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This medium is approved for official dissemination of material designed to keep individuals within the Army knowledgeable of current and emerging developments within their areas of expertise for the purpose of enhancing their professional development.

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FRONT COVER: The combined efforts of infantry and armor were often necessary to overcome determined enemy resistance as U.S. forces in Europe moved to seize built-up areas.

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them are enormous. Second generation FLIR will double the thermal identification range capability of the first generation FLIR now in use. This means the observer will be able to differentiate between friend and foe before they emit a missile or send down range. This will obviously greatly reduce the chance of fratricide, and the reduction of error will increase our ability to acquire and engage enemy vehicles, while leaving U.S. soldiers the advantage of the standoff advantage of many of our weapons systems.

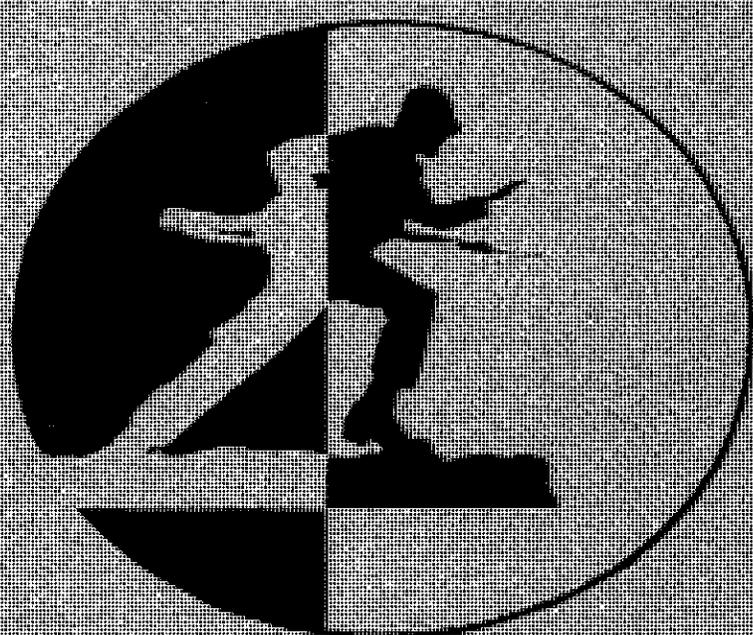
Second generation FLIR will also offer us a long wavelength ability to see out to the maximum effective range of our weapons. In practical terms, it is estimated that the technology will provide a 30 percent increase in the number of targets detected and a 44 percent increase in the number of targets hit, even the detection and hit probabilities of the first generation FLIR.

The improved FLIR will offer other advantages to commanders. Since second generation FLIR will allow commanders to detect, identify, and engage targets at greater ranges, they will have more time to make decisions and to synchronize fire and maneuver. Commanders will find another aspect of second generation FLIR useful as well. It has been designed with a digital port that will facilitate the transmission of FLIR imagery. This will improve command and control, let commanders take full ad-

vantage of their weapons' effectiveness, and enhance a commander's awareness of what is actually happening on the battlefield.

The FII program for second generation FLIR is rapidly moving forward. Milestones and schedules are being defined and finalized, contracts are being awarded, and the details of program execution being resolved. Our intent is to get second generation FLIR into the soldiers' hands as quickly as possible. Once FLIR is fully fielded, our soldiers will once again have a night vision capability unequaled by any opponent. They will be able to see farther, shoot farther with greater accuracy, differentiate between friend and foe, and defeat the process, effective lines that will destroy the enemy's will and ability to fight. The result will be victory, achieved in a minimum of time and with the least possible friendly casualties.

We live in exciting times. Technology has yielded quantum improvements in weapons and ammunition, command and control systems, air logistical support capability, and our ability to deploy rapidly in response to a threat anywhere in the world. Today, progress is measured in great leaps, and the addition of second generation FLIR to our inventory represents yet another leap forward, one that will assure that for the foreseeable future the United States Army will continue to own the night.



INFANTRY LETTERS



BRADLEY MILES TRAINING

Captain Gregory A. Watt's article, "Bradley Miles Training: What I Didn't Know as a Company Commander" (INFANTRY, May-June 1993, pages 32-35) is a refreshing, practical guide for leaders who are concerned with achieving maximum training benefits from the multiple integrated laser engagement system (MILES).

After reviewing this excellent piece and consulting with Mr. Larry Durrence, MILES Training Instructor with the 24th Infantry Division, I believe the following points raised in the article can be clarified for your readers:

- The article indicates testing the FLASHWESS (flash weapon effects signature simulator) in the dry-fire mode. The FLASHWESS on a Bradley will not flash, however, when the 25mm/COAX transmitter key is set in the dry-fire mode. The key receptacle must be set in the AWESS (automatic weapon effects signature simulator) before the light will flash.

- MILES check-out procedures indicate placing the detector belt in front of the transmitters to ensure laser output. Historical data proves that detectors must be checked before testing the laser output. When a crew tests a laser on a detector belt that may not be serviceable, the test may lead them to believe the laser is defective.

- The article states that the multiple range alignment device (MRAD) can be used as a target. Units have experienced problems, however, when using the MRAD as a target, because it does not define the difference between a near miss and a kill beam. This falsely leads a crew to believe that their laser transmitter is properly aligned.

- In reference to BFV MILES alignment procedures, it is not necessary to select Missile 1 or 2 when boresighting

the TOW missile. This correction is in accordance with the MILES operator manual.

Captain Watt's diligent effort to demystify BFV MILES is to be commended. It is crucial that we educate leaders thoroughly to avoid mistakes that may detract from training with simulation devices.

PAUL J. KERN

BG, U.S. Army

Assistant Division Commander-Maneuver
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HIT, KILL PROBABILITY WITH BRADLEY MILES

In response to Captain Gregory A. Watt's excellent article, "Bradley MILES Training," in INFANTRY's May-June 1993 issue, I would like to add the following observations: Probability of hit and probability of kill data are dependent upon several factors, including range to target, aspect of the vehicle (front, side, or rear), and whether the firer or the target is moving (or both). Unfortunately, MILES devices are not able to include these variables.

The probability of kill for a BFV against a BMP is less than for the BMP-1 against the BFV for several reasons. The BFV's 25mm gun is an area weapon, not a precision weapon, and it requires several bursts of several rounds each to guarantee hits. Additionally, killing a BMP-type target requires several 25mm round penetrations. As the range to target increases, the horizontal and vertical dispersions of the rounds increase, and the penetration of the armor-piercing rounds decreases; consequently, more rounds must be fired to guarantee a kill.

The BMP-1's probability of kill against the BFV is higher than the other way

around because it has a 73mm high-explosive antitank (HEAT) round that can penetrate 300mm of armor and requires only one penetration to kill a BFV. Field Manual (FM) 23-1, *Bradley Gunnery*, lists the BMP-1's 73mm HEAT round as having a maximum effective range of 800 to 1,000 meters with a .50 probability of hit.

Both the gunnery manual and FM 7-7J, *The Mechanized Infantry Platoon and Squad (Bradley)*, state that the maximum effective range for the 25mm armor-piercing discarding sabot (APDS) round is 1,700 meters due to tracer burnout. It is very difficult to adjust fire without the tracer. Flank shots increase probability of hit and kill. FM 7-7J also says, "The TOW is best fired at the flank or rear of tanks at ranges between 1,500 and 2,500 meters to reduce the flight time of the missile and provide the best attack profile of the vehicle."

The correct number of rounds and probabilities of hit and kill are available in FM 101-60-32, *Effectiveness Data for the M2A1/M3A1 Bradley Fighting Vehicle*, 1989.

MICHAEL R. JACOBSON
Columbus, Georgia

THE BATTLE OF BUNA

I have read Captain Dominic J. Caracilo's article "The Battle of Buna" (INFANTRY, May-June 1993, pages 18-23) and would like to add some comments.

This is an excellent article, and the publication of Colonel Robert H. Clegg's article on operations in the tropics ("Tropical Regions: Influences on Military Operations, Part 2," pages 24-31) in the same issue helps the reader understand the difficulties that faced the Allied soldiers at Buna. The impact of

such conditions on inexperienced, poorly trained, and sometimes poorly led Australian and American soldiers appears to have been lost on their respective higher commanders—but not on Lieutenant General Robert L. Eichelberger, who observed them firsthand.

Two Australian brigades were rushed to Milne Bay in New Guinea to protect the airstrip and base there. From the 25th to the end of August 1942, these units with American soldiers and airmen defeated and repulsed a strong Japanese landing force. Field Marshal Sir William Slim used this first Allied victory to inspire his defeated British 14th Army in Burma. Technically speaking then, Buna was the first successful Allied ground force offensive against the Japanese.

In early 1942 Australia's naval and air forces were almost nonexistent. The bulk of these forces and the better trained and equipped army units were fighting in Europe or North Africa. The Australian Chiefs of Staff, with government advice, had agreed that the area south of Brisbane was most vital to the continuance of the war effort and to provide bases for the United States. This 1,000-mile slice of territory contained barely five divisions.

At this stage, there had been no offer of the U.S. 41st Division and other units to help defend Australia. However, there was no plan to sit behind the "Brisbane Line" as MacArthur interpreted it. Rather, the intention was to consolidate the available armed forces necessary to defeat any invasion rather than sacrifice units in isolation, as had occurred in Malaya and the East Indies. In addition, the Australian Chief of the General Staff, Lieutenant General Sturdee, insisted on holding Port Moresby and New Cale-

donia, against political advice to evacuate these strategically important points.

Captain Caraccilo's conclusion hits the mark: General Eichelberger's outstanding leadership, drive, and organizational abilities were key to the success finally achieved at Buna. No less important was his willingness to maintain effective liaison with his Australian counterpart. Eichelberger's approach, "How can we win this one?"—sadly lacking before his arrival—ensured cooperation, mutual respect, and coordinated effort to defeat the Japanese.

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Australian Exchange Officer
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MILITARY HISTORY WRITING CONTEST

The U.S. Army Center of Military History is again sponsoring a military history writing contest. The contest is open to students who attended officer advanced courses or the Sergeants Major Academy during any part of calendar years 1992 and 1993.

Entries must be previously unpublished manuscripts of no more than 3,500 words (approximately 14 typed, doubled spaced pages); longer manuscripts will not be accepted. Documentation is required, but footnotes and endnotes are not included in this length. Each essay should develop a limited historical theme related to the Army.

Some suggested topic areas are:

- Desert operations.

- World War II battles and campaigns (50th anniversary period).

- The Korean War (40th anniversary period).

- The Black experience during the Civil War, Spanish-American War, World Wars I or II, Korea, or Vietnam.

- Leadership.

- Training.

- Light infantry forces.

- Unit cohesion and stress in combat.

- Fighting outnumbered and winning; for example, in the Ardennes or in Vietnam.

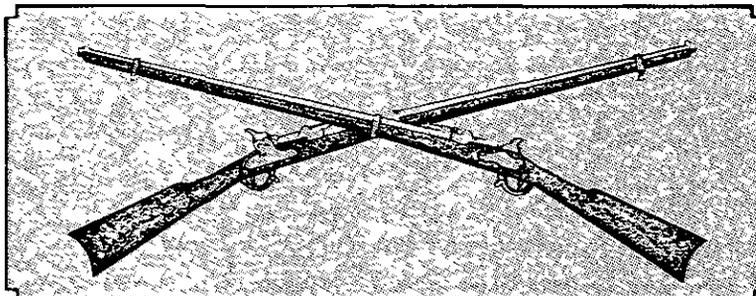
- Logistics.

