to support the heavier armor protection packages (systems weighing more than 21 tons) and larger caliber cannons, nevertheless could be deployed at far less cost. When developed, they could be effective enough for most missions that required organic mobility and heavy weapon augmentation.

- Wheeled systems tended to be significantly less expensive to operate and sustain than tracked systems.

- Wheeled systems were somewhat less sophisticated in their automotive design and running gear, and it was therefore easier to train soldiers to operate them. (This has been a critical concern in the past to countries whose typical soldier was less able mechanically than his brothers from the industrialized nations.)

In recent years, wheeled systems have become increasingly capable in terms of cross country mobility and heavy weapons capability. Currently, there are wheeled armored systems that are reasonably competitive with light to medium tracked systems in tactical mobility and superior to tracks for operational mobility on road networks that are reasonably intact. New developments have made issues associated with indirect fire damage to tires less critical.

The objective of this discussion is not to argue that wheeled systems are a more cost effective alternative to tracked systems for a heavy mounted force. There is currently no superior technological substitute for the cross country tactical mobility of a tracked system—and none is in sight.

My purpose is to show that, given the wider spectrum of conflict that a smaller army may have to respond to, another type of force may better support our growing need for affordable strategic and operational flexibility while at the same time reducing the trade-off of capabilities.

ALL-ARMS MANEUVER FORCE

This force component could be a permanently organized medium or motorized arm mounted on wheeled light armored systems. (This idea has been revisited most significantly in recent times by various concepts tested by the 9th Infantry Division.) It would be an all-arms maneuver force designed to capitalize on its superior organic operational and tactical mobility, staying power with its weight of infantry and heavy caliber weapons mix, and its greater protection over light infantry and "soft-skinned" systems against fragmentation and some small arms. At the same time, this more strategically mobile force would represent a more responsive package for augmenting a light force, at least initially, in a contingency area. Special operations forces and aviation would be integrated as the mission required them and within its format, combat, combat support, and combat service support would be organized into the medium force as appropriate.

What does a medium force bring to the battlefield that is different from what a heavy or light force brings? I have already indicated some general possibilities.

For ease of development, I will start with a medium force on the high intensity battlefield and work down to forces for the lower intensity levels. Also, for purposes of brevity, I will discuss medium force in terms of a separate, all-arms brigade. (It could be a regiment or group, as appropriate to the most current thinking—in other words, an organization of two or more maneuver or line battalions.)

One type of medium brigade might look like the one in Figure 1. This organization is similar to the design of existing separate brigades. It is robust and could conceivably be more streamlined—with two motorized rifle battalions, for example, instead of three, and an assault gun and missile company instead of a battalion. A military intelligence (MI) detachment could replace the MI company.

In fact, the brigade could easily be tailored depending on its contingency mission. If its purpose was to augment forces

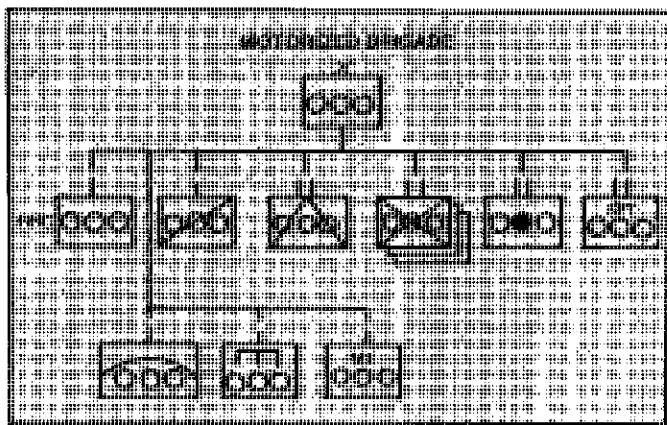


Figure 1

on an intense battlefield, the organization shown would be desirable. If it was oriented on the lower end of the contingency spectrum, it might look like the one in Figure 2.

The organization shown in Figure 1 represents the best one for operating on a non-linear, high intensity battlefield. For purposes of this discussion, the brigade would be mounted on a family of vehicles with capabilities similar to those of the current Marine Corps light armored vehicle (LAV). To allow independent sustained operations, it would combine a balanced weight of all arms (less traditional armor and mechanized infantry heavy assault units). It would contain a mix of heavy weapons.

A force with such capabilities would offer a corps or force commander flexibility in the following areas:

- Conducting economy of force missions.
- Maintaining linear flank integrity.
- Sealing penetrations in linear deployments.
- Shaping penetrations to present counterattack opportunities.
- In non-linear operations, enabling the commander to range forward, to the flanks, or to the rear to delay or deflect forces that might compromise the operational objectives.
- In linear and nonlinear situations, responding quickly and effectively to any threat to lines of communication by a Soviet-type airborne force or other substantial force concentration.

The brigade would also give a corps or force commander a highly mobile and potent self-contained unit that could respond quickly and effectively to missions for which he would otherwise have to use his limited heavy force assets.

The brigade shown in Figure 1 has six combat, combat support, and combat service support battalions as well as five companies of brigade troops. (The reconnaissance, air defense, engineer, and military intelligence elements could be organized into a combat support battalion.)

The motorized infantry battalion would be organized as shown in Figure 3. Its main objective would be to support a large infantry dismount capability. The squad carrier ideally would have a two-man dedicated crew and carry ten to twelve infantrymen. Depending on the organization of a four-vehicle platoon headquarters, this would mean 33 to 39 dismounting infantry soldiers. A three-company battalion, at full strength, would support about 300 to 500 dismounted soldiers. The

brigade would be able to place 900 to 1,050 infantrymen on a piece of terrain.

If the carrier was equipped with an automatic cannon such as the 25mm, it would give the infantry platoon a powerful point target and suppressive fire weapon. Organic medium antiarmor weapons would increase the platoon's armor-killing effectiveness, and the application of direct and indirect fire assets at battalion level would further multiply the infantry's effectiveness.

At battalion level, a support package would be provided to allow such limited independent battalion missions as traditional post and screen missions in a nonlinear environment.

Two key elements from the combat support perspective would be the direct and indirect fire support packages. The ideal would be a mortar platoon of six breech loading turret-120mm mortars. These weapons would be provided with mortar rounds equipped with improved conventional munition (ICM) packages, as well as with the traditional high explosive, smoke, and marking rounds. The weapons would also be equipped with low velocity, direct fire rounds designed to "bust bunkers" and "sweep" infantry attacks. The latter capabilities might prove particularly useful in built-up areas.

The antiarmor platoon, in its best design, would have a mix of missiles and 105mm assault guns (one example is Benet Laboratory's low recoil system, which has fired from the eight-wheeled LAV used by the U.S. Marine Corps). The guns would provide a responsive, relatively cheap, large-caliber, fire-and-forget capability that would be ideal for the tighter work in built-up areas and compartmented or broken terrain. Where there were opportunities for extended reach, the missile would be employed. Although the missile would initially be an improved TOW, the objective system would be the LOSAT.

The gun-missile platoon would be organized into three two-gun sections and three two-launcher sections. The half platoons (gun and missile) would be commanded by a sergeant first class and the sections by staff sergeants. The second vehicle in a section would be commanded by a sergeant. At platoon headquarters, a senior lieutenant would lead and a senior sergeant first class (a master sergeant might be considered) would assist.

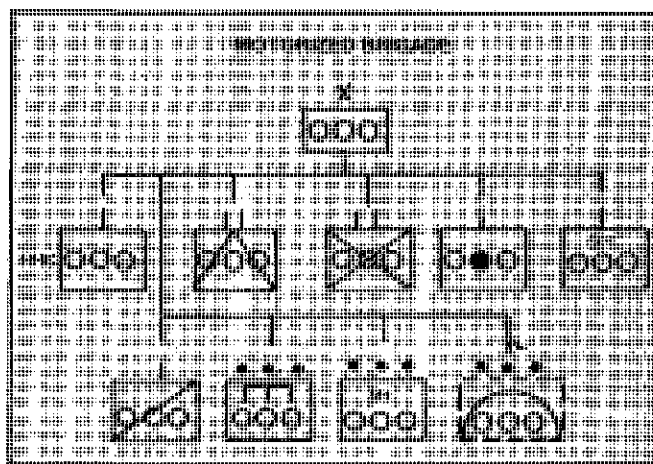


Figure 2

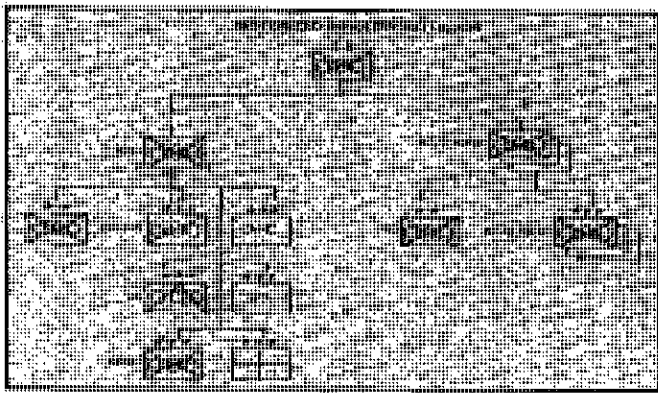


Figure 3

The command and control (C2) of the battalion would be mounted in carriers to provide a more stable, responsive, and survivable C2 capability. Such a C2 structure would also be compatible with those of heavy forces.

The reconnaissance platoon would consist of a headquarters and two two-squad reconnaissance sections; each squad would consist of two vehicles. The desired complement of vehicles would be nine carriers adapted to the reconnaissance function—C2 capabilities, weapon systems, and the like.

An organization for the antitank battalion is shown in Figure 4. This organization indicates a pure assault gun company and a pure missile company, but these could be mixed companies. The platoon organization is not as robust as the one in the motorized infantry battalion. It has three squads of two guns or missile systems for a total of 12 per company. Thus, the battalion has 24 gun vehicles and 24 missile vehicles. Exclusive of medium antiarmor weapon systems (AAWS-M), the brigade would have four large-caliber antiarmor gun and missile systems—a potent direct fire capability for a force designed to make the most of a terrain denial or strongpoint option.

Also shown in Figure 4 are reconnaissance and mortar platoons, which would provide the brigade commander with an additional maneuver battalion headquarters if he chose to task organize that way.

A motorized brigade of this type would be well suited to operate on an intense heavy battlefield as a corps force multiplier. Its potential for operational employment (because of its greater road mobility at speed) would be superior to that of a heavy brigade with less consumption of Class III (petroleum products) and Class IX (spare parts). Therefore, its ability to support a corps commander's operational planning by rapidly occupying widely dispersed terrain across the corps area would underscore its combat multiplier potential at the operational level.

It would also provide a force at tactical level that could place a significant infantry concentration on selected terrain well in advance of an enemy's arrival. This force would be capable of putting up a tenacious fight against the heaviest elements and of withdrawing quickly under pressure employing its organic assets.

When forces were employed in response to the lesser demands of a medium intensity battlefield, the motorized force

would offer a number of advantages. This would be particularly true when the fight took place under the following conditions:

- Prepositioned equipment was not available.
- U.S. bases did not exist.
- Strategic mobility assets would have to be relied upon for deployment and sustainment.
- A significant number of heavy or motorized forces would be encountered (two or more battalions).

The mix of light and medium forces in the task organization would depend upon where the anticipated fight fell on the conflict spectrum. The light elements would probably constitute the bulk of the force and would be the most strategically responsive elements. However, a motorized force such as the one discussed here could be deployed almost as quickly to reinforce the light units and to improve the ground mobility of the task force and provide supporting large-caliber direct fire systems. The necessary heavy force elements could reinforce them later.

For such operations as these, the reduced organization shown in Figure 2 might be more useful. This suggests maintaining two types of motorized brigades, or possibly tailoring the brigade from a fixed organization; the latter would probably be the more logical approach.

Another recourse might be to maintain a standard table of organization and equipment (TOE) with brigades that were oriented toward high intensity theaters being organized to full TOE while those oriented toward contingency missions might look like the one in Figure 2. Also anticipated would be the organization of battalion task forces or battle groups from brigade assets specifically tailored to a particular contingency that did not require the full brigade.

There are also other alternatives. It is possible that medium forces could employ light tracked systems such as the M113 and its variants. Tracked systems, however, are not well suited to regular movements over long distances at speed—60 or 70 miles at speeds of 45 to 55 miles per hour—without making significant claims on Class III and Class IX supplies.

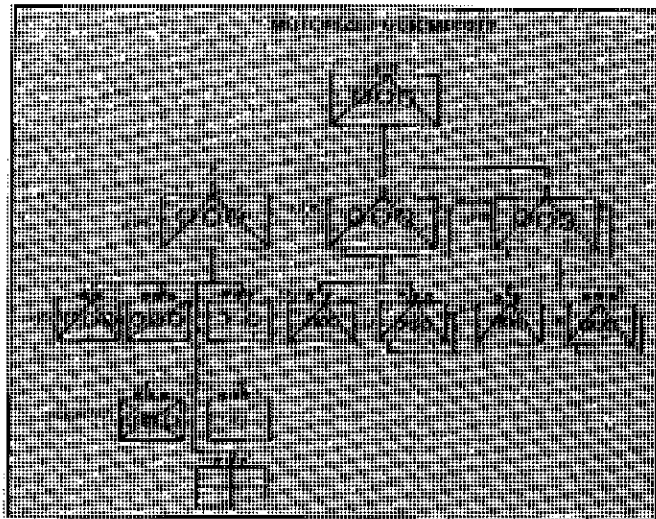


Figure 4

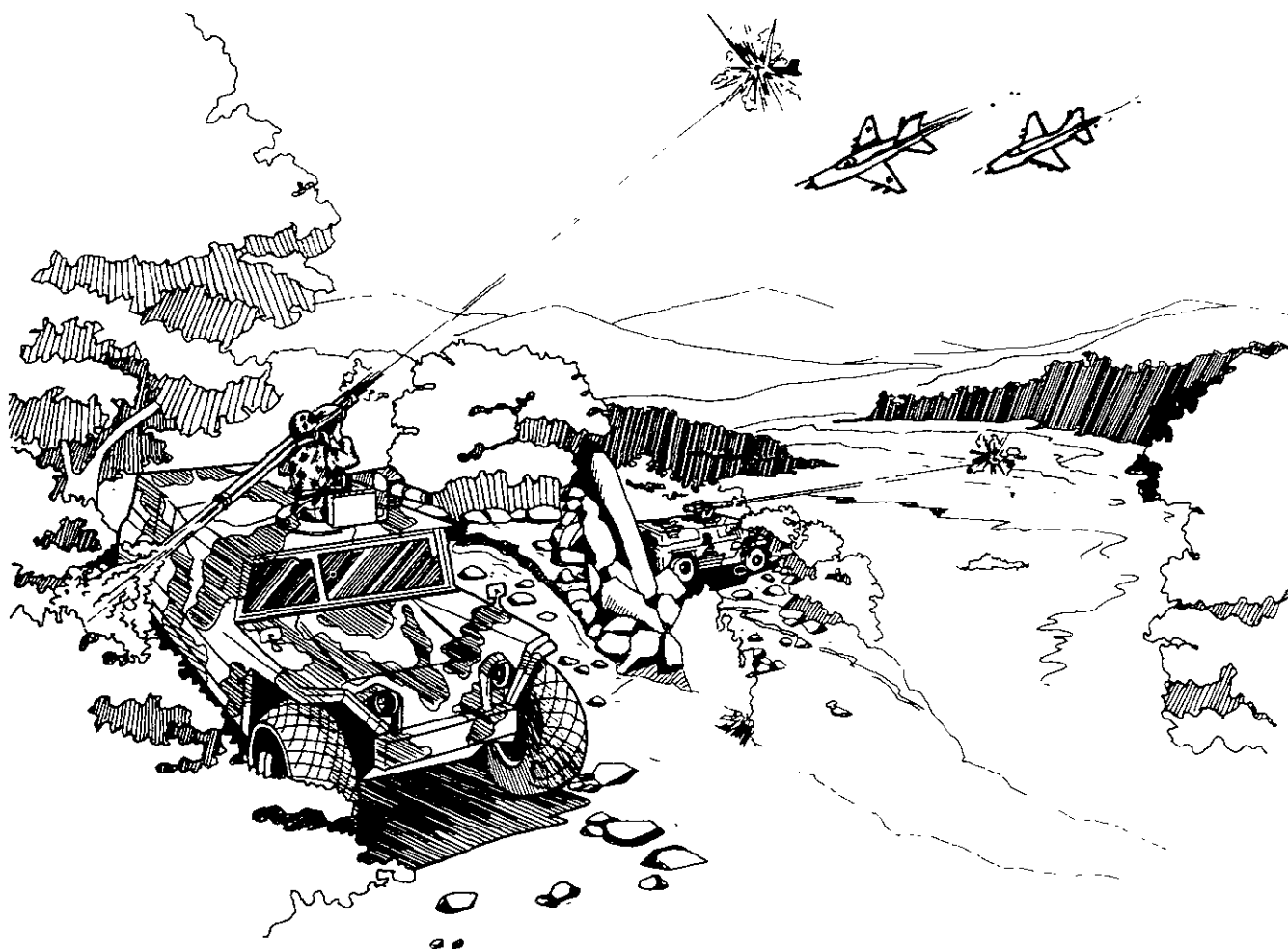
In cases where the tactical mobility of a tracked vehicle is not substantially better than that of the wheeled version, and where the enemy's motorized or heavy system can be dealt with effectively by wheeled systems, the answer seems obvious. Still, the economics of reducing the conventional force in Europe, freeing large numbers of M113 chassis systems for some other application, may become an overpowering argument for light tracked systems.