To enter, an author must send two copies of his manuscript—along with any accompanying graphics, illustrations, or photographs—to U.S. Army Center of Military History, ATTN: Writing Contest (Mr. Arthur), 1099 14th Street, NW, Washington, DC 20005-3402. Each entry must include the student's social security number, the number and title of the course he attended, and a current address. Entries must be postmarked by midnight 31 December 1993.

A panel of military historians will judge the entries on the basis of historical accuracy, originality, style and rhetoric, and relevance to today's Army leaders. Contest winners should be announced by the end of April 1994. The prizes will range from \$500 to \$100, or as the judges direct.

For additional information, anyone who is interested may write to me at the above address or call me at DSN 285-5368 or commercial (202) 504-5368.

BILLY A. ARTHUR
Chief, Leader Development
Activity



INFANTRY NEWS



HERE'S AN UPDATE on the references listed in the article "Physical Fitness in the Reserve Components," which appeared in the May-June 1993 issue of *INFANTRY* (pages 42-44).

The information formerly contained in DA Pamphlet 350-15, *Commanders Handbook on Fitness*, now appears in Chapter 9 of DA Pamphlet 350-41, *Training in Units*; and DA Pamphlet 350-18, *Individual Handbook on Fitness*, has been replaced by Field Manual 21-20, *Physical Fitness Training*.

THE BUNKER DEFEAT MUNITION (BDM) candidate systems—mentioned in *INFANTRY*'s July-August 1993 issue (page 3)—are scheduled to compete in a side-by-side "shoot-off" early next year.

The shoot-off will determine which system best meets the Army's requirements in terms of cost and overall performance. The BDM candidates will also be evaluated on their effects against such secondary targets as light armor and brick or concrete walls, and also their ability to defeat bunkers out to 250 meters.

TRAINING AMMUNITION for the Bradley's 25mm gun will be produced under a recent contract option from the U.S. Army Armament Munitions and Chemical Command.

The contract is for the procurement of 677,000 25mm M910 target practice discarding sabot tracer (TPDS-T) rounds. The same company also produces armor piercing and high explosive rounds for the 25mm gun, along with the family of 25mm ammunition for the U.S. Navy, Air Force, and Marines.



Soldier prepares to fire the Javelin fire-and-forget antitank weapon.



Javelin during night firing test. The weapon has an integrated day/night thermal capability.

THE JAVELIN MISSILE system—the Army's newest man-portable, shoulder-fired, antitank weapon—is being test fired at Redstone Arsenal. At 47.6 inches long, 5.6 inches in diameter, and weighing about 49 pounds, the Javelin is intended to replace the more cumbersome Dragon.

Since 1 July 1993, soldiers and marines who are Javelin instructors from Fort Benning, Georgia, participated in this first round of manned firings.

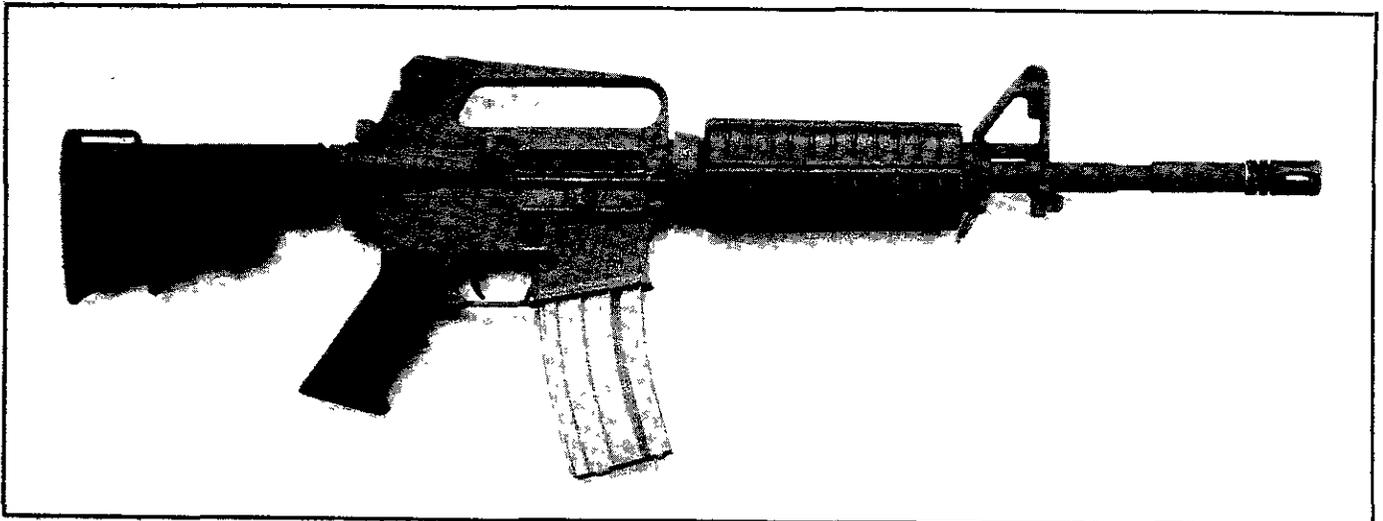
Javelin is a high-tech weapon that is capable of destroying all types of armored vehicles at twice the Dragon's

range. Javelin is a fire-and-forget weapon that locks onto its target before launch and, unlike the wire-guided Dragon, does not need to be guided in flight by the gunner.

The Javelin can be fired in a top-attack mode, where vehicles are most vulnerable, but it can also be fired in a direct-attack mode if the target is under cover.

The fielding of the Javelin is expected to begin in 1996.

(See also "Javelin: A Leap Forward," by Captain John T. Davis, in *INFANTRY*, January-February 1992, pages 14-15.)



THE ARMY'S NEW M4 CARBINE will be produced under a recently awarded contract. The contract, which is for the first year of a budgeted three-year procurement, calls for the production of about 18,600 carbines, along with spare parts and engineering services.

The M4—essentially a shorter, lighter version of the M16 rifle—is designated for use by Armor personnel as a replacement for the M3 .45 caliber “grease gun,” selected M16A1 and A2 rifles for vehicle drivers, and some 9mm pistols. The M4 improves compatibility with the

M16A2 rifle in training, maintenance, and supply capabilities.

A similar version of the M4 carbine has been manufactured over the past five years and delivered to Special Forces units. Shipments under the new contract are to begin in April 1994.

THE 26th (YANKEE) INFANTRY Division, the first and oldest combat National Guard division in the United States, was deactivated on 28 August 1993. The division, headquartered at Camp Edwards, Massachusetts, was organized on 22 August 1917.

Some of the division's soldiers will be part of a new troop structure to be announced.

THE 29th INFANTRY REGIMENT will hold a reunion at Fort Benning, Georgia, 7-10 October 1993 and celebrate its 92d year of active service. Anyone who has served in the regiment is invited to attend.

The headquarters for the reunion will be the Holiday Inn (Airport), Columbus, Georgia. The reservation desk telephone number is (706) 324-0231.

For additional information, anyone who is interested may call CSM (Ret) Frank C. Plass at (706) 561-0744, or CPT John J. McMullen, Regimental Adjutant, at (706) 544-6008.



A LOW-COST UNCOOLED SENSOR prototype (LOCUSP) was recently delivered to the U.S. Army's Night Vision Electronic Sensors Directorate at Fort Belvoir, Virginia. It has the potential for providing night vision capability for a broad range of applications previously limited by the cost of cryogenically cooled infrared sensors.

LOCUSP's uncooled, infrared micro-

bolometer focal plane array (FPA) technology uses a silicon process similar to that used in making integrated circuits. This FPA technology can be applied to a variety of products, including infantry weapons and surveillance systems, air-delivered weapons, artillery systems, and ocean and shipboard surveillance systems.

PROFESSIONAL FORUM



Intelligence Considerations

For the JRTC Search and Attack

CAPTAIN RICHARD A. BERGLUND

The key to a battalion's success at the Joint Readiness Training Center (JRTC), as well as on potential low-intensity battlefields around the world, is knowing the enemy—how he fights, his strengths and weaknesses, and how to minimize the former and capitalize on the latter. But how does a battalion S-2 find an elusive, dedicated, and skillful indigenous force operating in familiar terrain on a low-intensity battlefield, or during the search and attack mission at the JRTC?

To the S-2, finding this kind of enemy may seem like an impossible task, because few publications offer help with this specific type of battalion S-2 function. In the absence of specific guidance, he simply applies current doctrine to the search and attack mission. Since the enemy force is small and elusive, attention to detail is important.

In preparing for the search and attack mission, the commander must first develop the intelligence picture. Then the commander, the S-3, and the S-2 work together closely to develop a cohesive plan for destroying the enemy force. To do this they must maintain open and continuous communication with each other throughout the operation. Since finding the enemy during search and attack is often difficult, the commander and his

staff must also be prepared to execute their plan against an alternate target or targets of opportunity that may appear.

On the basis of the initial intelligence information, the S-2 identifies the enemy's strengths and vulnerabilities. In turn, the commander selects the specific enemy vulnerability he wants to exploit and determines the decisive point on the basis of the S-2's recommendations. Then he begins to develop the battle picture—his intelligence preparation of the battlefield (IPB).

To defeat the OPFOR in the search and attack, the battalion IPB must target an OPFOR vulnerability, not necessarily the force itself. By attacking a vulnerability, the battalion forces the enemy out of his normal operating mode, gains the initiative, and allows the maneuver commander to defeat the enemy on favorable terms.

For example, if the S-2 determines that the enemy force's logistical system is not well established, secure, and strong, the battalion targets that system. In a search and attack against a dismounted force working in small groups, the target could be an enemy supply point. The size of the targeted supply point determines the size of the enemy force likely to be defending or operating it, and also determines

the size force that will be used to attack it. The next step is to determine the time it will take the enemy to move the target once it has been compromised. For purposes of this discussion, I will use the example of a battalion supply point (BSP) defended by a platoon-size enemy element and assume that the enemy can move the entire BSP site within six hours.

After the commander identifies what he knows about the enemy, he then determines the additional information he needs. The answers to these specific questions become his priority intelligence requirements (PIRs)—pieces to the puzzle that, once supplied, will complete the picture and enable him to attack. Since the established PIRs will determine both the planning process and the collection effort, they must be put in order of priority and then posted so that all elements of the force can be geared for meeting them. Once the initial PIRs have been identified, the S-2 must continually update them. The new PIRs often generate still more questions that must be considered in this ongoing process. The S-2 section is often advised to do the IPB in isolation without input from the other staff sections, but this isolated planning usually ends with the S-3 developing courses of action without considering the

enemy. The result is usually a poor plan for the search and a failure of the attack.

The S-2 determines the named areas of interest (NAIs) on the battlefield. Through the IPB process, he recommends the areas where he believes the BSP is located. He bases his decision on current opposing force doctrine and available intelligence—including mission, enemy, terrain, troops, and time (METT-T) with the emphasis on terrain, weather, and local civilian support. This allows the commander and the S-3 to develop a plan for a search and attack against a suspected target location.

During the staff planning process, each staff member, including the special staff, must help the S-2 develop the enemy situation template. The S-2 should bring in the specialty platoon leaders during this planning phase and tap their expertise. The leaders of the mortar, air defense, TOW, and engineer platoons can all provide valuable information in their respective fields. This is especially important in the search and attack because of the lack of a doctrinal, predictable enemy. Although this makes it difficult for the S-2 to template, he can template enemy weapons and then adjust them to the terrain.

During the IPB process, the S-2, along with the S-3, develops the reconnaissance and surveillance (R&S) plan—the commander's tasking document by which he plans to find the enemy. The staff must complete the R&S plan early enough to ensure that those tasked with collection of data have enough time to complete their reconnaissance once they have been given the mission. The S-3 must brief the R&S plan as part of the operations order. Since reconnaissance is the unit's primary mission during the initial phase of search and attack, this relationship between the S-2 and the S-3 is critical.

In developing the R&S plan, the S-2 must consider all available assets within the task force. One of the most frequently under-used reconnaissance assets organic to an infantry battalion is the infantry company. The S-2 should exploit his advantages so he can see the enemy properly and identify potential high-value target locations. The S-2 must task his primary intelligence collectors against his

priority NAI. In our example, the S-2 would task his battalion scouts against the suspected BSP location. A good way of finding the target is to create a "find force" with that sole mission. This force could consist of several collection assets, including an infantry company that would provide its command and control, security, and—if needed—firepower.

Important parts of the R&S plan are collection times and reporting requirements. Sending a collector to observe an NAI after it is too late for his information to influence the maneuver plan, or with no clear reporting requirements, is a waste of time and effort. Several assets can be attached to the battalion task force, and the S-2 must consider all of them



when developing his R&S plan. A number of potential assets are either organic, task organized, or can be made available to a battalion:

- Infantry companies.
- Battalion scouts.
- TOW platoon.
- Company fire support teams.
- Air defense artillery (ADA) platoon.
- Engineer platoon.
- Ground surveillance radar/REMBASS.
- CI/IPW teams.
- Logistics convoys.
- Medics (front-line ambulances).
- U.S. Marine Corps FCTs.
- Q-36 radar.
- Armor.
- Army aviation.
- U.S. Air Force.
- Military police.

The S-2 cannot simply give his PIRs to a collector and expect him to interpret them. Before any element engages in

reconnaissance activities, the S-2 must provide a templated target sketch that is based on available enemy doctrine and current information. Without this sketch, the collectors will not be able to pinpoint the target effectively. The S-2 uses this doctrinal sketch along with information provided by the collectors to update the commanders who must attack the objective.

In addition to the doctrinal sketch, the S-2 must translate PIRs into specific information requirements (SIRs) for the intelligence collectors. The S-2 develops indicators that, when identified, will answer the SIRs. The S-2 tailors these indicators on each NAI and gives them to the collectors. It is his responsibility to provide these indicators for each subject or activity addressed in his PIRs; the collectors can then report incidents instead of trying to answer questions. Once the S-2 finalizes the R&S plan, the commander approves it, and the S-3 tasks the appropriate support agencies. The battalion is now ready to accomplish its mission of finding and finishing the enemy.

Once the R&S plan is complete, the S-2 determines the gaps in his collection effort, and the gaps become the request for intelligence information (RII) that he sends to higher headquarters for answers. Sometimes a unit's higher headquarters is the only source of the answer to a particular question. This combination of tasking organic and attached assets with the R&S plan and sending RIIs to higher headquarters becomes the battalion's collection plan. As the unit's collection manager, the S-2 controls the collection assets and also requests further information.

As the battalion implements its R&S plan, the S-2 must deliberately track the battle and maintain an accurate incident map. The S-2 tracks all incidents as they occur, no matter how insignificant they may seem at the time. He plots these incidents in an orderly fashion to ease future pattern analysis to develop the enemy's operating scheme of maneuver. This gives the commander the freedom to adjust his maneuver plan.

A key part of being able to see the battlefield is the resolution at which the S-2 tracks the battle. For a light infantry bat-

talion, the standard 1:50,000-scale map does not always provide the detail the S-2 needs, especially during the orders planning process or aviation unit briefings. The S-2 uses all available resources to track the battle more accurately and provide the proper terrain information to all personnel. These resources include 1:25,000-scale maps, sectional map blowups, land satellite photography, and aerial imagery.

The S-2, or other responsible individual, must debrief all possible intelligence sources on the battlefield. He must include the assets that are not normally considered prime collectors. Medics, convoy drivers, aviators, ADA teams, infantry patrols, and scouts can all provide pieces of the picture. These groups or individuals see many things on the battlefield that they may not recognize as valuable until they are asked specific questions.

The most important aspect of developing battlefield intelligence may be reporting and dissemination. Timely, accurate, and complete reports on the enemy (SALUTE format—size, activity, location, unit, time, equipment) are essential to the commander. Without them, he cannot properly influence the battle. Often the initial contact reports are incomplete; tactical operations centers, leaders, and ra-

dio telephone operators must be ruthless in following up on them as the situation stabilizes. Just as important as accurate reporting is timely dissemination from the TOC to the intelligence collectors. Once the enemy target is pinpointed, reporting and dissemination allow the commander to implement his plan to attack and destroy it.

In summary, if the battalion is to succeed in destroying an enemy force during the search and attack, it must first succeed in finding the enemy. This means using all its available assets, including maneuver forces in the reconnaissance mode. The entire staff must be involved in the IPB process. The unit must first identify a target point where it can exploit an enemy vulnerability and then develop and implement an R&S plan that pinpoints this target. Finally, the unit must accurately report all information to the TOC for analysis and dissemination. This processed information is fed back to the collectors, and the R&S plan is updated. During the search and attack, intelligence is a slow methodical process that, if properly approached, gives the commander the best opportunity to destroy the critical enemy nodes and allows him to dictate the course of the battle.

The S-2 develops a plan to find the ene-

my and ensures that the units report all information to the TOC, where the true analysis takes place. Dissemination of information down to the users is equally crucial; it becomes the final payoff for the S-2. Attention to detail is the S-2's key ally while conducting the search and attack.

Through a successful training plan, the entire battalion becomes proficient in the orders development process, R&S planning, battle tracking, reporting, and dissemination. As part of this training plan the entire staff must exercise these skills during all training events until they become second nature. This ensures that the battalion will properly conduct intelligence operations in its search and attack missions. Although these intelligence operations are difficult, the S-2 can ensure a successful mission by applying the current published doctrine to the METT-T factors and continually developing the battlefield as more information becomes available.

Captain Richard A. Berglund is Battalion S-2 observer-controller at the Joint Readiness Training Center, where he has also been a military intelligence company observer-controller. He is a 1982 ROTC graduate of the University of Georgia and holds a master's degree from the University of Arkansas.

To the New Mortar Platoon Leader

LIEUTENANT DOUGLAS A. OLLIVANT

The transition from light infantry rifle platoon leader to mortar platoon leader is one of the most difficult job progressions for a lieutenant. He must go from company operations to battalion, from direct fire to indirect, from dismounted movement to mounted, and from combat operations to combat support. Unfortunately, most lieutenants moving into

this job are poorly prepared, even if they are school trained, and very few commanders have the mortar experience to serve as mentor for them.

If you are one of these lieutenants, I would like to share some quick lessons from my experience that should at least point you in the right direction.

During my tenure as a mortar platoon

leader, I found the following five areas critical: tactical proficiency, technical proficiency, fire direction center (FDC) operations, maintenance, and staff integration.

Tactical Proficiency. Mortar platoon tactics differ a great deal from those used in a rifle platoon. Essentially, a mortar platoon has only three maneu-

ver missions that can be considered mission essential tasks: move mounted, reconnoiter a firing position, and occupy a firing position.

Moving mounted may be a new experience for you. Getting lost for the first time in a HMMWV (high-mobility multipurpose wheeled vehicle) is embarrassing for a light infantry lieutenant who thinks mounted navigation is the same as dismounted navigation. Because of the Army's policy of rotating company-grade officers through both light and heavy assignments, your company commander should have extensive experience in mounted operations. Ask him about convoy procedures, movement orders, actions at halts, and mounted battle drills. These skills are extremely important, because a mortar platoon is not only difficult to control while moving but also especially vulnerable to attack.

A new mortar platoon leader is often confused when occupying a firing position the first few times. I found that the best way to think of it was as a patrol base that happened to have overhead clearance. With this analogy in mind, you will find the reconnaissance of a tentative firing position easy: Stop the vehicles 300 meters short; leave a security element with a contingency plan; take a second security element forward; have them clear and confirm the firing position; leave the second security element at the position with a contingency plan; return to pick up your vehicles; move in; and prepare the firing position.

The makeup of your reconnaissance party may vary. You can take an ammunition bearer from each gun, an entire gun squad with its tube, or even an entire section. I used each of these techniques at different times, depending upon the analysis of METT-T (mission, enemy, terrain, troops, and time). Just be sure to weigh the advantages and disadvantages of each option, given the enemy situation and the range to the FLOT (forward line of own troops). Always keep with you an FDC representative with a mortar computer or plotting board.

Once in a firing position, plan for the next displacement, reconnoitering tentative positions if possible. Then be

sure to disseminate your emergency displacement plan. Finally, don't forget to inspect your systems, checking the gun line for sights, poles, ammunition, mask or overhead clearance, and priority target data. Then check the FDC for computer records, data sheets, ammunition count, and, above all, the situation map. If your FDC isn't tracking the battle as well as or better than the tactical operations center (TOC), something is wrong.

Technical Proficiency. As the mortar platoon leader, you must quickly gain proficiency as a mortarman, both in FDC procedures and in basic gunner skills. Fortunately, the Infantry Mortar Leader's Course does a good job in this area. If you have not completed the course, you



need to attend as soon as possible. You won't learn a great deal about mortar tactics in the course, but you will become fully qualified in FDC operations, perhaps better than many of the platoon's noncommissioned officers.

Fire direction is the heart of what makes a mortarman and the most critical skill for your unit. You may be able to move all over the battlefield and communicate with everyone else, but if you can't plot where the round will land, you are useless to your commander. What this means to you as the platoon leader is that you must devote time to training on FDC skills, both for the FDC person-

nel and for the platoon as a whole. This comes hard for an infantry leader, because FDC work is done in a classroom with paper, pencils, and computers. Let your FDC chief train his section. You'll be glad you did when your FDC is able to fly through nonstandard missions.

Crew drill is your unit's second most critical skill. The infantrymen in contact expect a mortar round to land on target very soon after they call for it, and a mortar crew must practice often to maintain this standard. (I wish I had had my gunners perform this drill more often.) After about a year, your best gunners will be able to beat "expert" time consistently, given gunner exam conditions—that is, flat ground. But see that your gunners also drill on less-than-perfect terrain. Gunners who score "expert" on a flat grassy field won't necessarily make the time on muddy, rocky ground in the training area. Don't forget your assistant gunners. If the crew can work well together and develop a rhythm, they will consistently get the rounds out in time.

Fire Direction Center. Your FDC is the nerve center of the platoon. It directs and controls the conduct of fires, tracks the battle, maintains communication with higher headquarters and the guns, monitors position security, sends reports, and is prepared to assume control of the battle as the alternate TOC (or second alternate) at any time.

As an infantry lieutenant, you may never have seen anything like an FDC before and may be mystified as to how to use these soldiers, either in the field or in garrison. The FDC contains the platoon's second most senior NCO and two junior NCOs. Like me, you may have difficulty at first deciding how best to use these leaders.

Your FDC chief can make life easy for you if you let him. He can serve as an assistant platoon sergeant (similar to the squad leader in the Ranger Course). Be sure to keep him in the planning loop. With his two NCOs and, hopefully, some of the better soldiers in the platoon, he is ideally suited to handle your special projects. In short, don't ignore this valuable NCO just because you didn't have one as a line platoon leader.