Developments on the horizon indicate we are going to have a small Army that must be able to respond quickly to a wide array of threats across an extended range of scenarios. Many of the possible battle theaters will be "come as you are parties," meaning no prepositioned equipment or bases and a reliance on strategic lift. To make matters worse, many of the potential opponents will have a significant number of motorized or heavy forces equipped with lethal, large caliber direct fire systems. These forces—deployed with reasonable com-

petence, dedication, and sustainment—will prove deadly if they are not responded to with competitive forces.

My conclusion is that motorized forces represent an effective solution to these challenges. I believe there is sufficient reason to pursue the organization of such a force, possibly on an experimental basis. If the Army is to achieve a versatile, deployable, and lethal force that can respond to threats across the battlefield spectrum of intensity, anywhere our worldwide interests may take us, it may be that heavy, *medium*, light, and special operations forces are the answer.

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IRAQ'S UNWAVERING fist

Major John F. Antal

The Iraqis launched a series of successful combined arms offensives in 1988 that shattered Iran's military forces and brought an end to the eight-year Iran-Iraq War. These offensives emphasized the shock power and mobile firepower of Iraq's armored and mechanized infantry forces. Using armor units as spearheads, Iraq conducted synchronized combined arms attacks that made it the regional superpower of the Middle East.

The use of armor and armored fighting vehicles has been an integral part of Iraqi military doctrine. In late 1980 the Iraqi armor force had about 2,750 main battle tanks, most of which were Soviet-made T-54s, T-55s, and T-62s. But the Iraqis also had 100 Soviet T-72s. By 1990 this number had increased to almost 6,000 main battle tanks, more than 500 of them Soviet T-72M1s. (See also "Armor in DESERT SHIELD," by Michael R. Jacobson, *INFANTRY*, November-December 1990, pages 32-37.)

If war comes again to the Persian Gulf, armor can be expected to play a major role in Iraq's operations, and for the immediate future the mainstays of the Iraqi armor force will still be the Soviet T-55 and T-62 and the Chinese T-59/69 tanks. Dependable and easy to maintain, the T-55 tanks are

equipped with a 100mm main gun that has an effective range of 1,000 meters. The T-62s are equipped with a 115mm gun that has an effective range of 1,600 meters, while the T-59 has a 105mm gun with an effective range of 1,800 meters. All three tanks have a four-man crew (tank commander, gunner, loader, and driver). Because of the age of these tanks, the Iraqis have begun upgrading some of their T-55 and T-62 tanks with additional armor and the 125mm gun from the T-72.

The most modern tank in the Iraqi inventory is the Soviet-built T-72M1, and it is a worthy opponent. All of Iraq's T-72M1s are in Republican Guard units that are likely to lead the main effort of any Iraqi attack or counterattack. (According to reports, the T-72M1 is now being manufactured in Iraq as the *Assad Babi*, or Lion of Babylon.) Its improved composite laminate armor will defeat the U.S.-made Dragon, improved TOW, and TOW-2 missiles fired at any range against its 60-degree frontal arc. (Soviet models of this tank are reportedly equipped with kevlar-type top-attack protection.) The T-72M1 has a cruising range of 480 kilometers, which can be extended by 160 kilometers with the addition of external fuel drums.

The T-72M1 is equipped with a 125mm smoothbore can-



non that has an effective range of 2,000 meters. It has a rate of fire of eight rounds per minute with its automatic loader and carries a basic load of 40 rounds. It is equipped with an improved fire control system, a laser rangefinder, and passive-infrared gunnery sights. The 125mm gun is fully stabilized, providing the tank with a full shoot-on-the-move capability. The tank can accelerate to a speed of 80 kilometers per hour and has an effective NBC over-pressure protection system to help its crew of three survive in a chemical environment.

Iraqi armor is organized with four tanks per platoon in the tank units assigned to infantry divisions and three per platoon in tank and Republican Guard divisions. In addition, a company headquarters section normally consists of two or three tanks. With three companies in a standard battalion and four in a Republican Guard tank battalion, each standard tank battalion therefore has 40 to 45 tanks and a Republican Guard battalion has 55 to 60.

Iraqi armor units are supported by combat support and combat service support elements from their assigned brigade. The movement of Iraqi armor is greatly improved by the use of heavy equipment transport trucks. (The Iraqis purchased more than 1,300 West German tank transporters and used them effectively in the war with Iran.)

During the first year of the Iran-Iraq War, the Iraqis employed a modified version of Soviet offensive tank doctrine, which depends heavily on mass and speed. Iraqi commanders exercised rigid control of the formations, often neglecting the combined arms. They seldom achieved speed in the attack.

Initially, the attack into Iran in 1980 was nothing more than a road march supported by artillery. Tank-on-tank battles were rare. Iraqi armor, faced with ineffective and scattered Iranian resistance, was virtually unopposed. Convinced that an "all-tank" doctrine was the surest way to defeat the Iranians and save Iraqi lives, the Iraqis sent tank units without infantry support to capture towns and cities. But this proved to be a major mistake, because the tanks moved too slowly to be decisive.

Iranian resistance increased as the Iraqis drove deeper into Iranian territory. The Iranians husbanded their armor for counterattack purposes and fought the Iraqis with a force composed mostly of enthusiastic Revolutionary Guard infantrymen.

Against Iraqi armor, the Iranians used infantry rocket propelled grenades (RPGs), antitank guided missiles (ATGMs), Cobra attack helicopters, and even water from irrigation canals to flood low tracts of land.

Faced with these antitank islands of resistance, the Iraqis suffered prohibitive armor losses and their plan for a quick victory failed. Their offensive bogged down because of their failure to use dismounted infantry in terrain that clearly called for this support. During the five months of fighting in 1980 for the urban areas of Abadan, Ahwaz, Dezful, and Khorramshahr, for example, the Iraqis lost 200 to 300 armored vehicles, almost 10 percent of their tank force.

Because of these losses in city fighting, the Iraqis made a major shift in their armor tactics. They switched to defensive missions and continued in a predominantly defensive role from 1981 until 1988. During this period, tanks were employed as mobile artillery, pillboxes, and part of meticulously planned counterattack forces. The Iraqis normally did not mix their tanks with infantry in the front lines but held them in reserve behind the triangular infantry defensive positions, and used them for counterattacks by fire from prepared positions.

The standard Iraqi defensive battle with armor was illustrated during the Battle of the Kharkeh Plain in January 1981. The Iranians assembled almost 300 tanks and conducted an uncoordinated attack that managed to breach the initial Iraqi defensive line. The Iranians moved slowly, however, and without the benefit of reconnaissance. This gave the Iraqis time to maneuver their armor into a prepared defensive area that opposed the Iranian direction of advance. An Iranian division drove into this preselected kill sack and lost its lead brigade in a matter of minutes to the direct fires of Iraqi tanks and ATGMs. Then, proving that revolutionary fervor is a poor substitute for military professionalism, the Iranian commander committed a second and then a third brigade to the same killing ground. When the battle was over, an entire Iranian division of 140 to 215 tanks had been destroyed.

This battle also dramatized the poor state of crew training in both armor forces. The Iraqis lost between 80 and 130 armored vehicles in this battle in spite of the fact that they ambushed the Iranian forces and occupied strong defensive po-

sitions. Most of the tank gunnery occurred at near point-blank ranges. Both sides relied heavily on ATGM fires for the long range destruction of armored vehicles. In fact, long range hits by tanks were the exception throughout the war. Once the Iraqis won control of the area, however, they were able to recover and fix many destroyed tanks, while the Iranians could not.

The Iraqis stayed on the defensive until early 1988 and beat back successive Iranian attacks. The Iranians launched one "final offensive" after another and gained ground but suffered enormous casualties. Their personnel losses could be replaced, but equipment losses were another matter. Their tanks and antitank missiles were soon in desperately short supply. In contrast, the Iraqi's ability to field large numbers of modern tanks steadily increased.

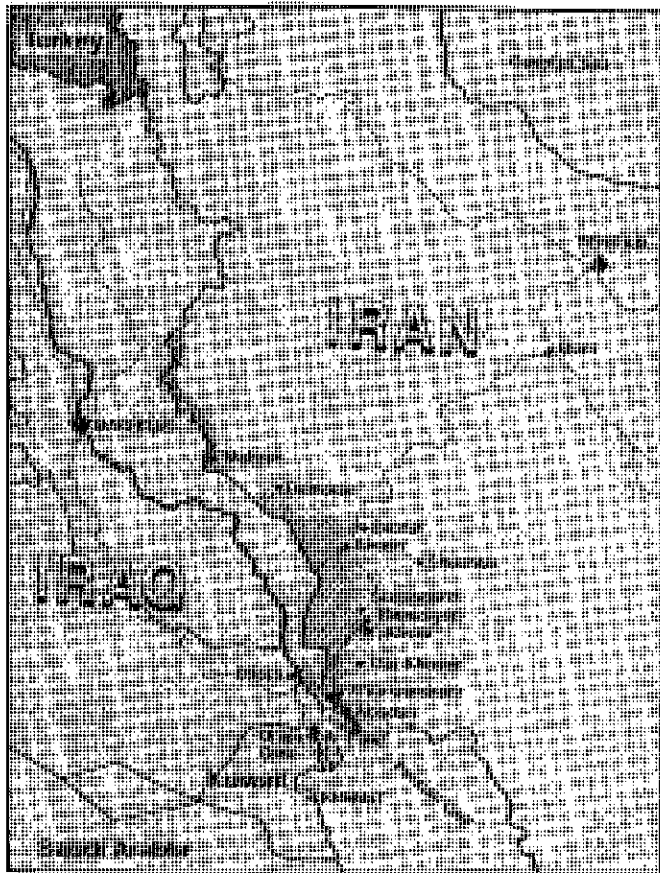
The Iranians continued to suffer excessive casualties as a result of their "human wave" attacks. These heavy losses, coupled with Iraq's continued use of chemical weapons and missile attacks against Iranian cities, lowered Iranian morale until fewer and fewer Iranians were willing to join the Revolutionary Guards. Still, not wanting to give up and counting on the valor of their massed infantry assaults to destroy Iraq in one last push, Iran planned to continue its offensive operations.

The Iraqi offensive of 1988 changed all that by using armor decisively in four major combined arms offensive operations. In a massive attack on 17 April 1988, Iraq launched its "Blessed Ramadan" offensive and recaptured the Faw Peninsula. With a force ratio of 6:1, Major General Maher Rashid, with the 7th and 3d Corps, conducted a coordinated combined arms attack that included two amphibious operations. Tanks and BMPs of the Iraqi Republican Guard spearheaded the attack in the south through complex obstacles and prepared antitank defenses. In 35 hours, the Faw defenses collapsed and those soldiers of the Iranian garrison who had not been killed retreated in disarray across the Shatt Al-Arab waterway.

On 25 May 1988, Iraq launched its next offensive near Basra at Fish Lake, a marshy area that had dried enough to permit good tank trafficability. Conducting a forward passage of lines through their own defending infantry forces, Iraq's Republican Guard forces attacked with speed, mass, and professionalism. The Iranians defended stubbornly behind a well-prepared belt of complex obstacles and antitank positions, despite intense Iraqi artillery barrages and chemical attacks.

Massed Iraqi armor and close support from attack helicopters punched through the defenses and beat back a major Iranian counterattack. Nearly five Iranian divisions began a rapid retreat. After 10 hours of intense combat, Iraq reconquered the town of Salamcheh, the goal of the offensive.

In June 1988 Iraq launched two major attacks that captured the town of Mehran and the Iranian positions to the rear of the Manjnu Islands in the Howezah marshes north of Basra. At Manjnu the Iraqis again launched a massive frontal attack against the Iranian defenses. This attack was coordinated with armor, infantry, chemical weapons, and hundreds of artillery weapons and tanks that had been placed in built-up positions in the marsh.



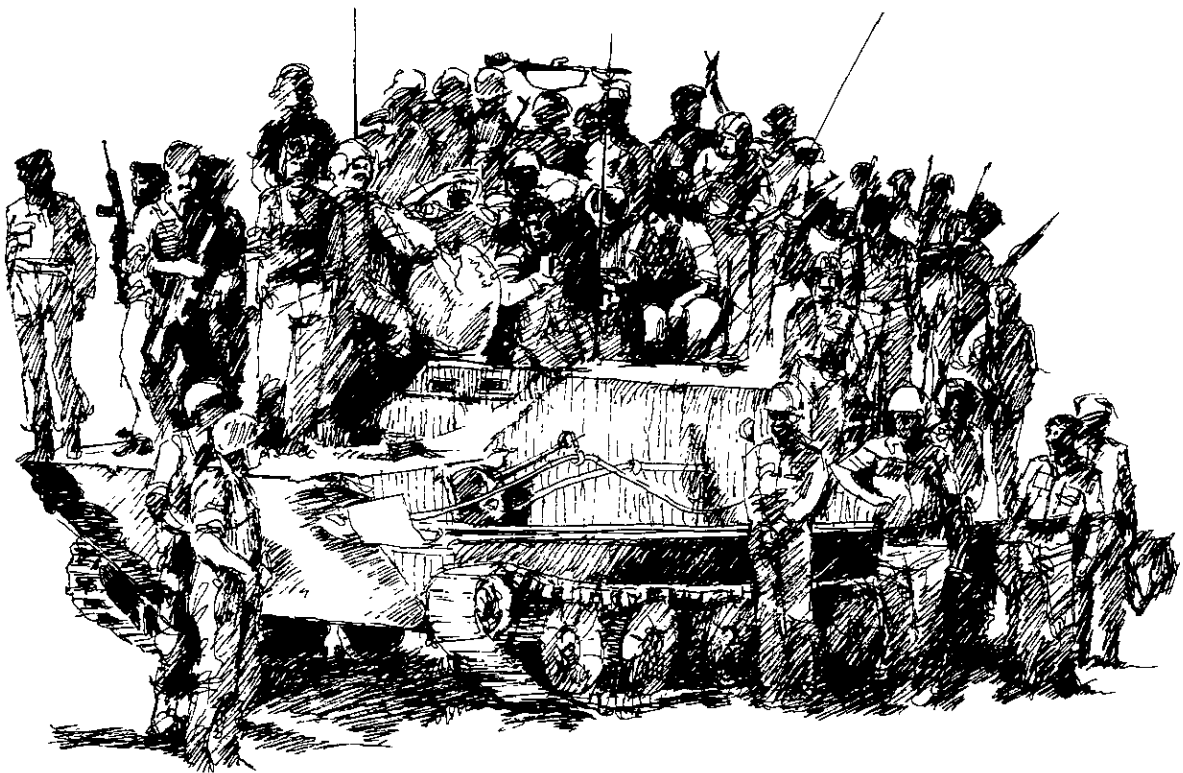
As the Iranian defense collapsed, the Iraqis used bridging equipment and bulldozers to improve mobility corridors so they could continue the attack into Iran. Again, Republican Guard armored units led the way. With the tanks of the Third Army, they attacked into Iran for the first time since 1982 with a force ratio of more than 20:1. Against such odds, the demoralized Iranians gave way.

The Iraqi offensives in 1988 resulted in the defeat of the Iranian military forces and drove them back to the 1982 battle lines. Moreover, Iraq captured immense quantities of usable military equipment, much of it abandoned in perfect condition by the Iranians.

On 13 July 1988, Saddam Hussein threatened to continue his attack into Iran, and on 20 July Iran reluctantly accepted a cease-fire. Except for continued Iraqi attacks on Kurdish rebels, the long and bloody war was over.

The Iraqis' offensive successes of 1988 resulted from detailed, synchronized planning by a few well-trained staffs. Iraqi forces trained for nearly a year before conducting the offensives. These battles proved that the Iraqi high command had learned how to synchronize the employment of a large land force and effectively defeat a less agile enemy. The Iraqis greatly outmatched their opponents in battlefield mobility and firepower, capabilities furnished by their armored forces and supporting artillery. The Iranians, unable to respond with mobile armored forces, were not strong enough to hold the line with their under-equipped infantry units.