In the field, your platoon sergeant

should have his hands full with resupply operations and helping you inspect the gun line. As a result, the FDC chief may have to help perform other duties normally assigned to the platoon sergeant. This is a good role for him and for you—it takes work off your shoulders and also allows him to exercise his leadership talents. But don't allow this role to compromise the operation of the FDC or to cause friction between the FDC chief and the platoon sergeant.

In addition to the obvious tasks of fire direction and maintaining the ammunition count, the FDC team must be able to clear their own fires when the fire support element is unable to perform its mission. The team must therefore know where every friendly unit is on the battlefield. Maintaining the status of the line platoons is fairly easy—just call the forward observer (FO) working with each platoon on the fire net and get a location, and have him update you when the position changes. Scout squads are harder. You get their locations from the S-2 or drop to their radio net. I worked out a plan with the scout platoon leader to have him enter my net every so often to update me on his squads' locations.

Trying to get locations for the various support slice elements is a tremendous task. Even the TOC has trouble tracking the air defense artillery teams, the military intelligence assets, the long-range surveillance detachment teams, the Special Forces operational "A" detachments, and the Marine supporting arms liaison teams traversing the battlefield. Your FDC team must aggressively track down every element, and you should train them not to take "No" or "I don't know" for an answer. Although this is a constant and frustrating battle, winning it will pay great rewards in preventing fratricide and in rapid responses to calls for fire.

Maintenance. Maintenance will consume a great deal of your platoon's time. Gone are the days when you could spend maintenance day cleaning your rifle, protective mask, and night observation devices, and call it quits. You are now responsible for at least six HMMWVs, four M252 mortar systems, and more communications equipment than you will

know what to do with at first.

Motor maintenance is thoroughly covered in other publications and in most unit SOPs. Be sure to establish a good relationship with the headquarters company (HHC) executive officer/battalion motor officer and his maintenance team. You are responsible for getting your vehicle running. Motor pool personnel are there to help you, but you must become expert at checking equipment and reading maintenance indicators.

The best maintenance indicator for your mortar system is the DA Form 2408-4, Weapon Record Data, and it should accompany the mortar system on all live fires and deployments. The first entry to check is the last borescope/pullover date. A borescope/pullover is required at least every six months. My platoon SOP directed us to borescope before every live fire, just to make sure we were current. Second, ensure that all rounds fired from the tube are being recorded accurately, in the appropriate block, and in a timely manner. Finally, ensure that the form is being closed out and forwarded to Watervliet Arsenal every six months for filing (every 12 months for reserve component units). If this form is being well maintained, you can probably be assured that your platoon is keeping good maintenance records.

Communications maintenance is generally spotty among mortar platoons. I always had the radios in my command HMMWV and the FDC truck either working or turned in for maintenance. But I don't think I ever convinced my squad leaders of the importance of radio maintenance. You have to take a personal interest in all your communications assets. Make sure all radios will function in the red and green (nonsecure and secure) modes, mounted and dismounted. Set up and inventory your antennas. The mortar platoon will be operating over extended distances and on rough terrain much of the time, and your antennas will give you the range to carry out your mission.

As the mortar platoon leader, you have a long hand receipt. You need to become proficient in all of this equipment as soon as possible and learn the maintenance indicators. You should be able to set up and

use every piece of equipment that you own.

Staff Integration. When you were a rifle platoon leader, life in the field was pretty simple. You got your orders from your company commander, who was your rating officer, and executed them under his guidance. But as the mortar platoon leader, you may go through entire combat training center rotations without even seeing your rating officer, the HHC commander. You must establish quickly who your boss is in the field, who must have input from you, and who will help take care of your unit.

The staff officer most important to you is the battalion fire support officer (FSO). Coordination with him is critical for many reasons:

First, all the forward observers and company FSOs work for him. This means he controls every subscriber to your radio net except you. I took advantage of this arrangement by having the FSO set up fire support team meetings in which I briefed the way the mortars intended to conduct their fires and heard the unit forward observers' questions and complaints about mortar fires. This face-to-face coordination with the men on the ground went a long way toward facilitating calls for fire during our rotation at the Joint Readiness Training Center (JRTC).

Second, the battalion FSO is always either at the TOC or out with the tactical command post, standing next to the battalion commander and the S-3. Since you always have a link to the FSO on the fire support net, you should be able to get situation reports and other messages into command channels through him when the command net is too busy (which it generally is). If you and the FSO have a good working relationship, this link can be a very useful one. During my JRTC rotation, I was unable to communicate for long on either the command net or the administrative/logistical net. I passed all my radio traffic, situation reports, resupply requests, and even fragmentary orders and situation updates through the FSO on the fire net.

Third, the FSO serves as an information link through which you can introduce ideas into the planning process. The FSO

is the commander's primary advisor on indirect fire, but he generally does not know as much about mortar fires and mortar positioning as you do. Push this information through him so it ends up in the order; otherwise, the assistant S-3 actually writing the order may put you where you can't be effective.

My links with the S-3 were considerably weaker than those with the FSO, but he is still an important staff officer. He is ultimately responsible for all training and operations within the battalion. Again, his knowledge of mortars is likely to be either dated or nonexistent, and it is in your best interest to educate him. You must resolve two significant issues with him—who controls your emplacement and whether you can displace under your own authority (or must get battalion level approval). There are no doctrinal answers to these questions; they tend to depend upon the personalities in-

involved. Be sure that you and the S-3 reach an understanding regarding these issues.

In a light infantry battalion, logistical assets are limited and not suited to carrying such heavy items as mortar ammunition. Detailed coordination with the S-4 and support platoon leader regarding ammunition resupply will be a great help to you in the field. Without it, you'll find yourself sending your platoon sergeant off alone in a HMMWV in quest of mortar rounds.

Your level of contact with the battalion commander will vary with his command and his interest in mortar fires. I was fortunate enough to have a commander who had been a mortar platoon leader. He therefore saw me as *his* mortar platoon leader and kept his door open to me regarding mortar issues. Not all my counterparts in other battalions enjoyed this luxury. Again, education is the key.

If your battalion commander does not fully understand your capabilities, demonstrate them to him. If you take some time in garrison to sell yourself to the commander, you may find your mortars used more in the field.

There is no way to avoid the culture shock involved in taking over a mortar platoon. But a quick education will go a long way in helping you employ your valuable asset effectively. Mortars continue to exist because, if properly used, they can provide accurate and responsive indirect fires to the battalion. The charge to you, the lieutenant on the ground, is to make that happen.

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The Leader's Reconnaissance

An Argument Against It

CAPTAIN KEVIN J. DOUGHERTY

"The leader's reconnaissance," according to Field Manual (FM) 7-10, *The Infantry Rifle Company*, "is crucial to every operation." At least one previous article in *INFANTRY* also touted personal reconnaissance as "the most important combat multiplier a commander or leader has at his disposal." ("Personal Reconnaissance," by Captain Joseph Votel, *INFANTRY*, March-April 1988, p. 33.)

I disagree with these assessments. I believe that the ad hoc nature of the leader's reconnaissance violates several principles of war and that the same intent could be achieved more effectively

by a habitually organized small unit.

FM 7-10 cautions that "only essential personnel should take part" in a leader's reconnaissance. But who, exactly, are these essential personnel? Let's say a company is conducting a raid, a mission for which FM 7-10 specifically requires a leader's reconnaissance, and for which ARTEP 7-10-MTP lists the leader's reconnaissance as a "critical task."

Considering the tasks assigned in the FM and the MTP, and on the basis of my own experience, a leader's reconnaissance for a raid might include the company commander, his battalion radio tele-

phone operator (RTO), the three platoon leaders, a two-man surveillance team, a two-man security team, and a compassman. This group already consists of 11 men, and an entire light infantry scout platoon has only 18. Furthermore, the purpose of the reconnaissance invites even greater expansion. Other possible candidates for the reconnaissance would be a company RTO, a leader for each of the probable left and right security sections, and the engineer squad leader.

When I was a scout observer-controller at the Joint Readiness Training Center, I had a hard time convincing five-man

scout squads that they could move as a group in the vicinity of the objective, and these units were specifically trained for the job. What makes us think 11—or more—men thrown together are going to be able to do it?

In my opinion, the leader's reconnaissance violates four principles of war—security, surprise, economy of force, and unity of command. This is not to say a leader's reconnaissance is never appropriate; it can be very helpful in some cases. But it does have certain shortcomings that are worth considering.

Security. In discussing security, FM 100-5, *Operations*, cautions the commander, "Never permit the enemy to acquire an unexpected advantage." Can there be a greater advantage than the one an enemy gains by destroying or degrading a company's chain of command while it is isolated from the main body? That is exactly the risk incurred on a traditional leader's reconnaissance. To be sure, the group includes two security men, probably armed with M16 rifles, but is that enough protection for the company's leaders? The other members of the patrol are accustomed to maneuvering *units*, not maneuvering themselves. Besides, to put it kindly, their individual movement techniques (IMTs) are probably a little rusty. One or two in the group may have only 9mm pistols, while others are burdened with radios.

An exceptional leader's reconnaissance party may have standing operating procedures (SOPs) for breaking contact, but I'd hazard a guess that they haven't rehearsed it lately. To make matters worse, most of the soldiers in the reconnaissance party are involved in reconnaissance or some other leader task. Some may be looking at obstacles, enemy positions, or maps, but few are scanning assigned sectors for the sole purpose of providing security. The two-man security element may be able to provide limited early warning, probably well within small-arms range, but they certainly don't have the firepower they need to delay an enemy who is bent on pursuit.

Surprise. FM 100-5 says that, to gain surprise, a force should "strike the enemy at a time or place, or in a manner, for which he is unprepared." If the lead-

er's reconnaissance is compromised, all hope of surprise is lost. Reconnaissance, particularly of an enemy position, is never easy. And when we form a leader's reconnaissance party, we are essentially assigning that task to several individuals and asking them to function as a group without the benefit of training, rehearsing, bonding, or developing SOPs as a collective body. Moreover, we are asking them to do this in the face of the enemy and, more often than not, under rigid time constraints as well.

The chances of being compromised under these conditions are simply too great, and the problem with being compromised at this stage of the game is that there is no time to react. The company is in an objective release point (ORP), the "no later than" time is fast approaching, it's dark, and the plan has already been briefed and rehearsed. A major change at this point violates another principle of war—simplicity. For that matter, a major change is disruptive even if the leader's reconnaissance has not been compromised.

Economy of Force. In defining "economy of force," FM 100-5 says that the commander must accept "prudent risk in selected areas... to achieve superiority in the area where decision is sought." As leaders, we all want the nice, warm feeling that comes from first-

hand knowledge. We want to see things for ourselves, and this does improve our decision making ability. But the risks to security and surprise on this reconnaissance are very real. We must remember that the function of the reconnaissance is to support the main effort, which, in our example, is the raid itself. Getting a nice, warm feeling is not worth compromising that effort. By this time, we are well past the point at which a major revision can be made in our plan.

If we follow the logic that the reconnaissance is a supporting effort, it runs afoul of the FM 100-5 injunction to "allocate minimum essential combat power to secondary efforts." A leader's reconnaissance of the composition we are assuming (and as required by ARTEP 7-10-MTP) contains all of a light infantry company's green-tab officers. Leadership is "the most essential element of combat power," and risking such a sizable chunk of it on a secondary effort is not economy of force. A commander who is snooping around the objective cannot, at the same time, be synchronizing the overall battle, supervising final preparations, and making decisions based on information reports.

Unity of Command (Effort). For the purposes of this discussion, the principle of unity of command would be better stated as *unity of effort*. Obviously, a lead-



er's reconnaissance has unity of command if it is under the control of the common company commander. But this is probably one of the few things the members of the patrol have in common. They are not a team. They are an ad hoc organization, and we are all, by now, familiar enough with Task Force Smith in Korea to know the dangers of ad hoc organizations.

In discussing AirLand Battle imperatives, FM 100-5 says that to ensure unity of effort, "habitual relationships are used to maximize teamwork." The closest thing to teamwork on a leader's reconnaissance is the relationship between the commander and his RTO. These are the only two members who routinely work literally side by side, and probably the only two who have ever fired and maneuvered together. Why create an ad hoc organization to do something when we already have units that are trained and equipped specifically for that purpose?

This brings me to my recommendation. I suggest changing the term "leader's reconnaissance" in our FMs and MTPs to simply "reconnaissance." The important thing is getting the needed information, not who gets it. Squads, platoons, and even companies have reconnaissance tasks listed in their MTPs. They are organized, equipped, and trained for the job. They have developed SOPs and have rehearsed them.

AirLand Battle doctrine is based largely on small-unit initiative. If a company commander doesn't have a squad in his company that he can trust to recon an objective, he has a much larger problem. Additionally, giving the sub-unit the reconnaissance mission early in the troop-leading procedures allows time for reconnaissance that a leader's reconnaissance from the ORP does not. Even if the reconnaissance is compromised, the commander has time to adjust his plan to minimize the effects of loss of surprise.

As part of the training process, the commander must explain to his sub-units what he wants from the reconnaissance. What specific information does he need? What are the indicators? What gives him his nice, warm feelings? The commander does not just tell a squad leader to pick a "good" support position; he asks questions about the characteristics of a good support position, and uses briefbacks to make sure the squad leader's definitions coincide with his own. He explains certain considerations of mission, enemy, terrain, troops, and time (METT-T) that may affect the mission. For example, does he want to maximize weapon stand-off by having the support position relatively far away from the objective, or does he want it closer in to improve accuracy against selected targets? If he tells the squad leader what information he needs and why, chances are he'll get that information (task and purpose). If not,

the problem is in training, not in decentralization.

Decentralization is integral to our doctrine, and our doctrine has proved its worth. FM 100-5 says: *Decentralization demands subordinates who are willing and able to take risks [training] and superiors who nurture that willingness and ability in their subordinates [command climate]. If subordinates are to exercise initiative without endangering the overall success of the force, they must thoroughly understand the commander's intent and the situational assumptions [METT-T] on which it was based.*

There certainly is a place for the leader's reconnaissance, but it is not the only answer. In fact, it often presents problems that could be solved by allowing a properly trained sub-unit to do the reconnaissance. In other cases, it may be appropriate for the leader to accompany the sub-unit to get a first-hand feel for the situation. There are several options and, for this reason, the term *reconnaissance* should replace *leader's reconnaissance* in our FMs and MTPs.

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CAS In the Deep Fight?

CAPTAIN DOUGLAS P. SCHAARE
CAPTAIN WILLIAM S. McCALLISTER

The 2d Infantry Division's success during its Battle Command Training Program (BCTP), Warfighter '92, was largely a result of the effective coordination of the division's artillery and close air support (CAS) assets.

In this exercise, the division needed to win the deep battle to shape the close fight. Our preparations for the exercise therefore focused on establishing a technique for coordinating the employment of air and organic indirect fires in sup-

port of the deep battle. If artillery and air assets were to be coordinated effectively, we would have to have a flexible and responsive way to bring massive firepower to bear against fixed, newly acquired, and previously undetected tar-

our intelligence gathering assets and focus our firepower within a specific area.

The G-3 Air, ALO, and division targeting officer maintained the kill box overlay, which identified areas to be serviced by both indirect artillery and air support. The overlay kept the targeting officer abreast of the locations on which CAS sorties would be focused, and this simplified the development of SEAD fire missions. The ALO informed the targeting officer of the expected TOTs, and the targeting officer timed SEAD fires to hit before these CAS TOTs. General support artillery—after coordination with the division fire support element, the G-3 Air, and the ALO—then

executed the attacks against the enemy air defenses.

The coordinating agencies for massed fires remained the same, the only difference being that lateral separation instead of timed separation would be used to prevent conflicts between artillery and CAS sorties.

The ability to coordinate CAS and indirect fires on a specific kill box greatly improved the synchronization of fires; it also simplified the acquisition of targets, the massing of fires, and the protection of CAS assets. As a result, the division established these techniques as standing operating procedure.

The effective coordination of the 2d

Infantry Division's artillery and close air support greatly contributed to its warfighting capability and its success during Warfighter '92.

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The Battalion XO

Leader, Coordinator, Trainer, Logistician

COLONEL COLE C. KINGSEED

The executive officer in an infantry battalion has always played an important, but frequently misunderstood, role. Most infantrymen are familiar with the XO's traditional "beans and bullets" duties, but any commander who limits his XO's responsibilities to these functions fails to take advantage of the experience this field grade officer brings to the command.

Before I left my last command, a young major asked me what advice I would give to a newly assigned executive officer and what I would expect of him. Having commanded a light infantry battalion, and having served as executive officer at company, battalion, and brigade levels, I would like to outline my response to these questions. For the sake of clarity, I have organized my remarks into four general areas:

Battalion Second-in-Command

(2IC). As the senior major in the battalion, the executive officer has a role as the battalion's second-in-command (or 2IC as the British term it) and must be ready to assume that duty in the commander's absence. This is the XO's most important function and one for which he can readily train. Still, a few words of caution are in order.

Although the XO is the second most senior officer in the battalion, he is not the commander. He should therefore respect and support the company commanders' right to talk directly to the battalion commander. Granted, the relationship between the XO and the subordinate commanders varies from one command to another. The XO serves a better purpose, however, if he can ensure that the battalion commander's directives are implemented without antagonizing the com-

pany commanders or interfering with their ability to command their respective units.

The most effective executive officers I have encountered in more than 20 years of service have been those who developed a healthy professional relationship with the subordinate commanders. Company commanders often use the XO as a sounding board for their training concepts before they approach the battalion commander directly. Although many issues can be settled only through green-tab channels, just as often these same issues can be approached indirectly through the XO—especially if the XO and the battalion commander have established a good rapport.

Frequently, the XO will assume temporary command in the battalion commander's absence. In these instances, the

gets—in effect, to deny the enemy access into the close battle area. These targets consisted of enemy artillery concentrations, surface-to-surface missiles (SSMs), and brigade or battalion-sized mechanized infantry or armor formations.

One of the division's deep strike options was to nominate targets for air interdiction (AI) sorties. This method worked when servicing targets well beyond the fire support coordination line (FSCL), but two problems arose in trying to attack targets that were a more immediate threat to the division, yet still somewhat beyond the FSCL.

First, AI sorties required a lengthy nomination process. To get an AI sortie approved and listed on the integrated tasking order, we had to nominate targets almost two days before the requested time over target (TOT). For an AI sortie on ground alert, the process took at least four to six hours. Neither of these options was responsive enough to meet the rapidly changing battlefield requirements.

The second problem also arose from the nomination process. Since all AI sorties are controlled and approved at the air component command level, we had no guarantee that our nominated targets would be approved and subsequently attacked. We therefore determined that the only weapons that could meet our immediate requirements were the division's CAS sorties and indirect fire systems.

The 2d Division continued to nominate AI missions, some of which were approved and flown effectively. In addition, however, we directed CAS sorties to support the division's deep battle. This "deep CAS" provided a responsive and much needed force multiplier, but the use of CAS in a deep role raised an important question: How deep is deep?

Obviously, positive control is required for CAS missions close to friendly forces, but this control is not required during CAS missions out to and beyond the FSCL. The biggest concern for any use of CAS beyond the forward line of own troops (FLOT) is the coordination of the Army's indirect fire weapons with Air Force's CAS assets to safeguard the aircraft against long range, high angle artillery fires. With this in mind, the

division was able to formulate a concept for defining what *deep* really meant.

The division requested CAS to attack targets out to the effective range of the division's multiple launch rocket system (MLRS). By moving our MLRS forward, as the situation dictated, we could provide effective suppression of enemy air defenses (SEAD). Thus, the requirement was for CAS sorties to attack targets up to and beyond the FSCL.

To provide effective SEAD, we adopted an old technique, the kill box. We wanted to strike the enemy deep and protect our fighters while still remaining flexible enough to be able to mass both artillery and CAS fires to stop an enemy penetration or threat to our flanks. Aircraft could engage enemy targets within the box with a measure of protection against enemy air defenses and with the assurance they would not be endangered by friendly fire.

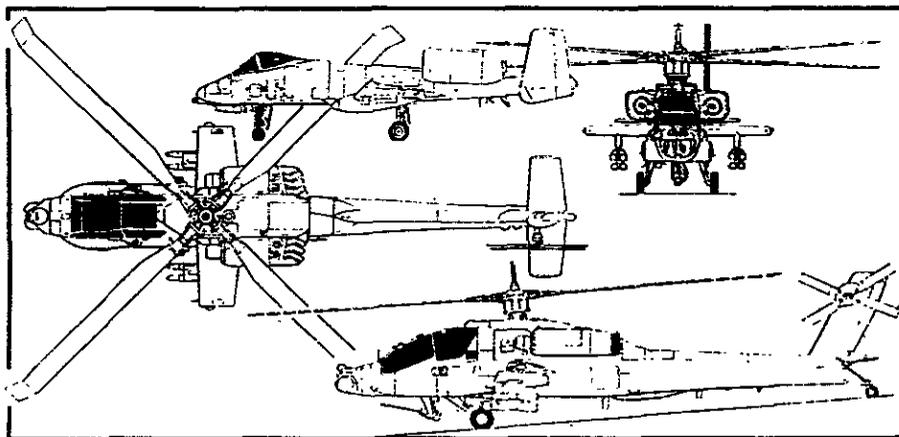
The kill box served two functions: When CAS was required to attack artillery concentrations, SSMs, or mechanized infantry and armor formations, the kill box could also function as a SEAD box. Avoiding conflict between artillery and CAS would consist of a timed separation over the target area to allow CAS sorties to strike after the artillery had attacked the known and templated enemy air defense weapons. When the division needed immediate fires, the SEAD box and timed separation of artillery and CAS over the target area would revert to a kill box and lateral separation.

The creation of kill boxes was prompted by the targeting process. The target-

ing method of decide-detect-deliver specified *what* targets should be acquired and attacked, *when* they should be acquired and attacked, and *which* specific requirements had to be met to defeat a target.

A short summary of the targeting process is in order: High-value targets (HVTs) consist of the assets that the enemy commander must have for the successful completion of his mission, and that are identified by the friendly G-2 and passed to the division deep targeting cell. This cell—chaired by the chief of staff and consisting of the deputy fire support coordinator, G-2, G-3, division aviation officer, electronic warfare officer, air liaison officer (ALO), and G-3 Air—determines which HVTs will be attacked to make the most of tactical air's contribution to the success of friendly operations. The HVTs that are considered important to the overall success of the friendly commander's scheme of maneuver are designated high-payoff targets (HPTs).