This strength for detailed, synchronized planning, however, also revealed an important weakness. The Iraqis needed a



tremendous amount of time to synchronize their battle elements in such detail. After each attack, they needed at least a month to reorganize, plan, rehearse, and mass their strength for the next operation. Political control over the officer corps consistently competed with the need for military professionalism and this over-centralization resulted in a detailed orders approach to armor combat.

Complete justification for battle actions was required of small unit leaders to ensure that their actions were approved by their superiors. Full-scale rehearsals were conducted to verify this justification and to ensure the unity of the combined arms effort. But what would have happened if the Iraqis had been forced to react to fast-moving situations without enough planning time? What would have happened if the initial plan had not worked and the Iraqis had been forced to think on the move? The 1988 offensives went according to plan only because of favorable force ratios that allowed the Iraqis to steamroll over the Iranian positions.

The Achilles heel of the Iraqi Army, then, is its command, control, and communications (C3). As a result of a command style that requires senior leaders to control actions directly on the battlefield, the Iraqis employ their armor in determined, set-piece moves. In this system, an act of initiative that fails can result in the summary execution of a leader. They have no concept that permits an officer to disobey orders if the situation changes and the reality of battle demands immediate action. As a result, the officers have little initiative.

Current Iraqi doctrine for the employment of armor is the product of their experiences during the war with Iran. During that war, the Iraqi Army initially proved ineffective in its attempts to employ armor to achieve decisive results. By 1988,

however, it was able to use its armor in combined arms operations that decisively defeated the Iranians and brought the long war to an end.

The lessons of the Iran-Iraq War prove that the Iraqi armor force is vulnerable. Although it is effective in the defense against a dismounted infantry opponent, its ability to maneuver against a more agile opponent remains to be seen. Iraqi armor has certainly proved less than capable in conducting fast-moving offensive operations.

The Iraqis' rigid command style, their lack of initiative at small unit level, the difficulty their armor has in working with infantry and artillery units, and their overdependence on detailed synchronized planning are vulnerabilities that can be exploited.

Any future operations against the Iraqis must therefore stress a high degree of agility, initiative, and speed—and combined arms must be the key. The focus of these efforts must be to destroy and disrupt their command, control, and communications (C3). Their C3 facilities, military and political, must be priority targets.

If the Iraqis can be denied the time for detailed planning, their synchronization can be disrupted and they can be defeated piecemeal. These factors should be considered carefully in developing a mechanism for defeating an Iraqi armor force.

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TRAINING NOTES



Iraqi Infantry

MICHAEL R. JACOBSON

Although many people tend to think the Iraqi Army is a copy of the Soviet Army, this is not true, nor does it use the same tactics.

The Iraqi Army is organized into regular army units and elite Republican Guard units. The regular army has ten armored and mechanized infantry divisions, and the Republican Guards have at least three armored divisions. (See "Armor in DESERT SHIELD," by Michael R. Jacobson, *INFANTRY*, November-December 1990, pages 32-37.) But the Iraqi Army is composed predominately of infantry divisions (with an estimated 42 or more), and its soldiers use a mixture of equipment from the Soviet Union and various other countries.

An Iraqi infantry division usually has three infantry brigades (although some divisions had more than three during the Iran-Iraq War), a commando battalion, a tank battalion, an antitank battalion, and other combat, combat support, and combat service support elements (see Figure 1).

An infantry brigade consists of three infantry battalions, a commando company, a mortar battery, and other combat support and service support elements. An infantry battalion consists of three infantry companies, each of which has three infantry platoons with three ten-man squads in each.

The squad weapons consist mostly of

7.62 x 39mm AKM/AK-47/SKS rifles. A squad may also have an SVD sniper rifle and a 7.62mm machinegun. In addition to the three infantry platoons, the infantry company has a heavy weapons platoon that probably has RPG-7 rocket-propelled grenade launchers, recoilless guns, and possibly 60mm mortars. The infantry brigade's indirect fire support is provided by a battery of four to six 82mm or 120mm mortars.

The antitank battalion consists of three batteries of six antitank guided missile (ATGM) vehicles or antitank guns. The Iraqi Army has the following vehicle mounted ATGMs: AT-1, AT-2, AT-3, AT-5, HOT, and TOW/ITOW. Iraqi antitank guns include the 85mm M-45 antitank gun, the 100mm M-44 antitank gun, and the 105mm OTO Melara 56 Pack Howitzer.

INFANTRY WEAPONS

The following are brief descriptions of some of the Iraqi Army's infantry weapon systems:

SKS. The Simonov (SKS) is a Soviet designed 7.62 x 39mm semiautomatic carbine with an effective range of 400 meters. It has an integrated magazine that is fed by a ten-round stripper clip.

AK-47/AKM/AKMS. These weapons, designed by the Soviets and referred

to as Kalashnikov assault rifles, are capable of either semiautomatic or automatic fire. They fire the 7.62 x 39mm round and have an effective range of 300 meters on semiautomatic. They have a practical rate of fire of 100 rounds per minute on automatic or 40 rounds per minute on semiautomatic and use a 30-round magazine.

SVD. The SVD (Dragunov) sniper rifle uses a 7.62 x 54Rmm cartridge. It has a maximum effective range of 800 meters, and the gunner carries four 10-round magazines. Its PSO-1 optical sight is a four-power telescope with an integral rangefinder, a battery powered reticle illumination system, and an infrared reconnaissance aid. The SVD can be equipped with the NSP-3 image intensifier night sight, which will give a sniper a 500-meter effective range.

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

RPK. The RPK machinegun, a variant of the AKM rifle, fires the same 7.62 x 39mm round as the SKS/AK-47/AKM and uses either a 40-round curved magazine or a 75-round drum magazine. The RPK has an effective range of 800 meters and a practical rate of fire of 150 rounds

TRAINING NOTES

per minute on automatic or 50 rounds per minute on semiautomatic.

SGM. The SGM is the Soviet-designed Goryunov heavy machinegun. It fires the 7.62 x 54Rmm round out to 1,000 meters. The SGM has a practical rate of fire of 250 rounds per minute and uses a 250-round belt of ammunition.

FN-MAG 58. The FN-MAG 58 is a Belgian machinegun that fires the 7.62 x 51mm NATO round out to 1,000 meters. It has a practical rate of fire of 150-200 rounds per minute. It uses 50-round belts of ammunition and can be fired from its bipod or from a tripod. The FN-MAG 58 is used by U.S. forces as the M240 coaxial machinegun.

DSHK. The M38/46 DShK is the Soviet-designed Degtyarev heavy machinegun. It fires the 12.7 x 108mm round effectively out to 1,500 meters against ground targets and 1,000 meters against aircraft.

The DShK has a practical rate of fire of 80 to 100 rounds per minute. It uses 50-round belts of ammunition and can be ground mounted, towed, or vehicle mounted. The DShK is generally used as an antiaircraft machinegun, but it can also be used in the ground role.

(More information on small arms can be found in the Defense Intelligence Agency's "Small Arms Identification and Operation Guide—Eurasian Communist Countries," DST-1110H-394-76, 1 August 1983.)

Hand Grenades. The Iraqis use a variety of hand grenades including the Soviet F1, RGD-5, RG-42, Yugoslav M-75, Austrian Arges Model 78, and British Model 36M. These grenades have a bursting radius of 15 to 25 meters and a throwing range of 25 to 30 meters. The Iraqis produce copies of the Soviet F1 and RGD-5 grenades. NOTE: Do not use

captured Soviet grenades! There are reports of grenades that are fitted with zero-delay fuzes and used for booby traps. These grenades detonate as soon as the pins are pulled and the spoons released.

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

The RPG-7V requires a well-trained gunner. Chain link fence was used during the Vietnam War as an effective defense against the RPG-7V, which has a noticeable signature of flash, smoke, and noise.

SPG-9. The SPG-9 is a tripod-mounted 73mm recoilless gun. Its HEAT round has an effective range of 1,000 meters and can penetrate 330mm of armor. The SPG-9 also has a high explosive (HE) round that can be fired to 1,300 meters. The SPG-9 has a rate of fire of six rounds per minute.

B-10. The B-10 is an 82mm smooth-bore recoilless gun. The HEAT round has an effective range of 400 meters and can penetrate 230mm of armor. The B-10 also fires HE rounds to 4,000 meters and has a rate of fire of six rounds per minute.

B-11. The B-11 is a 107mm smooth-bore recoilless gun. The HEAT round has an effective range of 450 meters and can penetrate 380mm of armor. The B-11 fires HE rounds 6,000 meters and has a rate of fire of five rounds per minute.

AT-3. The AT-3 Sagger is a wire-guided ATGM. The gunner must guide it to the target using a "joy-stick." The Sagger can engage targets at ranges of 500 to 3,000 meters and can penetrate

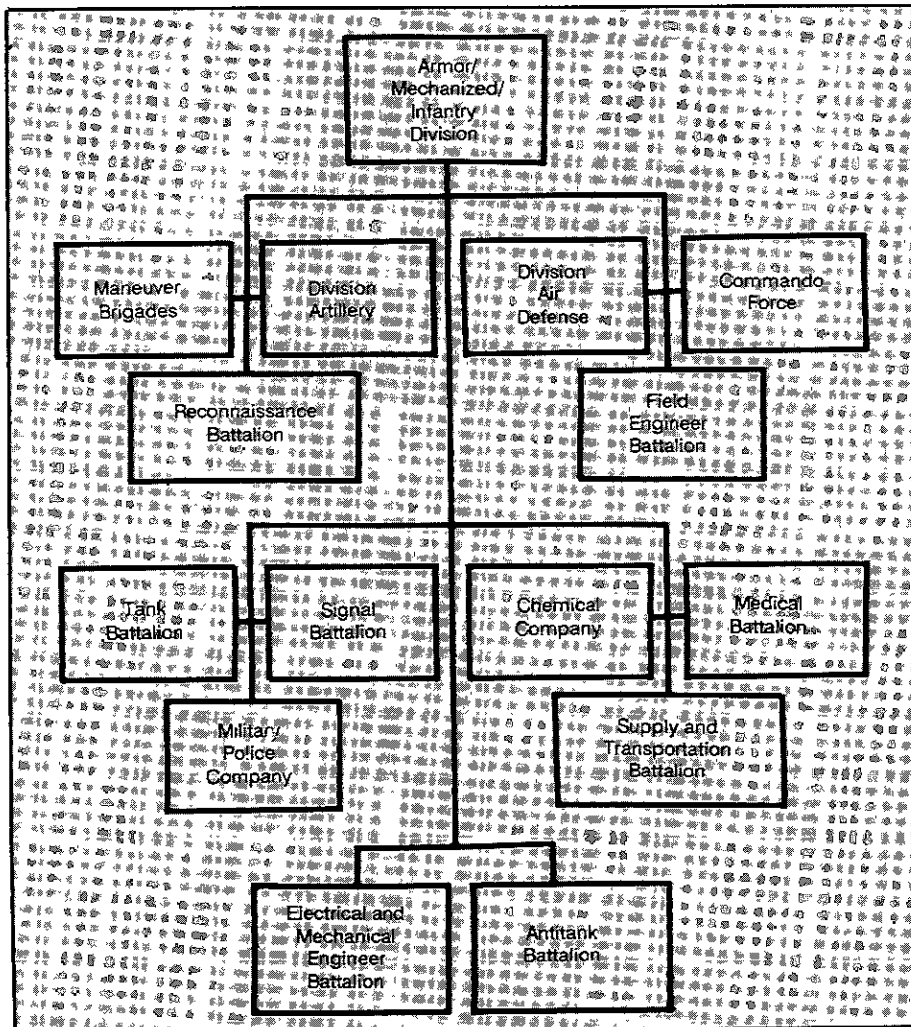


Figure 1

more than 400mm of armor. In the man-pack version, the gunner carries the missile in a fiber-glass suitcase. Each three-man team has a control box, four Sagger missiles, and an RPG-7V antitank grenade launcher. The gunner can fire the missile remotely up to 15 meters from his position, and all four missiles can be fired sequentially.

AT-4. The AT-4 Spigot is a tube-launched, wire-guided, semiautomatic, command to line of sight (SACLOS) guidance ATGM, similar in appearance to the Milan. It has a minimum range of 70 meters and a maximum range of 2,500 meters. It has a penetration capability of 500-600mm.

MILAN. The Milan is a manportable, Euromissile-produced, antitank guided missile. It is wire guided and has a 2,000-meter range requiring 12.5 seconds to travel that distance. The Milan can be equipped with a thermal night sight that is effective out to 3,000 meters. Two missiles are available—the Milan and the Milan 2—that can penetrate 600mm and 850mm of armor, respectively.

TOW. The Iraqis have ground TOW launchers, M113 TOW launchers, and Improved TOW Vehicles (ITVs) that they captured from the Kuwaitis and the Iranians. The TOW/ITOW missile has a range of 3,750 meters.

60mm Mortars. The Iraqi Army is believed to use two 60mm mortars, one may be the Yugoslav M-57, which is a copy of the U.S. M2 mortar. The M-57 has a minimum range of 74 meters and a maximum range of 1,690 meters. It normally has a two-man crew and fires high explosive, smoke, and illumination ammunition.

82mm Mortar. The Soviet M1937 is an 82mm smoothbore mortar that can be disassembled and carried in three one-man loads. The M1937 has a minimum range of 90 meters and a maximum range of 4,000 meters. It fires high explosive, smoke, and illumination rounds and has a rate of fire of 25 rounds per minute. The smoke round uses white phosphorus to provide both a screening and an incendiary capability. The round is designed to obscure and neutralize enemy observation points and artillery positions. The flying pieces of burning phosphorus

IRAQI IFVs/APCs		
Infantry Fighting Vehicles		
Model	Armament	Infantry Capacity
BM-100	20mm, 7.62mm	10
BM-100	20mm, 7.62mm, AT-3	10
BM-100	20mm, 7.62mm, AT-3	10
BM-100	20mm, 7.62mm, AT-3	10
Armored Personnel Carriers		
Model	Armament	Infantry Capacity
MT-LB	12.7mm	10
MT-LB	12.7mm	10
MT-LB	12.7mm, 7.62mm	10
MT-LB	12.7mm, 7.62mm	10
MT-LB	12.7mm	10
MT-LB	12.7mm	10
MT-LB	12.7mm	10
MT-LB	12.7mm, 7.62mm	10
MT-LB	12.7mm, 7.62mm	10
MT-LB	12.7mm, 7.62mm	10

Note: Data compiled from Jane's Armour and Armaments, 1988-89, by Robert Johnson. Figures for the MT-LB are based on the M113, which is the most common variant of the MT-LB.

start fires, and shell fragments inflict enemy casualties. The illumination round burns for 90 seconds.

120mm Mortar. The Soviet M1943 is a 120mm smoothbore mortar. Rounds can be drop fired or lanyard fired. The mortar has a muzzle device to prevent double loading, a minimum range of 500 meters and a maximum range of 5,700 meters. It fires high explosive, smoke, and illumination rounds and has a rate of fire of 15 rounds per minute.

Self-Propelled Mortars. The Iraqis have displayed two versions of 120mm

self-propelled (SP) mortars. The first is similar to our M106 SP mortar carrier. They use the Soviet MT-LB vehicle and mount the 120mm mortar inside the carrier. The second version mounts four 120mm mortars externally on a hydraulic spade on the MT-LB. The vehicle carries 104 rounds of ammunition.

IFV/APC. The Iraqi Army may attach a mechanized infantry brigade to an infantry division. The accompanying table shows the types of infantry fighting vehicles (IFVs) and armored personnel carriers (APCs) that the Iraqi Army has and

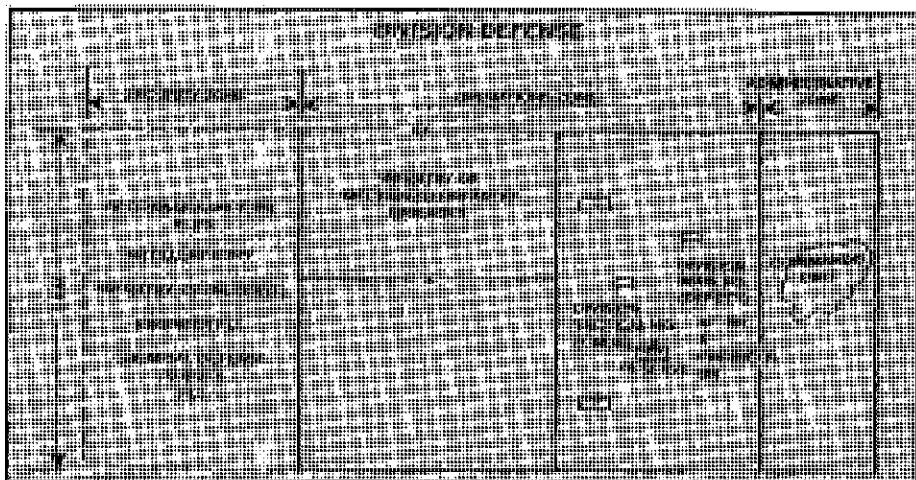


Figure 2

gives their weapons and the number of infantrymen the vehicles can dismount. It appears that only the Republican Guard Force's mechanized infantry has IFVs, whereas the Iraqi Army mechanized infantry has APCs. (Additional information on these vehicles can be found in "Armor in DESERT SHIELD," mentioned earlier.)

Mines. There is evidence that the Iraqi Army has more than 50 different types of mines and uses extensive minefields that contain both antipersonnel (AP) and antitank (AT) mines. Possible Iraqi mines include the Soviet PMN and PMD-6 AP mines and the TM 46 and TM 57 AT mines. The PMN is a plastic, pressure-activated AP mine and, once set, cannot be disarmed. The PMD-6 is a wooden-cased, pressure-activated AP mine. The TM 46 is a blast type AT mine that can be manually laid (tilt-rod activated) or mechanically laid (pressure-activated). The TM 57 is similar in appearance to the TM 46, but it contains more explosive. The TM 57 is a blast type AT mine that can be manually or mechanically laid.

Additionally, there is a possibility that Iraq has an air delivered scatterable AP and AT mine capability. Iraqi minefields are usually surrounded by barbed wire. The normal mix of mines is three APs and one AT per cluster. Minefields can be up to 350 meters deep. (The National Training Center has recently produced an excellent video tape on breaching and assaulting complex obstacles that all combat arms leaders should view.)

The Iraqis manufacture various military hardware items including ammunition, 125mm tank gun tubes, and artillery systems. They produce the following small arms: AKM, AKMS, RPK, SVD, and RPG-7; and the following small arms ammunition: 7.62 x 25mm, 7.62 x 39mm, 7.62 x 54Rmm, and 12.7 x 108mm. They also produce 82mm and 120mm mortars and ammunition.

The Iraqis use a mix of Soviet and British tactics, along with lessons learned from their war with Iran, and the maneuver brigade is the lowest level for independent operations.

An example of what an Iraqi infantry division defense may be like is shown in

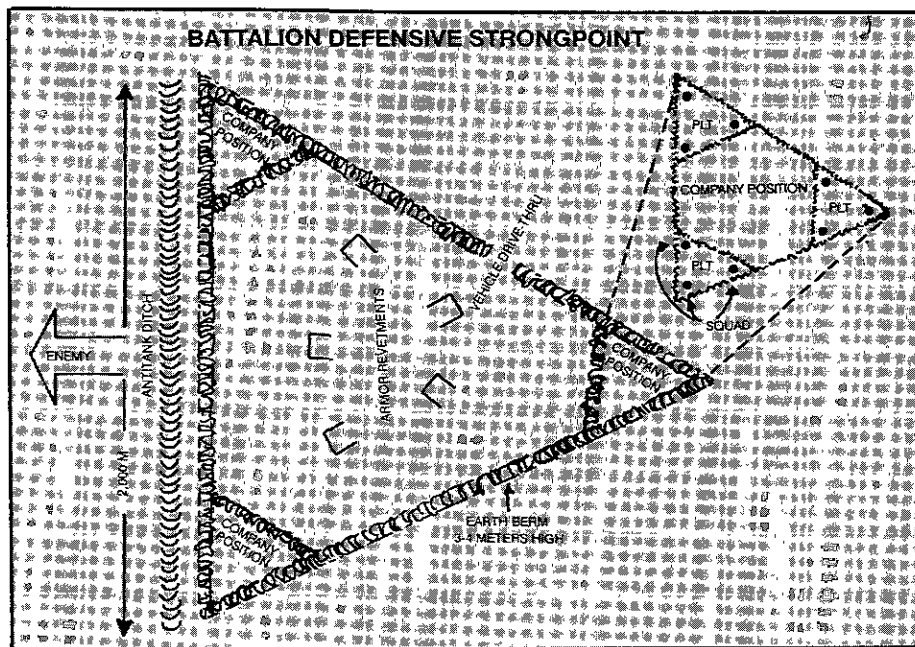


Figure 3

Figure 2. An infantry division will normally have a frontage of eight kilometers and a depth of ten kilometers. A security zone eight kilometers deep will be in front of the division. Forces in this security zone will consist of the reconnaissance battalion, reinforced by an artillery battery, an engineer platoon, and a chemical defense/survey platoon. The reserve

force of the security zone will probably be an infantry company.

The division will normally defend with two infantry brigades forward and an infantry or armor brigade as the reserve. The division's rear area, called the administrative area, is defended by the commando battalion, which forms ambush teams to destroy any tanks that have

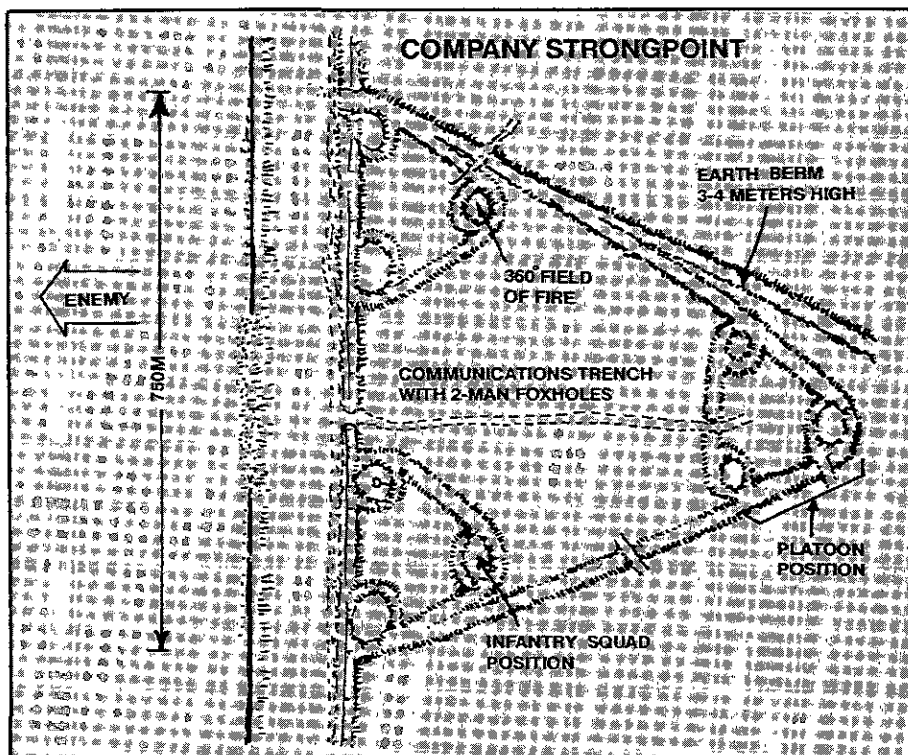


Figure 4

COMBAT TIPS

There are several things soldiers and leaders in Operation DESERT SHIELD can do to survive in battle:

Do not use the laser protective spectacles that you have been issued as sunglasses, because prolonged exposure to sunlight or scratches will reduce their effectiveness.

Do not use binoculars (M22) without laser filters, because nonfiltered binoculars will defeat the laser spectacles. If at all possible, use thermal sights or image intensifier sights. Although these sights may be damaged by a laser, your eyes will be safe. If you see a dazzling light, or if your sight blooms out (all the images are washed out), send an MIJI report on possible laser interference.

Additional information on laser threats is contained in the CATA (Combined Arms Training Activity) Special Text 1-1, Directed Energy Warfare Awareness Training, 25 November 1987. Finally, ask your medical personnel to get Field Manual 8-50, Prevention and Medical Management of Laser Injuries, August 1990, so they will know what to do.

For BFV crewmen and unit commanders, I recommend the following: First, more than three to five 25mm rounds will be required to kill a BMP, so keep shooting until you see the desired target effect. Your battalion master gunner or the S-3 should have a copy of the classified Joint Munition Effectiveness Manual titled Effectiveness Data for M2/M3 Bradley Fighting Vehicle (U), FM 101-60-32, 1 March 1988.

This manual discusses the estimated number of rounds needed to kill several different lightly armored vehicles at different ranges and engagement angles. It points out that the greater the range to the target, the more rounds will be required to defeat a vehicle. In one case, for instance, an increase of 400 meters in range to a target could almost double the number of rounds that must be fired.

The Iraqis have applied additional (applique) armor on some of their BMPs that will limit the penetration of armor piercing discarding sabot (APDS) rounds, thus requiring short-

er engagement ranges. Additionally, because the Iraqis have few light armored vehicles, a BFV gunner will probably fire many more HE than APDS rounds. M792 high explosive ammunition rounds will be needed to suppress enemy infantry, antitank weapons, and other targets.

Finally, BFV crewmen and commanders should review the test results that were conducted with 25mm ammunition against urban targets and reported in the U.S. Army Human Engineering Laboratory's Technical Memorandum 13-85, Firing with the Bradley 25mm Against Urban Targets, August 1985. Against walls of brick and reinforced concrete, the training practice tracer (TP-T) round was superior to both the M791 and M792 rounds in providing large holes.

Additional information on U.S. antiarmor weapons and their effectiveness can be found in "Antiarmor: What You Don't Know Could Kill You," by Michael R. Jacobson, INFANTRY, March-April 1990.

penetrated the defense.

The Iraqi Army defends from triangular positions as shown in Figures 3 and 4. The battalion defensive triangle consists of company triangles that are made up of platoon triangles. In the company position, the infantry squads defend the first line with their small arms and RPG-7s and the second line with recoilless rifles and 60mm mortars. The Iraqis believe that three RPG-7 hits are required to kill a tank at less than 1,000 meters and the recoilless guns will each destroy two tanks at 1,000 meters.

The Iraqi Army has a limited number of night vision devices, so they may have to illuminate the battlefield. Image intensifier (starlight) sights are available for their antitank weapons, machineguns, and some armored vehicles. The remainder of the armor force uses active infrared sights.

When the Iraqi Army began fighting the Iranians, it did not use its infantry effectively. The Iraqis had rigidly controlled noncommissioned officers and junior officers and, after the battle for the

city of Khorramshahr, they realized they needed to develop initiative from the squad leader up, particularly in urban combat. The Iraqis used a static defense supported by massed firepower to destroy Iranian attacks and to limit their own losses. The army made extensive use of night vision sights and acoustic sensors.

Iraqi infantry generally fought with great courage. The Iraqi soldiers used their antiarmor weapons, ATGMs, and RPG-7s more to suppress and harass enemy forces than to kill armored vehicles. (The RPG-7 was a key weapon for antiarmor and infantry suppression.)

Almost all Iraqi tanks have laser rangefinders, and any confrontation with Iraqi forces will involve a threat from lasers. Additionally, some Iraqi aircraft and artillery fire control vehicles have laser rangefinders, and these lasers present a threat to soldiers' eyes. In fact, a laser rangefinder (U.S. or Iraqi) may cause eye damage within small arms range that can vary from temporary flash blindness (similar to that from a camera's flashbulb) to a partial loss of vision or to per-

manent blindness. When a soldier uses binoculars or other magnifying optics, the danger (or the range at which the soldier can be affected by the laser) is increased.

In any ground conflict with Iraq, the U.S. armed forces and their allies will have to be prepared to defeat an infantry force of 42 divisions or more that has just fought an eight-year war with Iran. To help soldiers and leaders plan for this possibility, the Foreign Science and Technology Center has produced two excellent classified books: Iraqi Infantry Weapons (U), AST-2660Z-135-90, dated 16 November 1990 and Iraqi Combat Engineer Capabilities (U), August 1990.

To quote Sun Tzu, "Know the enemy and know yourself: in a hundred battles you will never be in peril."

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Effective Company Defense

A Matter of Time and Task Management

CAPTAIN JOHN F. AGOGLIA
 MAJOR JOHN D. JOHNSON

The essence of time management for a unit in the defense is in identifying the amount of preparation time required and allocating that time to subordinates so they can accomplish their assigned tasks. In this process, however, it is just as important to place these tasks in the proper sequence.

The performance of units at the National Training Center (NTC) has demonstrated that our Army has problems managing time and arranging in an order of priority the defensive preparation tasks to be performed by all members of the command, from the commander to the individual soldier. Included here is a three-part matrix aimed at helping company (or team) commanders solve this problem. (For simplicity, further references will be to company commanders only.) It also gives task force commanders and staffs an appreciation of their subordinates' requirements.

The specific time lines identified in this matrix are not in any current Army manual. They are based upon times identified for certain tasks found in Soldier's Manuals, mission training plans, and engineer manuals, as well as our own collective experiences as company observer-controllers at the NTC for a combined total of 58 rotations. The times are merely guidelines, and the average mechanized infantry or armor company that we have seen would be hard-pressed to meet them unless it had undergone rigorous training and had a competent NCO chain of command.

The matrix is broken down by duty position and separated into three phases:

preparation, establishment of the engagement area, and survivability and rehearsal of contingencies.

The preparation phase starts with the receipt of the task force warning order and ends with the receipt of the task force operations order (OPORD). It is imperative that the task force commander and staff, using an initial warning order as well as supplemental orders, provide the company commanders with the task force mission, the tasks and purposes that support the mission, the task force sector, and any known intelligence on the enemy. This information will give the company commanders enough information to begin their estimates.

ISSUES WARNING ORDERS

Once a company commander has analyzed the task force warning orders, he issues or updates his own warning orders (Steps 1, 2, and 4 of the troop leading procedures (TLPs)—Receive the mission; Issue the warning order; and Initiate necessary movement). In this process, he must pay particular attention to providing a detailed time management schedule that specifies what maintenance is to be done; when pre-combat inspections are to be conducted; and when, where, and what crew, squad, and platoon rehearsals will be conducted.

On the basis of the information provided in the task force warning order, the company commander, with his platoon leaders and fire support team, should begin preparing his commander's estimate

(Step 3 of the TLP—Make a tentative plan). The first sergeant and executive officer should coordinate with the combat trains' command post (CP) to fill the company's combat service support requirements (Class IV, prestock ammunition, medical supplies), assist the NCO chain of command, and supervise all platoon level rehearsals.

The NCO chain of command is responsible for supervising the accomplishment of certain specified requirements. Thus, the platoon sergeants and squad leaders (or tank commanders) monitor the individual soldiers to make sure they perform any maintenance, pre-combat checks, and rehearsals correctly, and that they rest, perform personal hygiene, and maintain security at all times.

The company leaders should conduct a detailed map analysis of the terrain in the task force sector, analyze the enemy situation, and develop doctrinal and situational templates. If possible, they should also conduct a physical reconnaissance of the terrain to confirm or deny any assumptions they might have made in their map analysis.

By starting his estimate process before he receives the task force OPORD, the company commander can gain a better understanding of the situational assumptions the task force commander and his staff have made when they brief the concept of the operation later. The company commander will also be able to ask intelligent questions at that time about the relationships between his mission, his engagement area, the enemy avenues of approach, and the mission and engagement

areas of the other task force elements. As a result, the company commander will more actively participate in and contribute to the task force's order process. He will understand the staff's deductions and its rationale for the inter-relationships between task force elements and their missions; he can discuss his terrain analysis with the S-2; he can coordinate with the other commanders and combat support staff as needed; and he can verify or coordinate his combat service support requirements with the CSS staff.

The tasks in the second phase (the establishment of the engagement area) must be performed sequentially and cannot be done well during periods of limited visibility. The first step consists of completing the estimate, identifying a tentative plan, conducting the leaders' reconnaissance of the engagement area (EA) to complete the plan, and issuing an OPORD (Steps 3, 4, 5, 6, and 7 of the TLPs).

The second phase begins once the task force OPORD is complete and ends once the company has conducted a rehearsal of its engagement area. If time does not allow, however, or if the battalion commander and his staff accomplish the troop leading procedures sequentially instead of concurrently, the company commander may not get the information he needs to start this phase before receiving the task force OPORD.

If the battalion commander does accomplish the TLPs concurrently, however, then each company commander can get the information he needs to start this phase before the task force OPORD is issued.