During the exercise, the positioning of the kill boxes was based on the latest intelligence preparation of the battlefield, the analysis of probable enemy avenues of approach, and the expected scheme of maneuver. We designated kill boxes measuring three kilometers square in those areas where concentrations of HPTs would be expected. The restrictive Korean terrain in which the division operated offered a number of areas bounded by steep mountains that created natural obstacles to channel or concentrate selected threat targets. In addition, the terrain allowed us to direct



XO should command the battalion as he believes the commander would—not as he would if he were, in fact, permanently in command. This is particularly important with respect to the soldiers—in matters relating to non-judicial punishment, recommendations for awards, and the like. Consistency with the commander's policies eliminates confusion from the perspectives of the soldiers and the junior officers and can earn the support of subordinate commanders.

A smart commander trains his principal subordinate to command the battalion both in the field and in garrison. While conducting tactical operations, he should let the XO command the unit for one mission during each battalion field exercise. This should include planning as well as executing the mission. Instead of looking over the XO's shoulder, the commander should offer his comments in an after-action-review format after each phase of the operation. An executive officer at any level will learn more from this experience than he will from a dozen exercises in which he confines himself to the support role or limits himself to staff coordination. More important, the experience of commanding a battalion in the field builds confidence and greatly improves the readiness of the command by ensuring that the XO is tactically and technically able to assume command.

Involving the executive officer in special operations also trains him for eventual battalion command. While doctrine assigns certain functions to the XO—such as serving as a crossing area commander in river-crossing operations—he might also command and control aircraft in air assault operations when the commander and the S-3 deploy with the initial companies. If the battalion commander is already in contact, the executive officer is far better able to make critical decisions concerning bump plans, changing landing zones, and possibly redirecting ground formations than an assistant staff officer would be.

Staff Coordination. Another important function of the XO is staff coordination, which has important implications at both battalion and brigade level. Within the battalion, the executive officer, as the most experienced staff

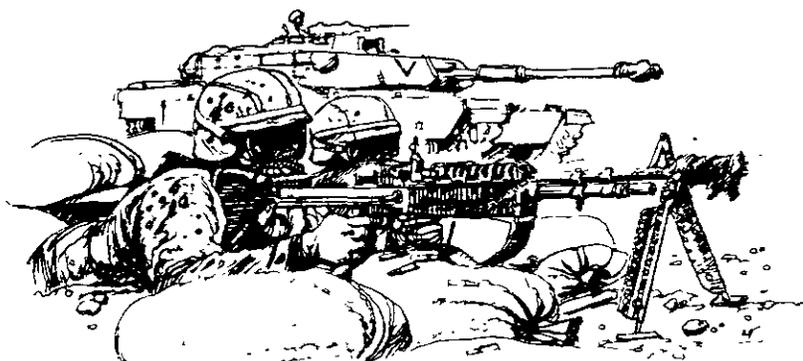
officer, should be fully knowledgeable of all staff functions and the decision making process. The XO should be expected to coordinate and train the staff in all staff procedures and functions, both in the field and in garrison. His ability to function as a chief of staff and serve as the single point of contact for staff guidance, coordination, and conflict resolution is vital to the efficient operation of the battalion. This is particularly true when the individual staff sections get too wrapped up in their respective areas of responsibility.

Because of their youth and inexperience, staff members—including the operations officer—often tend to concentrate their efforts in their own areas and ignore that function's relationship to the overall operation of the battalion as a combat-ready force. Only the executive officer can ensure that each staff member under-

stands the interplay involved in making sound and timely recommendations to the commander. I found the best way to accomplish this was to ensure that the staff took no shortcuts in the command and staff decision making process that culminates, for the staff officer, in a coordinated staff recommendation to the battalion commander.

Nowhere is staff coordination more important than in a tactical environment. The XO must ensure that he is intimately familiar with all tactical operations so that he can assume command of the battalion if necessary and so he can provide timely logistical support to subordinate units. An XO who spends all his time in the trains will never know how the companies are faring and will not be able to anticipate tactical and logistical problems. Neither will he be abreast of the tactical situation in the event he





has to assume command.

Outside the battalion, the XO is also the primary liaison officer to senior headquarters. As a battalion XO, I made a practice of visiting the brigade's primary staff officers for direct coordination at least twice a month. I also paid the brigade XO a monthly office call. These meetings were always at my insistence. Sometimes we had a specific agenda; other times, I wanted his perception of how the battalion was supporting the brigade commander. Not only did I get to know all the staff counterparts on a personal basis, but the battalion was never surprised by a brigade inspection during my tenure as XO. I attribute this solely to the fact that I knew about impending staff actions and which areas the brigade commander intended to emphasize. As a result, the battalion met most brigade requirements before brigade orders and directives were issued.

Within the battalion, the battalion XO can play an even more important role in providing staff support to the company commanders and XOs. Periodic visits to company commanders and XOs can greatly improve the rapport and unit esprit that contribute to battalion readiness. Ensuring that commanders receive timely copies of briefing charts for command and staff meetings, and the latest materiel readiness and training reports to facilitate the briefings to the battalion commander, will prevent an adversarial relationship between the company commanders and the battalion staff members. Such relationships are always detrimental to battalion readiness.

Another method of helping subordinate commanders and training the staff at the same time is to develop a comprehensive command inspection program. A work-

able inspection program, supervised by the XO and conducted by the staff, not only ensures that the companies are prepared for brigade and division level inspections, but also gives the XO an instrument for evaluating the staff members on procedures and on their expertise in their respective areas of responsibility.

Battalion Trainer. Aside from training the primary and special staff officers to function as an integral part of the battalion, the XO should also direct his efforts to another group of officers—the company XOs, for whom he has a special responsibility. Training junior executive officers is an important function because it contributes to the success of their companies and ultimately of the battalion, and it enables the junior leaders to become effective company commanders.

I strongly recommend that a battalion XO meet with his company counterparts at least once a week as a group and just as often individually. These meetings might be held in the battalion XO's office, the battalion motor pool, the unit dining facility, or a company supply room, arms room, or communications room on a rotating basis. These meetings—in addition to coordinating support for the respective company commanders—can also serve as officer professional development sessions. What better way to discuss materiel readiness issues, the battalion command inspection program, or the battalion commander's current focus?

In addition to training the company XOs, the battalion XO also has an obligation to support the headquarters company commander's training program. Too often, the staff misses physical training sessions and other mandatory training in preparing for quarterly training

briefs, command and staff meetings, and the like. By doing morning PT with the headquarters company or a rifle company or qualifying with his individual weapon on the range, the XO not only sets the example for the rest of the staff but also demonstrates the importance he attaches to maintaining combat readiness and physical fitness.

Materiel Readiness. The XO is traditionally the battalion's materiel readiness officer and the most visible point of contact for all logistical matters. As a result, he must be fully knowledgeable of all issues related to logistics. Frequently, he must run high-level interference when support agencies have brushed junior officers aside. He must not be reluctant to use his rank and position when necessary to demand quality support for the battalion. The extent to which he becomes personally involved may determine how timely the support is. It has been my experience, however, that support agencies are just as willing to support combat units as the combat units are to be supported. What is often lacking is coordination between the two commands.

By scheduling periodic meetings between unit XOs and the commissioned and noncommissioned officers of support units, the XO can ensure that support is available to the battalion and that the companies pick up work orders as soon as their equipment is repaired. He can also check to see that unserviceable equipment is submitted for repair as soon as it is broken and that radios, vehicles, and weapons are not down any longer than necessary.

The battalion executive officer is also the principal logistical representative to the brigade and division headquarters. Close coordination with senior staffs, such as scheduling courtesy maintenance assistance inspection team (MAIT) visits, will result in improved support for the battalion. As the battalion's senior logistician, he can address most logistical issues authoritatively, preventing, or at least mitigating, any potential embarrassment for the battalion commander and, by extension, for the S-4. Moreover, the XO can eliminate additional logistical problems by fostering a professional relationship with other battalion XOs and di-

vision special staff officers—such as the inspector general and the G-4 action officers.

Whether functioning as the second-in-command, the staff coordinator, the staff trainer, or the materiel readiness officer, the XO can make a valuable contribution to the overall combat readiness of a bat-

talion. Both aspiring executive officers and battalion commanders might think of the XO as not only the battalion commander's right-hand man but also as the company commanders' chief supporter. When the XO functions in this twin capacity, the result will be an effective and efficient team.

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FIFTY YEARS AGO IN WORLD WAR II SEPTEMBER-OCTOBER 1943

In the autumn of 1943 the German offensive in Russia had lost its momentum. Major battles, such as at Kursk in July, had inflicted heavy losses in men and material. In the Pacific, Japanese dreams of conquest were lay in the wreckage of their ships, planes, and installations. In Italy, Mussolini's vision of glory had been replaced by the reality of Allied forces landing at Sicily, Naples, Salerno, and Taranto. None of these gains would have been possible without the sacrifices made by the soldiers, sailors, marines, and airmen of the United States and her Allies.

These and other highlights of World War II are drawn from *Fifty Years Ago: A Portrait of the Stars and Stripes, Volume II* (available for \$50.00 from Squadron Publishing Inc., P.O. Box 222, Glenside, PA 19038).

1 September	Admiral Chester W. Nimitz announces orders to enter Wake, Eniwetok, and French Frigate after the ongoing conquest of the Marshall Islands is completed.
2 September	U.S. pilots shoot down 41 Japanese fighters in an aerial dogfight over the Japanese Ichiu, New Guinea.
8 September	The landing of U.S. commandos with Lieutenant Colonel Mark Clark's Fifth Army landing on the beachhead north of Naples in the face of stiff German and Italian resistance. Amphibious commandos take the beachhead north.
11 September	In the Solomons Islands, a new mission, the U.S. 6th Army, is used for the first time. Its increased range and effectiveness provide commanders with increased capabilities, strengthening further the campaign.
17 September	When his platoon is pinned down by intense German fire east of Naples, Corporal Charles E. Parris, Company E, 158th Infantry, uses a smokegrenade and returns fire until most of his platoon is killed. He then pulls the enemy back out of Italian mortar shells and German flame-throwers. Finally, using a rocket launcher, Corporal Parris succeeds in killing the enemy at last. His heroism and gallantry later recognized when he receives the Medal of Honor.
1 October	Naples falls to British and American forces.
8 October	Elements of the 50th Infantry, 4th Infantry Division, attack against the Volturno River and succeed in pursuit of withdrawing German forces and establish a bridgehead.
17 October	Major Gregory "Pappy" Boyington's Marine Fighter Squadron 224 shoots down 20 Japanese fighters at Kahi in the Solomons Islands, another victory in the campaign.
23 October	The U.S. 10th Infantry, 10th Infantry Division, captures San Angelo di Stabia in Italy after fierce heavy resistance in the preceding days.
28 October	U.S. Marines complete preparations for the invasion of Guadalcanal, New Guinea Islands.

entire campaign are shown in the accompanying table.) Since the Axis forces were fighting a delaying action from long range, however, there were no major battles along the way.

On the other hand, there were brief periods of success, excitement, exhilaration, surprise, and terror. In the latter category, our soldiers never forgot the accuracy of German 75mm and 88mm guns and the awesome sound of *Nebelwerfer* (rocket) barrages. The threat of German mines, both anti-personnel and antitank, was also a lingering concern for us.

Happily, Allied air forces dominated the skies over our area of operations. In sharp contrast to our Tunisian campaign experience, we were not bombed or strafed by German Stukas or ME-109s.

As we began our long trek northward from Niscemi on 14 July, we received a pleasant and morale-boosting surprise. Brigadier General "Teddy" Roosevelt, our assistant division commander, joined the head of the company's column during

Gela to Niscemi	11 miles
Niscemi to Mazzarino	27 miles
Mazzarino to Barrafranca	8 miles
Barrafranca to Pietraperzia	19 miles
Pietraperzia to Enna	18 miles
Enna to Petralia	22 miles
Petralia to Gangi	10 miles
Gangi to Sperlinga	10 miles
Sperlinga to Nicosia	4 miles
Nicosia to Cerami	20 miles
Cerami to Troina	7 miles
Troina to Randazzo	23 miles
Total	179 miles

one of our periodic breaks and walked with us on that dusty, winding road for at least two or three miles. He was an instant favorite, exchanging stories with the men of each platoon. Fortunately, this was just the first of such visits. He joined us during several of our other approach marches, on one occasion experiencing some rather heavy incoming German artillery fire. General Roosevelt remained standing even as we hit the dirt; he was a very brave man, an inspiration for all of these young Americans.

On 15 July our company's forward assembly area on a high ridge just north of Mazzarino proved to be a perfect place from which to watch the U.S. 70th Light Tank Battalion take on a German company in the valley below. Approximately 50 of our Stuart light tanks (armed with 37mm guns) played "hide and seek" with about a dozen German Mark IV medium tanks (armed with high-velocity 75mm guns). Each side scored its share of good hits firing from hull defilade positions, but the outgunned U.S. battalion appeared to lose five of its tanks for every one German tank it knocked out. After an hour of fighting, the German tanks withdrew in the direction of Barrafranca, leaving the U.S. 70th Battalion to lick its wounds and prepare to head northward again.

The next day, 16 July, the 3d Battalion, 16th Infantry, received orders to be prepared to move north to protect the left flank of the 26th Infantry as the latter, with its 2d and 3d Battalions forward, deployed on barren slopes to

assault Barrafranca. From our position high on a ridgeline, we saw the two battalions hit by a series of heavy rocket barrages. The 150mm and 210mm rockets were awesome in sound and terrifying in apparent results. I was certain the broad area covered by a huge dust cloud would be covered with dead Americans. As it turned out, however, the barrages had produced far fewer casualties than expected. Effective counterbattery fire from our own long-range artillery later managed to destroy *Nebelwerfer* firing positions behind the town.

By then we had moved into position to protect the 26th Infantry's exposed flank. Later, we rejoined our own regiment and led it through Barrafranca enroute to Pietraperzia.

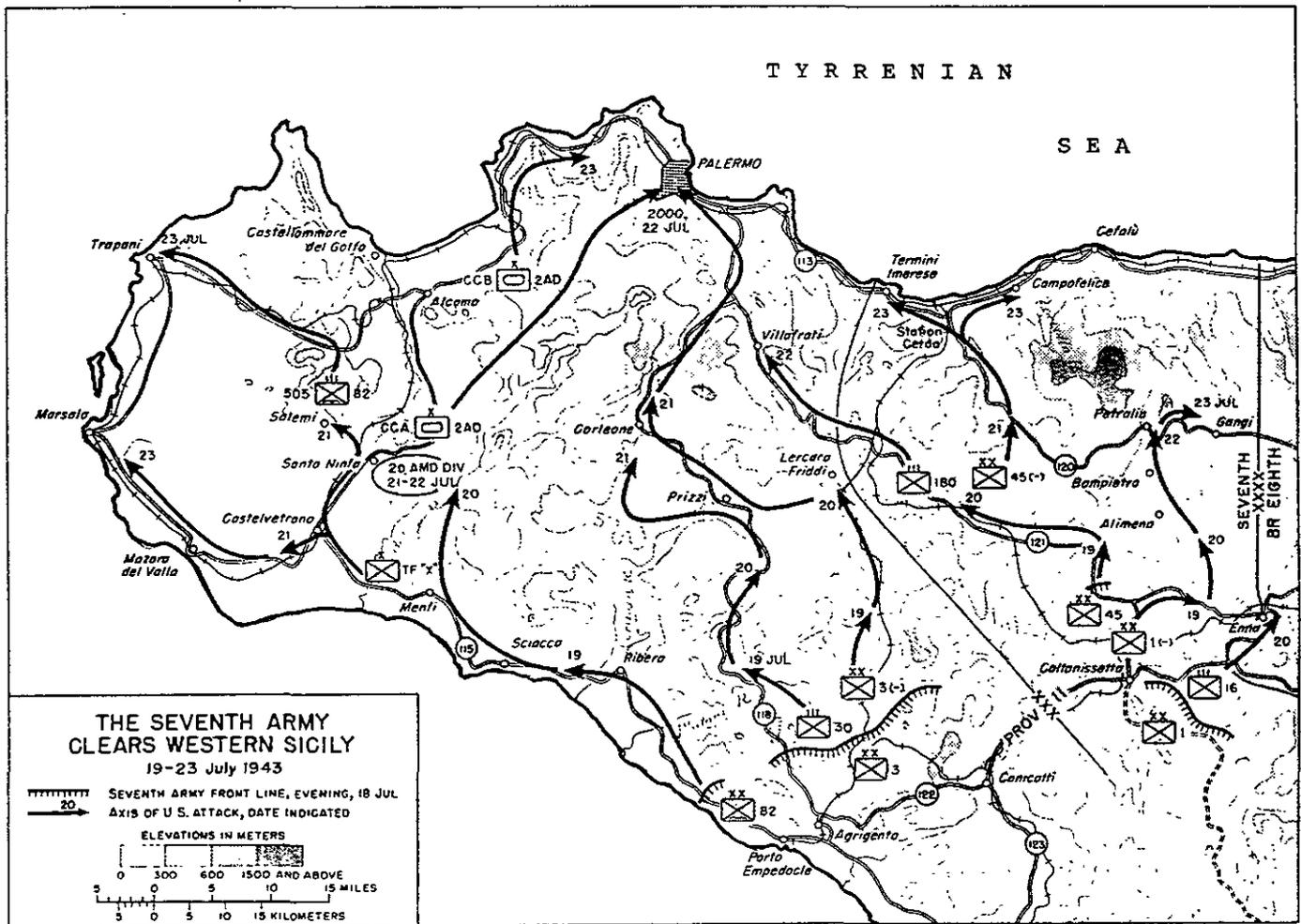
On 18 July I deployed Company L on high ground overlooking the highway from Caltanissetta to Enna. We established roadblocks and ambushes below our position along that important road. Luck was with us during the next 24 hours, and we captured a number of German vehicles, including a messenger's motorcycle.

(The sergeant responsible for these successes had our Company L mechanic check out the motorcycle and then presented it to me, saying it would help me on reconnaissances and in controlling our march columns. I practiced driving on 19 July, with good results. Next day, when our advance into Enna slowed to a crawl, I mounted my new toy and drove past elements of the 70th Tank Battalion to reach its commander and ask what was happening. While navigating an especially sharp curve on the steep, winding dirt road, I turned too quickly and overturned, just a few yards ahead of a moving tank. Fortunately, the driver of the tank, a better driver than I was, managed to stop just before I became a statistic. From that moment to this, I have never again been on a motorcycle.)

As the 70th Tank Battalion continued its attack past the outskirts of Enna, we in the 3d Battalion, 16th Infantry, had the honor of entering and securing the town. I can still see the happy Sicilians standing along every street waving homemade U.S. flags and shouting, "Viva, Babe Ruth." We later concluded that "the Babe" was Sicily's favorite U.S. celebrity. Again it was clearly evident that, to these people, we were the good guys.

Several days later, following the 18th and 26th Infantry Regiments, the 16th was again headed north to an assembly area between Petralia and Gangi (Map 2). From there, we expected to attack eastward to seize Nicosia and Troina. Most German resistance was increasing, and the difficult terrain favored the enemy's defense and facilitated his retrograde movement. Except during the hours of darkness, every U.S. unit was under continuous German observation, often from several different mountain peaks. Incoming artillery fire was increasingly effective. The toughest phase of the campaign was just ahead.

In the meantime, Lieutenant General George S. Patton, Jr., had shifted Seventh Army's main axis of advance to the west because of disputes he had had with British General Bernard Montgomery—disputes that British General Harold Alexander, the overall ground commander, had settled in Montgomery's



Map 2

favor. Using General Lucian Truscott's 3d Infantry Division's reconnaissance in force from Licata to Agrigento as a springboard, and not informing Alexander of his exact plan until 3d Infantry Division units were on the way, Patton sent the Seventh Army driving for Palermo. In a dash across western Sicily against only light Italian resistance between 19 and 23 July, Seventh Army troops seized Palermo on 22 July while other Army forces reached the north coast on the following day. At this point, Patton again changed directions.

II Corps pivoted 90 degrees to the east and spearheaded the Seventh Army drive to Messina. The 45th Division used the north coast road (Highway 113) while the 1st Division attacked eastward astride a parallel inland road (Highway 120) about 15 miles to the south (Map 2).

Leading our division's advance, the 26th Infantry Regimental Combat Team (RCT) secured high ground east of Gangi by late evening, 24 July. Then, with battalions deployed north and south of Highway 120, the 26th attacked continuously against determined German resistance, finally securing key hills five miles east of Gangi by dark on 26 July.

Meanwhile, the 18th Infantry RCT closed into an assembly area near Gangi on 25 July, and our 3d Battalion led the 16th Infantry RCT into an assembly area southwest of the town early on 26 July. Enemy artillery interdicted the area day and night. (The soldiers hated the sound of incoming German

shells, especially those from the 88mm guns. On this morning, following the burst of a large round, one of my soldiers ran into its crater, dropped his pants, and relieved himself. His buddies cheered this sterling achievement under fire.)

At 0300, 27 July, 3d Battalion conducted a night attack to eliminate a German strong point that was holding up our advance and that of a battalion from the 18th Infantry to the north. Company I, on our left, attacked a troublesome German ravine position while we in Company L attacked a small hill position just to the south.

Despite the darkness and rough terrain, we were able to accomplish our mission in good time. Fortunately, there had been no minefields to slow our advance, and the German defenders had withdrawn earlier that evening. Company I, however, had a fierce fight among the ravine defenses. Our battalion commander, Major Charles Horner, later recalled that action as follows:

Surprise was essential. The attack was to be initiated by bazooka fire, with the bayonet as the primary weapon in the assault phase. All rifles were placed on "safe." The quick charge by Company I, led by Captain Kim Richmond, caught the Germans by surprise. The result: numerous German dead from the cold steel of American bayonets. Further, it resulted in numerous prisoners being taken. Company I suffered few casualties.

Twenty-four hours later, after some much-needed sleep, the battalion continued its attack to the east.

By far the best day of the campaign for 3d Battalion, 16th Infantry, was 28 July. Company L's mission was to lead out at dawn and seize Sperlinga (Map 3) about a mile down the road. Then, on order, Company I was to continue the attack eastward to take Nicosia. Except for some brief friendly fire from our own division artillery, my company had no trouble securing its objective by about 0800. The enemy defenders had withdrawn from the town during the night.