As soon as he receives the company's mission, the company commander must begin his mission and time analysis. He updates the company's warning order and issues any necessary movement instructions. While the first sergeant and other NCOs continue to supervise, the commander completes his tentative plan and then takes his platoon leaders, fire support officer (FSO), and executive officer on a leaders' reconnaissance of the company's primary engagement area. During this reconnaissance, the leaders should confirm their tentative plan and complete it by doing the following:

- Verifying their terrain analysis,

POSITION TIME		PHASE I - PREPARATION					
		COMPANY	XO 1SG	FIST	PLT LDR	PSG	SL TK CDR
BATTALION WARNING ORDER	ISSUE COMPANY WARNING ORDER	RECEIVE WARNING ORDER	RECEIVE WARNING ORDER	RECEIVE WARNING ORDER	SUPERVISE SECURITY	SUPERVISE SECURITY	SECURITY/ REST PLAN
	COMMANDERS ESTIMATE (TERRAIN AND ENEMY ANALYSIS)	UPDATE COMPANY CSS STATUS W/TF	ASSIST COMMANDER WITH ESTIMATE	ISSUE PLATOON WARNING ORDER	RECEIVE WARNING ORDER	RECEIVE WARNING ORDER	SECURITY/ REST PLAN
	COMMANDERS ESTIMATE (TERRAIN AND ENEMY ANALYSIS)	UPDATE COMPANY CSS STATUS W/TF	ASSIST COMMANDER WITH ESTIMATE	PLAN REHEARSALS	UPDATE CSS STATUS WITH XO & 1SG	WARNING ORDER TO SOLDIERS	RECEIVE WARNING ORDER
	COMMANDERS ESTIMATE (TERRAIN AND ENEMY ANALYSIS)	SUPERVISE PRECOMBAT INSPECTIONS	ASSIST COMMANDER WITH ESTIMATE	ASSIST COMMANDER WITH ESTIMATE	REVIEW REHEARSAL PLAN	PREP FOR PCI'S	PREP FOR PCI'S
	COMMANDERS ESTIMATE (TERRAIN AND ENEMY ANALYSIS)	SUPERVISE PRECOMBAT INSPECTIONS	ASSIST COMMANDER WITH ESTIMATE	ASSIST COMMANDER WITH ESTIMATE	SUPERVISE PRECOMBAT INSPECTION UPDATE CSS STATUS REPORTS	PRECOMBAT INSPECTIONS	PRECOMBAT INSPECTIONS
AMOUNT OF TIME DEPENDENT UPON THE BATTALION OPORD	COMMANDERS ESTIMATE (TERRAIN AND ENEMY ANALYSIS)	UPDATE CSS STATUS REPORTS TO TF BASED ON PCI'S	ASSIST COMMANDER WITH ESTIMATE	ASSIST COMMANDER WITH ESTIMATE	SUPERVISE PRECOMBAT INSPECTION UPDATE CSS STATUS REPORT	PRECOMBAT INSPECTIONS	PRECOMBAT INSPECTIONS
	ATTEND THE BATTALION OPORD	SUPERVISE REHEARSALS	ATTEND BATTALION OPORD	CONDUCT AND SUPERVISE REHEARSALS	CONDUCT AND SUPERVISE REHEARSALS	REHEARSALS	REHEARSALS
BATTALION OPORD	ATTEND THE BATTALION OPORD	RECON COORD CSS SUPERVISE COMPANY	ATTEND BATTALION OPORD	RECON IF POSSIBLE	SUPERVISE PREP OF DEFENSIVE MATERIALS	SUPERVISE PREP OF DEFENSIVE MATERIALS	SUPERVISE PREP OF DEFENSIVE MATERIALS

POSITION TIME		PHASE II - ESTABLISHMENT OF THE ENGAGEMENT AREA					
		COMPANY	XO 1SG	FIST	PLT LDR	PSG	SL TK CDR
3 HRS STEP 1	UPDATE WARNING ORDER	RECEIVE WARNING ORDER	RECEIVE WARNING ORDER	RECEIVE WARNING ORDER	RECEIVE WO	CONTINUE TO PREP MATERIALS	CONTINUE TO PREP MATERIALS SECURITY
	ANALYZE COMPARE C.O.A./ID TENTATIVE PLAN	● LINK UP/W CDR AT BP ● SUPERVISE NECESSARY MOVEMENT	ASSIST COMMANDER W/TENTATIVE PLAN	LINKUP W/CDR AT BP	UPDATE PLT WO	RECEIVE WO	RECEIVE WO SECURITY
	CONDUCT LDRS RECON AND ISSUE OPORD	● MARK OBSTACLES ● COORD FOR DELIVERY CLASS IV & V	LDR'S RECON	MARK TRP'S VEHICLE AND WPN POSITIONS	SUPERVISES PREP & MOVEMENT	MOVE AS NECESSARY	MOVE AS NECESSARY SECURITY
3 HRS STEP 2	● RECON ADDITIONAL BP'S ● COMPLETE THE PLAN ● SUPERVISE TROUBLE/ SHOOT	● SET UP CO C.P. ● COORD WITH ENGINEERS	COORD W/TF FSO (ADJUST/ ADD TGTS)	ISSUE OPORD (SCHEME OF MANEUVER FOR PRIMARY EA)	● OCCUPY BP ● RECEIVE PLAN	● OCCUPY BP ● RECEIVE PLAN	● OCCUPY BP ● RECEIVE PLAN
	RECON ADDITIONAL BP'S	● PLAN REHEARSAL OF EA ● SUPERVISE RANGE CARD PREP	ID INDIRECT TRIGGER LINES	ESTABLISH PLT C.P.	● REVIEW POSITION SELECTION ● SUPERVISE RANGE CARD PREP	● DESIGNATE SECTORS/ PDFS ● TRP'S /FPL'S ● PREP RANGE CARDS	● PREP RANGE CARDS ● SECURITY
	COMPLETE THE PLAN	DEVELOP CSS PLAN	POSITION PLT FO'S	VERIFY RANGE CARDS	VERIFY RANGE CARDS	ADJUST WPN POSITION AND RANGE CARDS IF REQUIRED	● ADJUST WPN POSITION AND RANGE CARD IF REQUIRED ● SECURITY
	SUPERVISE TROUBLE/ SHOOT	DIRECT MEDIC AND MAINT TM REHEARSALS	COMPLETE INDIRECT FIRE PLAN	PLATOON SECTOR SKETCHES COMPLETE	RANGE CARDS AND SQUAD SECTOR SKETCHES COMPLETE	RANGE CARDS AND SQUAD SECTOR SKETCHES COMPLETE	RANGE CARDS COMPLETE
1 HR STEP 3	ENGAGEMENT AREA REHEARSAL FOR COMPANY	ENGAGEMENT AREA REHEARSAL FOR COMPANY	ENGAGEMENT AREA REHEARSAL FOR COMPANY	ENGAGEMENT AREA REHEARSAL FOR COMPANY	ENGAGEMENT AREA REHEARSAL FOR COMPANY	ENGAGEMENT AREA REHEARSAL FOR COMPANY	ENGAGEMENT AREA REHEARSAL FOR COMPANY

which is the method they will use to focus their reconnaissance efforts (that is, to confirm mounted and dismounted avenues of approach and key terrain).

- Identifying where they will mass the company's firepower on the enemy to kill him (identify the decisive point), and how they are going to use obstacles and in-

direct fire to turn the enemy into their EAs and then block, fix, and disrupt him to increase their engagement time.

- Determining from the vantage point of the EA how and where they are going to position weapons so that they provide depth and mutual support, and can mass their fires at the primary target reference points (TRPs) in the EA.

- Deciding how they are going to use obstacles and indirect fires to protect their battle position (BP).

The leaders should be prepared to mark all TRPs, the left and right limits of all proposed obstacles, and all vehicle and crew-served weapon positions, using visual markers such as VS-17 panels, engineer tape, and pickets. Roads and bushes are not specific enough.

If he has experienced platoon leaders, the company commander can designate specific areas for them to reconnoiter. He can then review these areas and make sure the platoon leaders conduct the required flank coordination and understand where the other platoons are positioned and where they can or cannot see and shoot. With inexperienced platoon leaders, however, he should have all of them accompany him as he helps them pick their platoons' crew-served weapon and vehicle positions and to guarantee that the required flank coordination is accomplished.

When the reconnaissance is complete, the platoon leaders have the commander's concept for the primary EA. This first step should take no more than three hours.

The second step is occupying the battle position. On the basis of the movement instructions that have been issued, the company, under the control of the executive officer or first sergeant, should have moved forward to link up with the leaders' reconnaissance. The platoon leaders take their platoons to the platoon BPs; they show the NCOs the weapon and vehicle positions and brief them on the plan. Then they point out the VS-17 panels marking the TRPs and the engineer stakes with white tape signifying the right and left limits of all the obstacles. The NCOs then do the same for their individual gunners and crews.

The platoon sergeants, squad leaders,

and platoon leaders ensure that their men correctly position the guns and vehicles and prepare proper range cards. The platoon sergeants and platoon leaders spot check key weapon range cards and supervise their squad leaders. These range card checks should verify that each weapon or vehicle position has the required tracking time and fields of fire into the EA, and that each crew understands its sector of fire and can identify the TRPs.

The first sergeant assists the NCO chain of command by supervising the preparation of range cards, continuing to coordinate with the combat trains CP for CSS requirements, and ensuring that the maintenance and medical teams rehearse evacuation routes rearward to the battalion collection points and forward to the platoon positions. The executive officer coordinates with the commander to get the rehearsal of the EA organized, using whoever has been detailed as the rehearsal opposing force (OPFOR)—company trains elements, medics, maintenance personnel, XO vehicles, maybe one or two platoon vehicles.

The company FSO briefs his forward observers (FOs) on the indirect fire plan. He then physically times how long it will take the enemy to move from point to point and compares that to the time it will take the indirect fire rounds to reach each target. He then identifies and marks the trigger lines for the indirect fire plan and helps the platoons position their FOs; he also coordinates with the task force FSO to adjust and add any indirect targets.

Meanwhile, the company commander is preparing his OPORD and, if required, reconnoitering alternate or supplemental positions. This second step, like the first, takes no more than three hours.

The third and final step of Phase II is the rehearsal of the primary EA. All members of the chain of command position themselves, with communications, where they plan to fight the battle. The XO, controlling the vehicles detailed to him, moves into and through the EA along the different avenues of approach.

The purpose of the rehearsal is to confirm that every leader, gunner, and soldier understands the company plan and the tasks he must perform for that plan to succeed. As the XO moves through the

EA, the platoons practice issuing platoon and crew fire commands. They ensure that each weapon crew understands its sector of fire and when to shift fires; demonstrates that the unit can mass its firepower in all portions of the EA; and illustrates how the obstacles and indirect fires are integrated with the direct fires. During the rehearsal, the company FSO and his FOs verify and identify the indirect fire trigger lines to the crews.

The rehearsal should be conducted in a crawl, walk, run mode (that is, the unit should control the speed of execution by regulating the XO's rate of march through the EA). Adjustments should be made to positions or timing as any problems are discovered. These adjustments should be minor if the commander paid attention to detail during his reconnaissance and during his verification of the range cards. Reactions to chemicals and enemy air should also be integrated into the rehearsal. This third step should take about one hour.

During Phase II, then, the company issues an OPORD and conducts a leaders' reconnaissance (three hours); occupies the battle positions and makes and confirms range cards (three hours); and rehearses the EA (one hour)—a total of seven hours. Seven hours after the task force OPORD, the company team is prepared for enemy contact in the EA. The entire command, down to the individual soldiers and crews, have a detailed knowledge of the mission, as well as the direct fire, indirect fire, and obstacle plans, and can begin digging in. (NOTE: The platoon leaders can start digging in their armored vehicles after they have verified the range cards and if they are pressed for time, but the company commander must ensure that the positions support his plan.)

If the unit does not perform the tasks of Phase II sequentially as outlined in these three steps, it will probably not reach this level in 24 hours. It cannot dig adequate positions before making range cards and cannot adequately position weapons and make range cards without understanding the avenues of approach into the engagement area. Each step is the foundation for the next.

Phase III (survivability and rehearsal

of contingencies) begins right after the rehearsal of the EA and continues until the enemy attacks. The NCO chain of command ensures that all problems identified during the EA rehearsal are corrected and adjustments made to the positions. Then the NCOs focus on making their positions survivable by digging in, putting on overhead cover, laying and digging in platoon and company hot loops, ensuring the TRPs can be seen through thermal sights during periods of limited visibility, laying in the mine and wire obstacles, and pre-stocking ammunition (Step 8 of the TLP—Supervise and refine the plan).

If supplementary positions are required, the commander and platoon leaders begin Phase II all over again. The level and detail of the preparation may vary depending upon the time available. Ideally, this is the time for the commander to issue the company a FRAGO.

The FRAGO is a coordinating measure to tie in all aspects of the fight. The information the unit must have to begin preparing the primary position has already been passed out, and the FRAGO focuses on ensuring the BP's survivability by doing the following:

- Specifying the security (counter-reconnaissance) plan (observation posts, patrols, sensors, level of alert, stand-to).
- Detailing the casualty evacuation plan.
- Updating the priorities for the allocation of Class IV and V supplies and dozer assets.
- Identifying the participants and the time of the rehearsal of the supplemental positions' EAs and the repositioning of the unit to the next BP.

On the basis of the rehearsal of the EA, the company FSO briefs the adjusted fire support plan, the counter-reconnaissance fire support plan, and the limited visibility fire support plan.

Once the commander's FRAGO is complete, the platoon leaders take time to prepare and issue their own orders. Upon completion of the orders process, the entire chain of command focuses on accomplishing the priorities of work as outlined by the company commander and platoon leaders. Particular emphasis is placed on doing all rehearsals and registering all artillery priority targets before

POSITION		PHASE III - SURVIVABILITY/REHEARSAL OF CONTINGENCIES					
TIME	COMPANY	XO TSG	FIST	PLT LDR	PSG	SL TK CDR	SOLDIER
EA REHEARSAL COMPLETE	<ul style="list-style-type: none"> ● RECON ADDITIONAL BP'S IF REQUIRED ● PREP CO FRAGO 	<ul style="list-style-type: none"> ● ASSIST IN RECON ● COORD W/ ENG ● PREP SERVICE SUPPORT FOR FRAGO ● SUPERVISE BP PREP 	<ul style="list-style-type: none"> ● ASSIST IN BP RECON/FRAGO PREP 	<ul style="list-style-type: none"> ● ASSIST IN RECON OF ADDITIONAL BP'S 	<ul style="list-style-type: none"> ● ADJUST POSITIONS AS NEEDED 	<ul style="list-style-type: none"> ● ADJUST POSITIONS AS NEEDED 	<ul style="list-style-type: none"> ● ADJUST POSITIONS AS NEEDED ● SECURITY
	<ul style="list-style-type: none"> ● RECON ADDITIONAL BP'S IF REQUIRED ● PREP CO FRAGO 	<ul style="list-style-type: none"> ● ASSIST IN RECON ● COORD W/ ENG 	<ul style="list-style-type: none"> ● PREP FIRE SUPPORT BRIEF FOR FRAGO 	<ul style="list-style-type: none"> ● ASSIST IN RECON OF ADDITIONAL BP'S 	<ul style="list-style-type: none"> ● SUPERVISE POSITION PREP 	<ul style="list-style-type: none"> ● BEGIN POS PREP ● DIRECT BULLDOZERS 	<ul style="list-style-type: none"> ● BEGIN POS PREP ● DIRECT BULLDOZERS
TIME DEPENDENT ON SITUATION	<ul style="list-style-type: none"> ● ISSUE CO FRAGO 	<ul style="list-style-type: none"> ● RECEIVE FRAGO ● BRIEF CSS PLAN 	<ul style="list-style-type: none"> ● BRIEF FIRE SUPPORT PLAN 	<ul style="list-style-type: none"> ● RECEIVE FRAGO 	<ul style="list-style-type: none"> ● SUPERVISE POSITION PREP 	<ul style="list-style-type: none"> ● BEGIN POS PREP ● DIRECT BULLDOZERS 	<ul style="list-style-type: none"> ● BEGIN POS PREP ● DIRECT BULLDOZERS
	<ul style="list-style-type: none"> ● BN BRIEF BACKS ● SUPERVISE COMPANY ● REST PLAN 	<ul style="list-style-type: none"> ● PLAN CO REHEARSALS ● ASSIST/ SUPERVISE BP PREP 	<ul style="list-style-type: none"> ● ASSIST IN BP PREP 	<ul style="list-style-type: none"> ● PREPARE PLT FRAGO 	<ul style="list-style-type: none"> ● ASSIST FRAGO PREP 	<ul style="list-style-type: none"> ● CONTINUE BP PREP 	<ul style="list-style-type: none"> ● CONTINUE BP PREP
NLT DEFEND TIME	<ul style="list-style-type: none"> ● BN BRIEF BACKS ● SUPERVISE COMPANY ● REST PLAN 	<ul style="list-style-type: none"> ● PLAN CO REHEARSALS ● ASSIST/ SUPERVISE BP PREP 	<ul style="list-style-type: none"> ● REGISTER INDIRECT 	<ul style="list-style-type: none"> ● ISSUE PLT FRAGO 	<ul style="list-style-type: none"> ● RECEIVE FRAGO 	<ul style="list-style-type: none"> ● RECEIVE FRAGO 	<ul style="list-style-type: none"> ● RECEIVE FRAGO
	<ul style="list-style-type: none"> ● COMPANY REHEARSALS ● COMPLETE BP PREP 	<ul style="list-style-type: none"> ● COMPANY REHEARSALS ● COMPLETE BP PREP 	<ul style="list-style-type: none"> ● COMPANY REHEARSALS ● COMPLETE BP PREP 	<ul style="list-style-type: none"> ● COMPANY REHEARSALS ● COMPLETE BP PREP 	<ul style="list-style-type: none"> ● COMPANY REHEARSALS ● COMPLETE BP PREP 	<ul style="list-style-type: none"> ● COMPANY REHEARSALS ● COMPLETE BP PREP 	<ul style="list-style-type: none"> ● COMPANY REHEARSALS ● COMPLETE BP PREP

sunset—FASCAM targets, illumination targets, and groups of targets that support a unit's battle position.

In summary, the driving force during Phase I is a detailed task force and company warning order to let the NCO chain of command know the order in which each of the tasks must be performed and allows the company leaders to begin the estimate process.

Phase II must be accomplished in sequence and requires at least seven hours of intense activity that culminates in a rehearsal of the engagement area.

Phase III is characterized by the orders process (company through squad), which results in all members of the company working toward increasing the survivability of the BP, conducting reconnaissance of and rehearsing the movement to alternate BPs, and adjusting or registering the indirect fire plan.

This is one method of solving the time and task management problem leaders face when assigned a defensive mission. It is not the only method. Some might argue about the exact times we have allocated or whom we have assigned the responsibility for specific tasks. But there is no doubt about the importance of understanding the troop leading procedures and the estimate of the situation. It is essential that all leaders know the order in

which all tasks from squad to battalion level must be performed and how much time is required to perform each.

One way a leader can assess whether or not his unit needs to train in this area is to give his subordinate leaders or staff officers a simple test:

Gather his subordinates in a room and give them about an hour to use their knowledge of the troop leading procedures (without any discussion) to outline how they would prepare for a defensive mission. Specifically, have them detail the sequence of tasks, the time required for each, what soldier and leader actions are occurring concurrently, and what information they need from the leader.

The results may be surprising. If nothing else, they will provide feedback on a unit's training and its officer and NCO professional development programs.

Captain John F. Agoglia previously served as an observer-controller at the NTC at company and task force level and is now a small-group instructor in the U.S. Army Infantry School. He is a 1980 graduate of the United States Military Academy.

Major John D. Johnson also served as an observer-controller at the NTC and as an Infantry School instructor. He is a 1977 graduate of Virginia Military Academy and is currently assigned to the School of Advanced Military Studies at Fort Leavenworth.

Working the Point

STAFF SERGEANT GERALD J. VLASTOS

The lead vehicle in a mechanized infantry company or battalion movement to contact is expected to move forward faster and harder than the others. The squad leader is expected to react quickly so the momentum of the attack can be maintained. He is responsible for making sure that the task force is on the right route; that he finds the enemy before the enemy finds him; and that he develops the initial situation for the unit's leaders to act upon. In other words, he goes out, finds trouble, and then lets the company or battalion task force bail him out. Clearly, this vehicle should be manned by the best squad in a platoon.

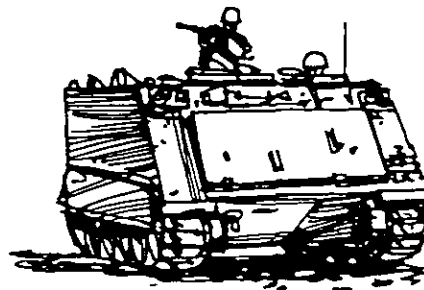
The techniques discussed here may be helpful to squad leaders and soldiers who are assigned this role.

During the preparation phase, and after the squad leader has received the fragmentary order (FRAGO), the squad leader, his track commander, and the platoon leader go over the platoon leader's map again. The squad leader and track commander ensure that their routes, checkpoints, phase lines, and target reference points (TRPs) are the same as the platoon leader's. Then they go over likely areas of contact and ensure that TRPs have been plotted for those areas. If there are none, the squad leader gets with the platoon fire support team and sees that some are designated. They discuss the best approaches to crossing danger areas and decide in which direction the vehicle will turn at various intersections.

The squad leader then briefs his squad on the enemy situation, the route, and the battle drills they can expect to execute on contact. The track commander

and squad leader go over the route one more time.

Once it completes its preparations for combat, the lead squad crosses the line of departure at the time prescribed in the FRAGO. Although the FRAGO or a unit SOP will probably specify convoy speed and distance between tracks or other vehicles, this should not apply to the lead track. The squad leader must be given some freedom to move away from his platoon to investigate possible ambush



sites or other danger areas, but he must remember to stay on the axis of advance and within sight and range of the second track's direct fire weapon. An analysis of METT-T (mission, enemy, troops, terrain, and time) and the squad leader's judgment should dictate this.

It is the driver's responsibility to alter his speed at irregular times during movement. (In my unit in Korea, we referred to this as *stuttering*.) The vehicle might move, for example, at five miles per hour for 30 seconds, seven miles per hour for 20 seconds, and ten miles per hour for 15 seconds. This helps keep enemy gunners from tracking the vehicle and getting a clear shot at it.

During the movement, the squad leader must keep his handset glued to his ear, one eye on the map, the other eye on the terrain and surroundings, and his mind on the six-digit grid coordinates of his exact location. The platoon radio is kept clear for him and the platoon leader to talk on—nobody else. He reports all phase lines, grid lines, and TRPs. He calls in evidence of vehicle movement, changes in the terrain, and any feelings or suspicions he may have.

The track commander must have binoculars for increased observation. He must constantly scan in all directions and investigate suspicious areas. Three men besides the squad leader should be standing in the cargo hatch (if the vehicle is an M113), one facing the front and two facing the rear. All should have sectors designated for them by the squad leader and should report any findings to him.

At those times when the track must stop, the driver automatically seeks a good hull-down position, maintaining observation to the front and flanks, while the rest of the unit catches up.

Once enemy contact is established—when the enemy opens fire—the squad's main objective is to survive the initial ten seconds. The driver seeks cover without being told where to go, and the track commander engages the enemy with his machinegun. The squad leader calls in an abbreviated situation report, which might be, "Tanks 200 meters past Phase Line Blue" or "Tanks and automatic weapons fire 300 meters north of the bridge on the right." The platoon leader, who should be following the squad leader's progress on his map, then sends this information

along with approximate grid coordinates to the company commander. Once the squad leader gets his vehicle under cover, he can then call a SALT (size, activity, location, type) report back to the platoon leader and turn control of the battle over to him.

The lead vehicle in a movement to con-

tact calls for a squad leader who is smart, resourceful, and daring. The decisions he makes and the information he sends could affect the entire course of the battle. Unit leaders should ensure that the best squad leaders are at the point; and those squad leaders should ensure that they know their jobs well enough to be able

to direct the lead vehicle in a movement to contact.

Staff Sergeant Gerald J. Vlastos was a mechanized infantry squad leader in the 5th Battalion, 20th Infantry, 2d Infantry Division, in Korea. He is now a drill sergeant at Fort Jackson.

The Foot March

A Tactical Maneuver

LIEUTENANT COLONEL ROLAND J. TISO, JR.

The U.S. Army's concern for battlefield mobility, along with the formation of our light divisions, has fostered a renewed interest in foot marching. An article in the May 1989 issue of *ARMY Magazine* ("Hitchhiking into Battle: The Lost Art of Marching," by James A. Huston) discusses the importance of being able to move on foot when the situation dictates and implies that all units, both light and heavy, should train to execute foot marches. (See also "Roadmarching and Performance," by Lieutenant Colonel John S. O'Connor, Michael S. Bahrke, Captain Joseph Knapik, and James A. Vogel, *INFANTRY*, May-June 1990, pages 31-33.)

Infantry leaders must understand, however, that foot marches are not merely physical training exercises, athletic events, or qualification races for the Expert Infantryman's Badge (EIB). In fact, the speed-at-all-costs mind set has severely reduced the value of unit foot marches, because the soldiers are often too exhausted when they reach their final destination to accomplish anything else.

The essence of effective foot marching is discipline. Unlike the "every man for himself" attitude that prevails during the

individual-oriented EIB speed march (12 miles in 3 hours), leaders must establish a realistic objective that most of their soldiers can meet. They should conduct a unit march like a tactical maneuver that will allow their unit to reach an objective area in the proper physical and mental condition to fight. The concept of a tactical maneuver also tends to focus the soldiers' attention on the mission that awaits them at the end of the march rather than on the march itself.

OPERATIONS ORDER

An effective foot march requires an operations order. It should be a simple one and should contain an overlay that addresses the march route and the control measures. The order should accomplish the following:

- **Orient the unit on a specific tactical mission.** The purpose of the march is to move the unit into a position from which it can either accomplish that mission or prepare for another one.

- **Sequence all subordinate units and establish tactical integrity.** Units should not be allowed to pass each other or com-

pete for the fastest time, but should complete the march as a cohesive, disciplined force ready to spring into action. Subordinate units should be assigned a start point and a start time. These, coupled with an order of march and the march speed, should ensure that the units will not bunch up and present a lucrative target for enemy air attacks or indirect fires.

- **Designate a march speed.** The march speed chosen should be a factor of the unit's physical conditioning as well as the time the unit expects to arrive in the objective area. Leaders must determine how fast their unit can realistically move over the distance to be covered and still be fit to fight. This decision must be reassessed throughout the march, however, and the march speed adjusted as necessary.

- **Direct a 10- or 15-minute break for every 45-50 minutes of marching.** During breaks, foot checks should be made and other medical concerns addressed. These breaks should not be opportunities for the soldiers to socialize; security must be maintained and noise and light discipline enforced.

- **Establish a combat load, the special equipment to be carried, and a uni-**



form that is common to all. Units should march with what they must have to fight and survive. Leaders should specify rations, ammunition, clothing, fire control, and NBC equipment and then check their personnel and equipment before the march. In training, weights or partially filled sand bags can be used to simulate a basic load of ammunition.

- **Provide instructions for any personnel who do not complete the march with the unit.** This includes "fallouts" and other soldiers who, for any variety of reasons, may be left behind or transported to the final destination by other means.

A foot march is best when it can be integrated into tactical training that focuses on the events following the march, al-

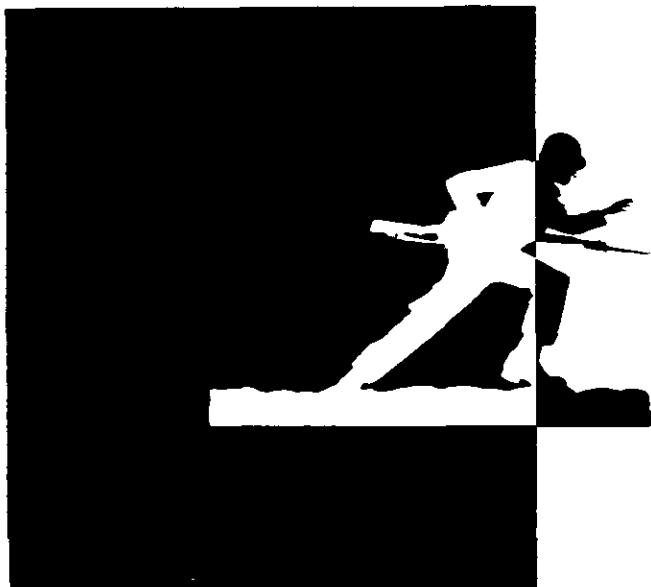
though it may not be possible or desirable to schedule a foot march preceding every field problem.

Units frequently conduct foot marches for physical conditioning during the physical training period of a scheduled day in garrison. To keep the soldiers interested and to build morale and march discipline, the route of march should not just take the unit in a circle back to the cantonment area. Conditioning marches of this type lack imagination and are boring. Leaders might consider coordinating a truck linkup or an airmobile extraction. The movement to the pickup zone can serve as the purpose of the march and can facilitate other training tasks for the soldiers before they return to the barracks.

There is nothing wrong with pure con-

ditioning marches that focus on individual or unit competition; these marches can build esprit de corps, and the physical conditioning itself is invaluable. But the focus of our leadership must be on our units' ability to execute tactical foot marches—foot marches that will place on the battlefield a fighting force capable of accomplishing its combat mission.

Lieutenant Colonel Roland J. Tiso, Jr., was executive officer of the 1st Battalion, 21st Infantry, 25th Infantry Division when he wrote this article. He has commanded companies in the 2d Infantry Division and the 101st Airborne Division and has had several assignments as a battalion S-3. He is now executive officer of the 193d Infantry Brigade in Panama. He is a 1973 graduate of the Virginia Military Institute and holds a master's degree from James Madison University.



ENLISTED CAREER NOTES



OBSERVER/CONTROLLERS FOR JRTC

The Enlisted Infantry Branch at PERS-COM is looking for qualified noncommissioned officers to fill positions as observer-controllers (O/Cs) at the Joint Readiness Training Center (JRTC), Fort Chaffee, Arkansas.

The NCOs selected for assignment to the JRTC will attend the O/C Certification Course. Certification focuses on teaching the NCO to observe, control, and coach light infantry units participating in exercises at the JRTC; observe and analyze unit performance throughout the planning, preparation, and execution of all missions; evaluate application of doctrine, technique, tactics, and procedures; assist in unit training by coaching, after action reviews (AARs), preparation of take-home packages, and oral and written feedback.

To qualify for O/C duty, an NCO must meet the following prerequisites:

- Be in the rank of staff sergeant (promotable) through master sergeant in PMOS 11C.
- Have experience as squad or section leader, platoon sergeant, or first sergeant in a light infantry division.
- Be considered fully qualified for promotion.
- Have served in his PMOS within the past two years (four years for soldiers completing tours as drill sergeants or recruiters).
- If a sergeant first class, have platoon sergeant time in an MTOE unit. (A promotable staff sergeant with platoon sergeant experience will also be accepted.)
- Skill qualification test (SQT) score of 80 or higher.
- General/Technical (GT) score of 110 or higher (can be waived to 100).
- Current official photograph.
- Not currently undergoing flagging action.

- Physical profile of 111111.
- Meet height and weight standards in accordance with AR 600-9.
- Have completed the Advanced Noncommissioned Officer Course (ANCOC).
- Have at least two years remaining on current enlistment or be willing to extend or reenlist.

A qualified NCO can request O/C duty at the JRTC by submitting DA Form 4187 (Personnel Action Request) and updated Forms 2A and 2-1 (Personnel Qualification Record) through his servicing personnel service center.

Questions may be directed to any enlisted infantry career advisor. The POC for information is MSG Noriega or SFC Dunner at AUTOVON 221-8056 or commercial (703) 325-8056.

EOA, IG ASSIGNMENTS

Infantry Branch is looking for qualified senior NCOs in the ranks of staff sergeant (promotable) through master sergeant/first sergeant for assignments as equal opportunity advisors (EOAs) and assistant inspectors general (AIGs).

A major consideration is that an NCO be in a troop-related assignment immediately before being assigned to one of these positions.

To qualify for one of these assignments, an NCO must meet the following prerequisites:

- Be a high school graduate or equivalent.
- Not have served a previous tour as an EOA or AIG.
- Meet body weight standards in accordance with AR 600-9.
- Have a GT score of 110 or higher.
- Have a score of 60 or higher on latest SQT.
- Be an ANCOC graduate or selectee.
- Have the ability to complete college

level courses.

- Meet service remaining requirements of two years.
- For EOA only, be in the rank of staff sergeant promotable or sergeant first class with less than two years time in grade and less than 15 years time in service.

Assistant IG duty is now a three-year stabilized tour, and an equal opportunity advisor assignment is a two-year stabilized tour, upon completion of the course.

Qualified senior NCOs who would like to volunteer for either type of assignment may do so by submitting DA Form 4187 through their personnel service centers. The POC for information is SFC Douglas, AUTOVON 221-8056/9399 or commercial (703) 325-8056/9399.

AIRBORNE INSTRUCTORS

Infantry Branch is accepting volunteer applications from airborne qualified staff sergeants and sergeants first class who want to be "black hats" with the 1st Battalion, 507th Infantry at Fort Benning, Georgia.

A qualified soldier overseas can apply for the Fort Benning assignment eight to ten months before his rotation date. A soldier in the continental United States must have served at least 48 months at his current station to qualify for reassignment.

Additional information is available from SFC Daniels at AUTOVON 221-8055/9399 or commercial (703) 325-8055/9399.

DRILL SERGEANT SELECTION CRITERIA

When AR 614-200, Enlisted Ranks (Selection of Enlisted Soldiers for Training and Assignment) Chapter 8, Update

ENLISTED CAREER NOTES

16, is released, there will be two changes in the prerequisites for NCOs applying for drill sergeant school and assignment:

All NCOs must have a GT score of 100 or higher and a profile series no less than 211221. Neither of these requirements can be waived, and the drill sergeant team at PERSCOM is now using both in their selection process.

Personnel service center (PSC) representatives and NCOs applying for this duty must ensure that DA Forms 2A and 2-1 (two of the enclosures in a drill sergeant application) reflect the correct data. In addition, the appropriate SIDPERS transactions must be submitted to update the enlisted master file (EMF).

Any questions pertaining to the selection criteria should be directed to SFC Alleyne at AUTOVON 221-8070/8394 or commercial (703) 325-8070/8394.

CMF 11 SDT

The Self-Development Test (SDT), a proposed rating system for noncommissioned officers, will be one of the key elements in determining NCO promotions, assignments, school selections, and retentions.

The SDT will be similar to the formal written examination on the current skill qualification test (SQT).

Soldiers in Career Management Field 11, Skill Levels 2 through 4 (sergeant through sergeant first class/platoon sergeant) will take an SQT during the March-May 1991 test window. They will take the new SDT for the first time during the March-May 1992 test window. Skill Level 1 soldiers (privates through

corporals/specialists) will not be tested in 1991, and there are no plans at this time to develop an SDT for them.

Most SDT questions will come from the Soldier's Manuals, while those concerning leadership will be formulated from a recent NCO leader development study. Tentatively, the SDT will consist of 100 questions. The first 85 of these will be MOS-related; the final 15 will cover the wear of the uniform and drill and ceremonies.

The current SQT for sergeants through sergeants first class will be used until the SDT system is fully implemented.

The Infantry School POC is Captain Timmons, AUTOVON 835-1700/7670 or commercial (404) 545-1700/7670.

BATTALION CSM TRAINING

PERSCOM has developed a course that will prepare command sergeant major (CSM) designees to perform the duties and responsibilities of battalion CSMs. The goal is to train all designees before they begin their initial assignments while also trying to prevent any CSM vacancies.

In the future, a battalion-level CSM selectee chosen for upward mobility to a programmed vacancy at brigade level or higher will not leave his current assignment until the arrival of his designated replacement, or within 30 days of the replacement's report date. If the replacement is a CSM designee, he will not move into the battalion-level position until he completes the CSM designee course.

During Calendar Year 1991, the Sergeants Major Academy will conduct these classes monthly instead of bi-monthly.

MORE PROMOTION POINTS FOR RANGER TAB

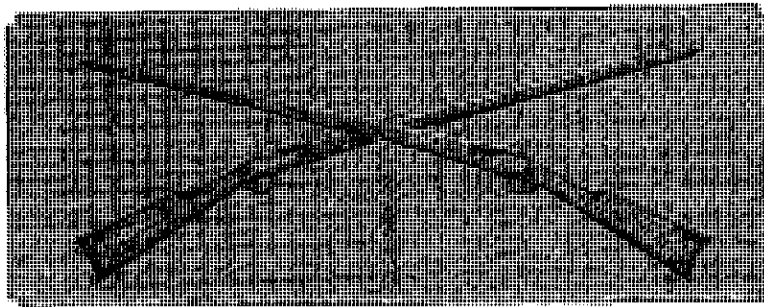
Effective 1 July 1990, the promotion points awarded for the Ranger tab have been increased from five to 10. Increasing the points for the tab to 10 brings it in line with comparable awards and badges such as the Expert Infantryman's Badge (EIB) and the Expert Field Medical Badge (EFMB).

Soldiers who are eligible for these points may request an adjustment in accordance with AR 600-200, Enlisted Personnel Management System. Those who do not request an adjustment will have the additional points for the Ranger tab awarded during the next scheduled promotion recomputation.

COLLEGE GRADUATES AS SPECIALISTS

College graduates may now enlist in the Army as specialists under a new accelerated promotion policy. The old policy limited accelerated promotions to private first class only for recruits with more than 60 semester hours of college credit.

Under the revised policy, recruits with 60 semester hours may still come into the Army as privates first class, and those with 30 to 59 hours credit may continue to enter as privates-2 (PV2).



OFFICERS CAREER NOTES



FROM THE BRANCH CHIEF

Army officers are in a competitive business, and as rank increases so does the level of competition. Each grade or school selection gets a little tougher. The most commonly asked question after, "Where am I going next?" is "How well am I doing?"

Although each selection board is different, the officers who serve on them report several common problems:

Photos. Too often, the photo in an officer's file is out of date or of poor quality, or there is no photo at all. It is your mission to make sure a good picture gets in your file. Some common problems are poorly fitted uniforms that make you look overweight, unpressed uniforms, unauthorized items such as infantry cord or green tabs and, surprisingly, unauthorized awards and decorations.

When you go to be photographed, take someone with you who can help you make your uniform look neat and properly fitted. (Spend the extra money to have your uniform tailored if you have to.)

You who are commanders can play an important role in this. Have every one of your subordinates produce his latest photo for your review, and you will quickly see the problems. Some of you are already doing this, and it is paying big dividends.

Officer Record Brief (ORB). The ORB is one of the most important documents, yet one of the biggest problem areas. Many officers are frustrated because changes they have submitted do not show up on their ORBs. But keep submitting them to your local military personnel office (MILPO), and force the system to work. (Infantry Branch has little time available for such record keeping.)

Don't worry about the little things; fix the important entries. Changing 11 months to 12 or Company A to Company

B, for example, is not as important as showing a complete assignment history. Spending 26 months as a brigade S-3 is somewhat unusual. If that figure should be 12 months instead, then it should be corrected.

A technique used by many commanders is to require their officers to review their ORBs with them before and after their birth month record checks and to get a follow-up copy a few months later to see if the necessary changes have been made. Every officer should at least do a detailed review before his records go to a selection or promotion board. Some ORBs that boards see have so many corrections that they are barely readable.

OERs. I won't try to tell you how to do your job or try to explain how to control a senior rater profile. And the following comments are based strictly upon my opinion but an opinion that I developed after reading a few thousand reports and closely examining the results of many selection boards.

First, *command reports are critical.* A center of mass (COM) report from your senior rater puts you at risk for command and staff college (CSC) selection and probably takes you out of the running for battalion command. A below center of mass (BCM) report automatically makes you a promotion risk, and it is unlikely that you can overcome it, regardless of how good your subsequent command reports might be.

The most important portion of the OER is the senior rater section (block check, profile, and narrative). This does not mean the rater is less important or that he should take his responsibilities less seriously. He needs to do his best to make an accurate and fair evaluation and to "sell" the rated officer to the senior rater. But he is not required to compare the officers he rates, and that puts the burden on the senior rater, whose profile clearly compares you to your contem-

poraries. As a result, the profile carries the most weight. If the profile and the narrative disagree, boards tend to go with the profile. For instance, if the profile is 8, 10, and 4 (in the top three blocks respectively), you are placed in the 3 block (with three others); at the same time, if the narrative says you should be a major and go to command and staff college, there is a conflict. But the profile clearly shows that you shouldn't be selected, and you probably won't be.

Height and Weight. If you are near the top of the magic table, or if you exceed it, be careful. Every board member has the weight table taped to his microfiche reader. If your picture makes you look overweight and the data says you are overweight, you already have two strikes against you. Your rater had better say more than that you meet the body fat requirements. He should also address your physical and athletic ability.

Your height and weight data on the OER and ORB ought to be accurate and within limits, regardless of body fat. If it isn't, although the regulations allow you a few more pounds on the basis of a body fat determination, there appears to be a big question as to the data's validity. It's like having a mustache on your official photo—it is allowed by regulation, but still may affect your selection.

Rater Profiles. Profiles are easy to read but hard to rate and control. *Top-siding a profile does not reward the outstanding performers and really hurts those two-block officers who are then below center of mass.* Many officers have been hurt because their senior raters allowed them "room to grow."

Senior raters have a tough job. They are selecting future leaders and commanders, so their vote must count. But they are also determining who won't make the cut. They must control their profile, know the procedures for restarting it when they have lost control, and

OFFICERS CAREER NOTES

have the guts to look an officer in the eye and tell him why he got a certain rating. If the profile is immature (based on a small number of ratings) or open to interpretive risk, the rater should take a sentence or two to explain his intent.

We at Infantry Branch try to identify poor profiles, and I have been sending letters to some senior raters to let them know they have a problem. Some of these letters have not been well received, but the intent is to help our infantrymen.

Many other important issues help make up the total equation (branch qualification, jobs, schooling, and the like). But good officers will be selected if their duty performance warrants it.

I encourage you to take a more active role in preparing your records, and your commanders should do the same. Get copies of your microfiche and ask your commanders for their comments.

The other tip I will offer is: Don't wait until three weeks before your board convenes to begin reviewing your records. At least 30 days' notice is required before a board can be held, and most notifications are much earlier.

We will help you in every way we can, but the responsibility for having your records up to date is yours, and nobody should be more interested.

TERRY J. YOUNG
LTC, Infantry

CAS3 REQUIREMENT FOR MAJORS

A memorandum dated 26 September 1990 published by the Military Education Center, Officer Personnel Management Directorate says, "Completion of CAS3 is required prior to attending any MEL 4 producing school."

This does not mean that an eligible officer cannot be selected to attend the Command and General Staff College (CGSC) or another MEL 4 school. It means that he cannot attend such a course until he is a CAS3 graduate (MEL N). Officers in Year Group 1979 or later must complete CAS3 before attending CGSC or any other MEL 4 producing school.

Questions should be directed to MAJ Koehler or MAJ Schook, AUTOVON 221-5510/5511 or commercial (703) 325-5510/5511.

INFANTRY PRE-COMMAND COURSE (IPCC)

The note on the Infantry Pre-Command Course that appeared in the November-December 1990 issue of *INFANTRY* (page 47) was not completely correct. The following is a corrected version:

The IPCC, conducted at Fort Benning, is designed to help senior Army leaders prepare for the command of U.S. Army infantry units. The 8.5-day course focuses on how to train, maintain, and fight. It is open to Active Army and Reserve Component infantry and Special Forces officers who are commanding infantry or Special Forces battalions, infantry brigades, or Special Forces groups, or who have been designated to assume command of these units. An additional one-week Bradley Fighting Vehicle Commanders Course is conducted for officers who are designated to command Bradley units.

The first week of the course teaches maintenance, weapon competency, and training management, and includes a staff ride to the Chickamauga Battlefield site. The instruction during the remaining time focuses on tactics and synchronizing the

battlefield operating systems. Brigade command designees actively plan and execute brigade operations, and each provides his commander's intent to the battalion commanders.

Finally, tactics instruction focuses on both heavy and light battalion and brigade operations. In addition to these mandatory subjects, the officers in the course also have the option of attending several electives, many of which are tailored to the needs of the individual students. Interspersed through the course are sessions with either the commandant or the assistant commandant of the Infantry School.

Additional information on the course is available from the Course Monitor, CPT Balkcum, DOTD, USAIS, AUTOVON 835-7315/2783.

RA OATH

U.S. Army Reserve (USAR) officers who are promoted to major should execute the Regular Army (RA) oath of office immediately. A recent look at files indicates that many majors' files do not contain a DA Form 71, Oath of Office.

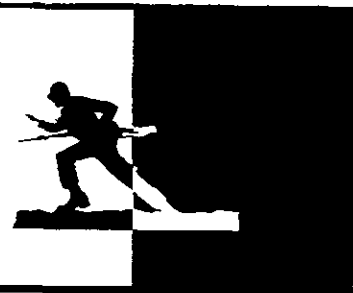
More important, these officers have the incorrect component listed on the Officer Record Briefs. If your file does not have the RA component listed, send a copy of your DA Form 71, or a copy of your formal declination of entry into the Regular Army, to Infantry Branch.

INFANTRY OFFICER ADVANCED COURSE					
FISCAL YEAR 1991					
CLASS	REPORT	BRANCH TRIP*	ORDERS**	GRADUATION	
91-2	23 Jan 91	4-8 Feb 91	27 Mar 91	18 Jun 91	
91-3	13 Mar 91	25-29 Mar 91	15 May 91	6 Aug 91	
91-4	24 Jul 91	5-9 Aug 91	25 Sep 91	19 Dec 91	
91-5	21 Aug 91	3-6 Sep 91	23 Oct 91	31 Jan 92	

*Date Infantry Branch team will visit.
**Date request for orders will be issued for follow-on assignments.

COMBINED ARMS AND SERVICES STAFF SCHOOL			
FISCAL YEAR 1991			
CLASS	REPORT DATE	START DATE	END DATE
91-04	23 Jan 91	24 Jan 91	26 Mar 91
91-05	19 Mar 91	20 Mar 91	21 May 91
91-06	03 Apr 91	04 Apr 91	04 Jun 91
91-07	29 May 91	30 May 91	30 Jul 91
91-08	10 Jun 91	11 Jun 91	09 Aug 91
91-09/10	12 Aug 91	13 Aug 91	11 Oct 91

BOOK REVIEWS



We recently received the first book we have seen on the current crisis in the Middle East. It is **SADDAM HUSSEIN AND THE CRISIS IN THE GULF**, by Judith Miller and Laurie Mylroie (Times Books, Random House, 1990. 288 Pages. \$5.95, Softbound). Written in just 21 days by the *New York Times* special correspondent covering the Persian Gulf (Miller) and a Fellow at Harvard's Center for Middle Eastern Studies (Mylroie), most of the book is devoted to the strong man of Iraq—his background and coming to power, his brutal methods of gaining and maintaining absolute power, his conduct of foreign policy, his war with Iran, his reasons (vague, at best) for invading Kuwait, and his possible future actions (but in general terms only).

The authors seem far more critical of U.S. policy in the Middle East than they do of Hussein's and suggest that the U.S. has no one but itself to blame for what has happened because of the support it has given Hussein over the years. They also believe the only reason why U.S. forces are in Saudi Arabia today is "to protect the nation's access to oil."

As some writers suggested following the U.S. operation in Panama just 13 months ago, these writers think that *this one in the Middle East—DESERT SHIELD*—is nothing but another U.S. ego trip and the country is trying once more to "reaffirm for itself an imperial role in a post-imperial age."

Despite the carping tone of parts of the book, it is useful for background information.

Another recent book on Middle Eastern affairs all Infantrymen need for background information is this reprint of David Fromkin's 1989 book, **A PEACE TO END ALL PEACE: THE FALL OF THE OTTOMAN EMPIRE AND THE CREATION OF THE MODERN MIDDLE EAST** (Avon Books, 1990. 635 Pages. \$14.95, Softbound). The book covers a short period of time, from 1914 to 1922, but it was the events that were played out during those years that created the Middle East as we know it today. The author, an international lawyer, draws on both primary and secondary sources to tell a fascinating story. He points out, quite graphically, why "the settlement of 1922, therefore, does not belong entirely or even mostly to the past; it is at the very heart of current wars, conflicts, and pol-

itics in the Middle East...."

We have also received a sizable number of publications about the World War II era that should be welcomed by all who are interested in that war and the events surrounding it.

For example, we have three more of the U.S. Army Center of Military History's reprints from the American Forces in Action series, which consists of 14 softbound publications that were originally issued during or shortly after the war. These three are: **MERRILL'S MARAUDERS, FEBRUARY-MAY 1944** (CMH Pub 100-4, 1990. USGPO S/N 008-029-00203-5. 117 Pages. \$4.75, Softbound); **THE ADMIRALTIES: OPERATIONS OF THE 1st CAVALRY DIVISION, FEBRUARY 29-MAY 19, 1944** (CMH Pub 100-3, 1990. USGPO S/N 008-029-00202-7. 151 Pages. \$5.50, Softbound); and **GUAM: OPERATIONS OF THE 77th DIVISION, JULY 21-AUGUST 10, 1944** (CMH Pub 100-5, 1990. USGPO S/N 008-029-00204-3. 137 Pages. \$5.50, Softbound).

Each of these volumes contains a concise summary of some of the major campaigns and battles the Army fought during World War II. We have mentioned other reprinted volumes from this series in previous issues. They are being reprinted, fortunately for all of us, as part of the Army's commemoration of the 50th anniversary of the war.

From Artabras Publishers (488 Madison Avenue, New York, NY 10022) we have received another Center of Military History reprint—this one the three-volume series titled **THE UNITED STATES ARMY IN WORLD WAR II: A PICTORIAL RECORD**, the volumes of which were originally published in 1951 and 1952. In all, the series has more than 2,000 black-and-white photographs and 1,426 pages. The set sells for \$49.95, a bargain considering today's book prices.

Volume I is titled **THE WAR AGAINST GERMANY: EUROPE AND ADJACENT AREAS**; Volume II: **THE WAR AGAINST GERMANY AND ITALY: THE MEDITERRANEAN AND ADJACENT AREAS**; and Volume III: **THE WAR AGAINST JAPAN**.

The photographs present a complete coverage of every major Army campaign in all of the theaters of war. The publisher is to be

complimented for bringing back to life one of the most important series of World War II books.

There is also **THE BREAKING POINT: SEDAN 1940 AND THE FALL OF FRANCE**, by Robert A. Doughty (Archon Books, The Shoe String Press, 1990. 374 Pages. \$39.50). The author is a serving U.S. Army officer and the chairman of the history department at the United States Military Academy. In this book, he builds on his previous work in which he discussed the development of French Army doctrine between 1919 and 1939 to show the failure of that doctrine in May 1940. Although his primary interest is in the actions of the French Army units defending that portion of the Meuse River line centered on Sedan, he does give a detailed picture of the operations of General Heinz Guderian's XIXth Panzer Corps as it smashed its way through the French lines and poised for its later dash to the sea.

The book covers, in detail, only a six-day period—10-15 May 1940—but along the way the author destroys a number of myths that have become associated with this particular operation. Unfortunately, his book is extremely difficult to read because he has deliberately chosen "to separate the German actions from the French reactions." Accordingly, a reader gets the feeling he is reading the same story over and over again. Unfortunately, too, the maps lack the detail necessary to follow the author's detailed tactical narrative.

Still, the book deserves to be read, dissected, and studied by all infantrymen. After all, this was a battle that was fought and won largely by German infantry units, not by German tankers.

A similar book is **GUDERIAN'S XIXth PANZER CORPS AND THE BATTLE OF FRANCE: BREAKTHROUGH IN THE ARDENNES, MAY 1940**, by Florian K. Rothbrust (Praeger, 1990. 201 Pages. \$39.95). The author is also a serving U.S. Army officer, but his book is a far more general treatment of the same operation discussed by Robert Doughty and does not in any way compare favorably with Doughty's book.

The author is concerned more with the sheer complexity of the operation than with the fighting itself. His narrative is a short one and

BOOK REVIEWS

takes up fewer than half of the book's pages. The remainder is devoted to various appendixes (the maps in Appendix A are not numbered properly). He does not dwell at all on the French actions. If a reader wants a quick overview of this particular operation, though, this is the place to start.

A somewhat different book is **THE GOOD YEARS: MacARTHUR AND SUTHERLAND**, by Paul P. Rogers (Praeger, 1990. 380 Pages. \$49.95). The author served as stenographer and chief clerk in the office of General Douglas MacArthur and his chief of staff, Lieutenant General Richard Sutherland, during the entire World War II period. As part of his duties, he organized and supervised the office files and managed a force of six men. He was the only member of the office staff to serve continuously for the full term of the war and the only enlisted man MacArthur took from Corregidor at the time of the evacuation in March 1942.

In this, the first of two planned volumes, the author recalls the events of the first year of the war in the Pacific as he saw them from his high-level position. (He throws in a lot of political and military history that he learned much later.)

In reality, his book is more about himself than it is about either general, although he does offer a fresh view of the MacArthur-Sutherland relationship and on how the latter carried out the duties of his demanding office. He also includes some interesting views of other high-level commanders who served in the Pacific. But overall, this is Rogers' story as much as it is anything else.

A far different sort of book is **ERNIE'S WAR: THE BEST OF ERNIE PYLE'S WORLD WAR II DISPATCHES**, edited by David Nichols (Random House, 1986. 432 Pages. \$19.95). Anyone who served in one of the armed forces during the war will remember Ernie Pyle. To most Infantrymen, his writings and his feelings for the front line soldier were never duplicated, except perhaps by Bill Mauldin's cartoons. In this book, the editor has pulled out for us the Ernie Pyle columns he considers most memorable and has arranged them by specific areas of operations: Great Britain, North Africa, Sicily, Italy, France, and the Pacific.

This is one book that all of today's Infantrymen should read, if they cannot get hold of Pyle's original books such as **HERE IS YOUR WAR** and **BRAVE MEN**. The columns Pyle wrote told of war as it really was; we have not seen his like since he died on Ie Shima in April 1945.

Still in the World War II era, we have another reprint for you: **THE NARROW**

MARGIN: THE BATTLE OF BRITAIN AND THE RISE OF AIR POWER, 1930-1940, by Derek Wood and Derek Dempster (originally published in 1961 and revised in 1969. Smithsonian Institution Press, 1990. 383 Pages. \$39.95). This new edition of an outstanding reference work has been re-set and re-designed, but still contains its original 200 photographs, 30 maps, and other illustrations. It is divided into three major parts, the first two of which deal with the developments in air power from 1930 and the events immediately preceding the 10 July starting date of the Battle for Britain.

The third section is a day-by-day chronology that draws on personal recollections and official records to tell what was happening in and around Great Britain as the battle progressed to its end on 31 October 1940, including the great aerial battles that took place on 15 August.

The book also includes 25 appendixes—types of aircraft, orders of battle, casualties, and the like—and an index, although in the copy we have the last page or two of the index are missing.

Another name that all World War II veterans will remember is **YANK**, an Army weekly that was published between May 1942 and the end of December 1945. A new book titled **YANK: WORLD WAR II FROM THE GUYS WHO BROUGHT YOU VICTORY**, by Steve Kluger (St. Martin's Press, 1990. 356 Pages. \$25.00), tells why the name (and the publication) was so well known. Its reporters covered operations throughout the world; its articles were well written (many of its staff writers either were or would become well known writers in the civilian world); its combat art and photography were outstanding; and it gave a lot of enlisted men a place to get things off their chests. After you have read Pyle's books and studied Mauldin's cartoons, pick this one up and thumb through it. You won't be disappointed.

We were also happy to see yet another reprint arrive in our office: the massive **HANDBOOK ON GERMAN MILITARY FORCES**, published originally by the U.S. War Department in March 1945 as Technical Manual TM-E 30-451, and now reprinted in a slightly different format with an introduction by Stephen E. Ambrose (Louisiana State University Press, 1990. 651 Pages. \$39.95). This handbook was one of a series of studies of foreign military forces prepared by the U.S. Army's War Department during World War II. It was originally published in a loose-leaf format with each chapter being self-contained and open-ended so that new material could be added as it became avail-

able. Only a limited number of copies were printed, and these were classified.

When the war ended, a few copies were placed in military libraries while the rest were mostly discarded. It has been generally unavailable and even unknown to many who are interested in World War II affairs.

The volume from which this facsimile edition was prepared came from a private collector's library. All classification has now been removed by the Army. The LSU Press, which deserves great credit for making this handbook available to the general public, has added, over and above the introduction, consecutive page numbers and a comprehensive index. The text and illustrations, however, appear exactly as they did in the original.

As Stephen Ambrose points out, the book "covers everything from the high command to the lowest private. The organization of the German Army is described better than it has been anywhere else; so too for its weapons, its tactics, its field equipment, its morale, its uniforms, and much else."

It is too bad there is no similar published work on the World War II U.S. Army.

Finally, we have **FEEDING THE BEAR: AMERICAN AID TO THE SOVIET UNION, 1941-1945**, edited by Hubert P. van Tuyl (Contributions in Military Studies Number 90. Greenwood Press, 1989. 212 Pages. \$37.95), a fine study of the kinds and amounts of Lend-Lease supplies and equipment the U.S. sent to Russia during the World War II years, and the effect those supplies had on the outcome of the war on the Eastern Front. As might be expected, the editor buttresses his findings with many supporting tables—46 all told.

One of his most interesting theses is that "the war offered the Soviet Union unprecedented opportunities for acquiring foreign technology." This undoubtedly helped the Soviet economy during the early post-war years.

The editor also believes that the overall program was a successful one for the United States, and that while "the Soviet Union most likely would have survived without Lend-Lease, and eventually the United Nations would have prevailed... the war would have been longer, the alliance less firm, and the victory possibly less complete."

Here are a number of our longer reviews: **GETTYSBURG: THE SECOND DAY**. By Harry W. Pfanz (University of North Carolina Press, 1987. 601 Pages. \$34.95). **MOTHER, MAY YOU NEVER SEE THE SIGHTS I HAVE SEEN**. By Warren Wilkerson (HarperCollins, 1990. 665 Pages. \$30.00). Both books reviewed by

Major Don Rightmyer, United States Air Force.

The first of these books is undoubtedly one of the finest tactical Civil War histories published in recent years. It is a massive work but the title is somewhat misleading. In fact, its first three chapters are devoted to the events leading up to the Pennsylvania campaign, and to the first day of fighting on 1 July 1863.

The remaining 12 chapters don't actually focus on the second day of the fighting, either. Rather, the author concentrates his attention exclusively on the fighting that took place between the two Round Tops and along Cemetery Ridge, the Union Army's left wing. He does not tackle the fighting that occurred on the Army's right wing.

Overall, the book is exceptionally well written and the author exhibits an amazing grasp of the battlefield's terrain, troop movements, and the events that he writes about. That's not surprising because his career included a ten-year tour as the Gettysburg battlefield park historian. The only criticism that can be offered is the lack of maps in the first 120 pages where the movements of the two armies from Virginia to Gettysburg are detailed.

The second book is a contemporary regimental history of the 57th Massachusetts Veteran Volunteers. It is interesting for two reasons: The unit was composed primarily of veteran soldiers in late 1863 who had already seen service of some length earlier in the war; and the unit fought from the Second Wilderness to Petersburg. It suffered severe losses, and only a remnant survived to march in the Grand Review at the war's end.

The reader will come away from this book with a much fuller appreciation of what the war was like for the men in blue in 1864 and 1865. The author concentrates on the enlisted men and officers below the rank of major, and concludes with detailed biographies and service records for many of the regiment's members.

JANE'S INFANTRY WEAPONS, 1990-1991. 16th Edition. Edited by Ian V. Hogg (Jane's Information Group, 1990. 896 Pages. \$185.00).

This new edition of the standard reference work in its field contains the usual parts: data tables at the beginning, then separate sections for personal weapons, crew-served weapons, ammunition, and ancillary equipment (sighting equipment, viewing and surveillance devices, personal protection). An addendum adds information on four weapons. The book also contains a list of national inventories and several appendixes.

In his foreword, the editor looks forward to a possible "fourth generation" of small arms, weapons that will be made of solid steel and machined by computer-controlled machine tools and electronic measurement technology. What he particularly looks forward to is the day when "we can get rid of these pressed-steel-and-wire-spring wonders and go back to making small arms out of decent chunks of metal so that they will withstand what the soldier hands out to them and still look good after 20 years."

A few of his thoughts have been overtaken by the events in the Middle East, but we feel certain we will get them in the next edition of this great work.

BETTER A SHIELD THAN A SWORD: PERSPECTIVES ON DEFENSE AND TECHNOLOGY. By Edward Teller (Macmillan, 1987. \$19.95). Reviewed by Major James B. Leahy, Jr., United States Army.

Edward Teller, who is known primarily for his work in the development of the atomic and hydrogen bombs, has written a book that explains and supports the concept of strategic defense. At the same time, he gives the reader his unique perspectives on the relationship between science and democratic government.

Much of his book is introspective and, interestingly enough, he says that in hindsight the United States should not have dropped an atomic bomb on Japan until one had been harmlessly demonstrated first, perhaps at 30,000 feet over Tokyo Bay.

Teller provides an introduction to some of the technologies involved in the development of the strategic defense initiative; it is particularly interesting and easy for non-physicists to understand.

His support for the SDI can be inferred from the book's title, and his thesis is that it is morally superior to channel resources into what he terms "antiweapons" of defense than into weapons of attack. His response to those who criticize SDI is this: "Complete safety and security were not possible in the past; they are not going to be available in the future. What we can achieve is an improved ability to deter war." Given the recent invasion of Kuwait by Iraq, a nation forecast to have ballistic missiles by the end of this century, those who are eager to do away with SDI might want to reconsider their proposals and the wisdom of Teller's admonition.

We might also do well to consider Teller's thoughts on how naivete can lead to tragedy. He observes, "Agreement between nations in turn is shaped by what weapons and safe-

guards technology has made available. Absolute reliance on the human element, on trust, is no more realistic than absolute reliance on the sword or on the shield."

I recommend this interesting and readable book to all who are interested in the thoughts of one of the great scientific minds of our time and a man whose work has had a considerable effect on the military services.

CRISIS ON THE DANUBE: NAPOLEON'S AUSTRIAN CAMPAIGN OF 1809. By James R. Arnold (Paragon House, 1990. 286 Pages. \$22.95). Reviewed by Colonel John C. Spence III, United States Army Reserve.

This recent book on the Napoleonic period focuses on the Austrian campaign of 1809, and the author has succinctly presented a large amount of important data. He first discusses the diplomatic intrigues practiced by Napoleon's foreign minister, Talleyrand, and then Metternich's actions as the Austrian diplomatic genius.

The author presents a detailed analysis of the force structure, material, and manpower resources of both France and Austria as war between the adversaries neared. He also gives a good description of the major battles of the war and suggests a number of reasons why the French prevailed despite their numerous tactical errors.

This is a well written and valuable book.

MILITARY PERIODICALS: UNITED STATES AND SELECTED INTERNATIONAL JOURNALS AND NEWSPAPERS. Edited by Michael E. Unsworth (Greenwood Press, 1990. 448 Pages. \$75.00).

This is an outstanding reference work, one that has been needed for many years. The editor, who is the history bibliographer at the Michigan State University Libraries, has pulled together a world of source material to give the histories of selected non-classified periodicals, mostly American, that are devoted to military and naval subjects. (Yes, INFANTRY has four plus pages, all nicely done.)

The book has three main sections: detailed profiles of the most prominent journals; shorter descriptions of other periodicals, mainly those that have appeared since World War II; and a description of those publications that have been printed in multiple editions such as *Stars and Stripes* and *Yank*. (INFANTRY is

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in part one.) The book also has a selected chronological list of significant military events and military periodicals, a list of the journals arranged by subject, and a detailed index.

For each publication, there is a bibliography of sources, a publication history, and a list of the editors. Although it is an expensive book, every military library should have at least one copy, and all Infantrymen, particularly those who want to write for publication, should become familiar with its contents.

UNKNOWN WARRIORS: CANADIANS IN THE VIETNAM WAR. By Fred Gaffen (Toronto: Dundurn Press, 1990. 366 Pages. \$19.95). Reviewed by Doctor Joe P. Dunn, Converse College.

During the Vietnam War, an unknown number of Canadians enlisted in the U.S. military services. They did so for a number of reasons including adventure, anticommunist feelings, personal connections with the United States, or the pursuit of a military career. Many volunteered to serve in Vietnam and an estimated 6,000 Canadian enlistees ultimately fought there. Counting resident aliens living in the U.S. and subject to the draft, the total number of Canadians who served in Vietnam may have been twice that many. The names of 79 appear on the Vietnam memorial in Washington, D.C.

This oral history of 64 participants is a first attempt to tell the story of the Canadian veterans of the Vietnam war. They tell who they were, what motivated them to go to Vietnam, and what happened to them when they returned. The book covers their range of experiences in Vietnam and touches on postwar problems with Agent Orange, post-traumatic stress syndrome, relations with families and peers, and the fact that they received no benefits.

Although the author emphasizes that his book treats a neglected aspect of the Vietnam war, in truth it is merely another addition to the rather large body of first person accounts. Although it is not a monumental addition, all such works contribute to our larger understanding of the war's effects.

RECENT AND RECOMMENDED

DICTIONARY OF THE VIETNAM WAR. Edited by James Olson. Originally published in

hard cover in 1988. Peter Bedrick Books (2112 Broadway, New York, NY 10023), 1990. 596 Pages. \$16.95, Softbound.

THE WESTERN WAY OF WAR: INFANTRY BATTLE IN CLASSICAL GREECE. By Victor Davis Hanson. Originally printed in hard cover in 1989. Oxford University Press, 1990. 245 Pages. \$8.95, Softbound.

THE BANANA WARS: A HISTORY OF THE UNITED STATES MILITARY INTERVENTION IN LATIN AMERICA FROM THE SPANISH-AMERICAN WAR TO THE INVASION OF PANAMA. By Ivan Musicant. Macmillan, 1990. 470 Pages. \$24.95.

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