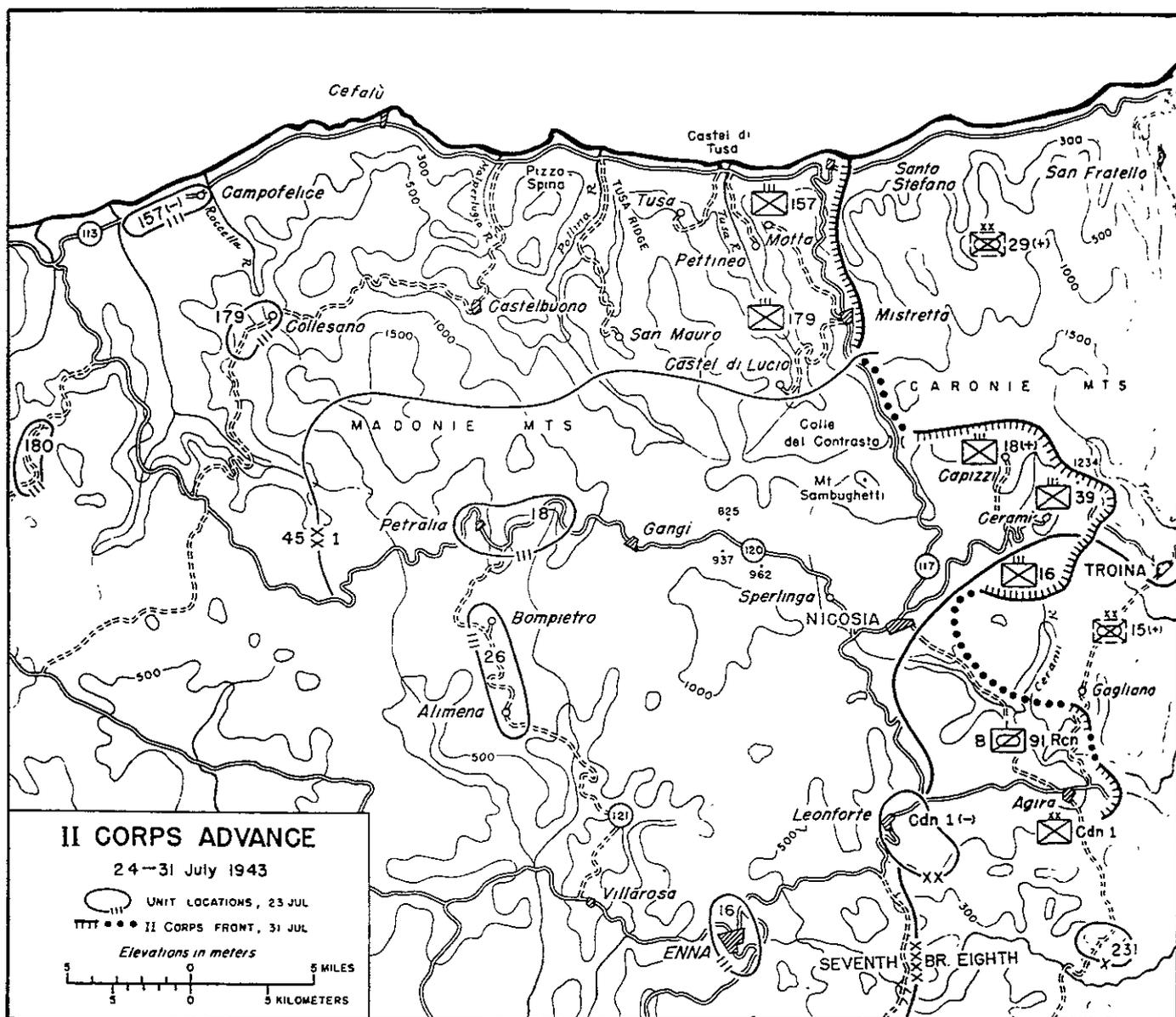
Along with members of my lead platoon, I was greeted on the outskirts of town by an Italian named Joe who spoke American English. He had been deported from Baltimore to Rome in the 1930s for bootlegging, and Mussolini had sent him and other undesirables to Sicily in 1941. Unwelcome and badly treated by the Sicilians, Joe was now the happiest man on the island—his friends, the Americans, were in charge and he was their chief interpreter.

Minutes later, Major Horner and his small battalion command group joined us in the center of town, along the highway to Nicosia. His orders to me were loud and clear: "Company L has been designated II Corps reserve. You will remain in Sperlinga for the next 24 to 48 hours."

Clearly, he was eager to continue the attack toward Nicosia, but he could not contact Captain Richmond and became more and more angry and impatient with each passing minute. Here, recorded in a 1988 letter, are Horner's recollections of what happened that memorable day:

My instructions were that each company on reaching Sperlinga would receive further orders. While waiting for Company I, I was unfortunately out of radio communication. Suddenly, machinegun fire could be heard from the direction of Nicosia some three miles away. The fire was that of the very rapid rate of German machineguns and also the slow rate of U.S. Browning light machineguns. Who was in Nicosia?

A short time later, General Teddy Roosevelt rode up and



Map 3

subclimate areas, there is a danger of heat exhaustion and dehydration. Temperatures are in the 90s with high relative humidity (above 60 percent), which puts wet bulb temperatures in the critical range of 70 to 90 degrees Fahrenheit. Each soldier may have to drink up to two gallons of water per day to avoid heat injury. The intensity of the heat causes sunburn, and the sun's glare can cause eye injury. The heat and humidity of these subclimates reduce the soldiers' ability to work, especially in the afternoon. It is best to plan operations for early morning or night.

Heat and humidity are less of a problem in the marine west coast areas. Extreme conditions can exist in these areas but only for short periods (a few days at most). Closer to the poles in these areas, the comfortable 70-degree temperatures drop in winter below the critical 50-degree level at which the danger of cold weather injuries begins. The cold of the marine west coast areas is made worse by the dampness, which makes soldiers more susceptible to colds and influenza. Frostbite is a lesser concern because temperatures are rarely below zero, but the continued exposure to cold and wetness together can be a problem. The cold wet winter is longer in the marine west coast areas than in the mediterranean and humid subtropical areas, but these areas can also expect short periods (two weeks or so) of below-freezing temperatures.

The chief problem in the temperate regions is the rapid change in conditions. Temperatures can range 50 degrees in one day, causing drastic changes that soldiers cannot physically adjust to, and that leaders cannot anticipate and prepare for with equipment and extra clothing.

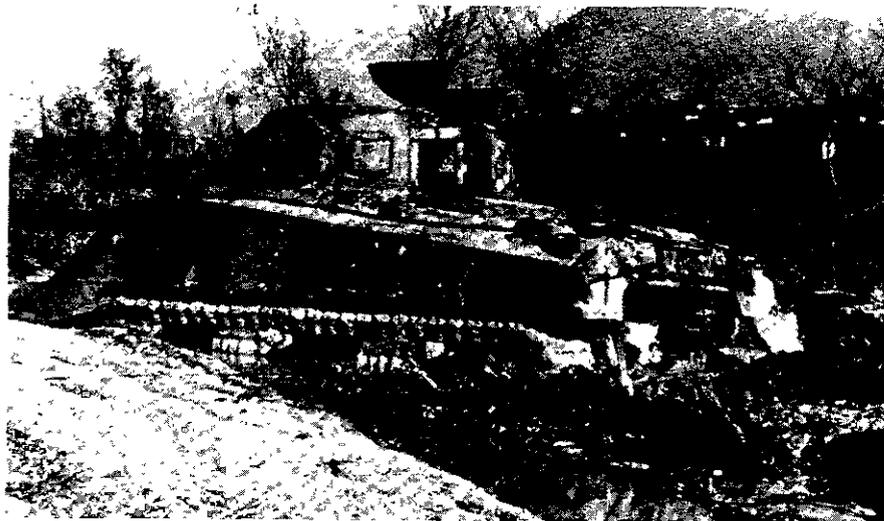
Frequent rain and dampness in the marine west coast subclimate areas, and to a lesser extent in humid subtropical areas, affect the soldiers' physical and psychological well-being. Rain from severe thunderstorms or frontal systems creates hazards to soldiers. Flash flooding fills gullies and swells rivers, making crossing dangerous. Roads become slippery. Air operations become risky. Dampness leads to sickness. With frontal systems, the dampness can continue for weeks, leading to psychological depression in soldiers. This can occur in fall or winter.

Mud may be the biggest problem in all areas of temperate regions. It affects soldiers psychologically as they become irritable from being constantly wet and dirty. Frustration follows, because even the simplest tasks are more complex in mud.

Vehicles get mired, requiring inherently dangerous recovery operations. In the trenches of World War I in France and Belgium, soldiers actually drowned in the mud. According to the account of one unit commander, between 25 October 1914 and 10 March 1915 there were only 18 dry days. To prevent sinking, soldiers had to remain flat in the mud to distribute their weight evenly, and 16 soldiers drowned in it. In the battles around Ypres, the changing weather and mud made conditions intolerable, affecting morale and causing casualties. In the last battles around this obliterated village in the winter of 1918, alternating fronts caused periods of extreme cold and sudden thaw, varied by heavy snowfalls, hailstorms, and rain.

On 15 January a warm spell was ushered in by gale force winds and torrential rain. Plank roads and duckboards were washed away. Men sank deep into icy, clinging mud and had to be dug out. Trenches collapsed from the rain, and shell holes flooded. Digging-in was impossible. Stepping off the duckboards meant sinking knee-deep in the mud. Many who slipped into the mud at night suffered from exposure and, after many hours, died of cold or exhaustion. These conditions, combined with such factors as the smell of corpses and asphyxiating gas delivered by artillery shells, to say nothing of the tactics (frontal attacks into machinegun fire), induced extreme fear and psychological instability.

In frequent thunderstorms, antennas and vehicles in the open are susceptible to lightning. Associated with these storms is high wind, which can uproot or snap trees, endangering soldiers in the field. Even in normally mild-weather areas such as Germany, units have been hit by brief but violent windstorms that blew trees down onto vehicles and tents, destroying equipment and sending soldiers to the hospital. Weather warnings should be provided and immediate precautions taken, especially in training situations where safety is top priority. The humid subtropical areas are also susceptible to violent storms such as tornadoes with winds up to 500 miles per hour



U.S. Army tank mired in the mud of an Italian flood plain during the Allied advance up the boot of Italy, World War II.



TEMPERATE REGIONS: INFLUENCES ON MILITARY OPERATIONS, PART 2

COLONEL ROBERT H. CLEGG

EDITOR'S NOTE: This article is the second in a two-part series on the temperate regions of the world and their environmental effects on military operations. Part I, in the July-August 1993 issue, discussed the unique aspects of temperate regions, the terrain and its military effects, observation and fields of fire, obstacles, cover and concealment, and avenues of approach. Part 2 deals with the effects of the weather and terrain on soldiers, equipment and facilities, and combat and support operations.

This article concludes Colonel Clegg's INFANTRY series on the various regions of the world. The earlier articles are

"Environmental Influences on Desert Operations" (May-June 1992); the two-part "Cold Regions: Environmental Influences on Military Operations," co-authored with Brigadier General Peter W. Clegg (July-August and September-October 1992); and the two-part "Tropical Regions: Influences on Military Operations" (March-April and May-June 1993).

Together, these articles provide a complete reference that military leaders can use in preparing their units to train or operate in any part of the world to which they may be deployed in the future. Reprints and some back issues of INFANTRY may be ordered directly from the magazine.

In the temperate regions, the extremes of the arid, tropical, and cold regions that affect soldiers are significantly more moderate. The cold, heat, wetness, and disease do exist, but their effects are far less severe. The chief problems are caused by the rapid changes in weather conditions.

In the Korean War, for example, a battalion-sized relief was conducted in the late afternoon on a 4,500-foot mountain. Temperatures were high, and the soldiers were appropriately

dressed. With the higher elevation and an advancing cold front, however, temperatures dropped to below freezing, and three-fourths of the soldiers sustained cold injuries.

The seasonal and daily changes can be so drastic that it is difficult for people to adjust. Elements of the weather and the terrain affect both the physical and the psychological well-being of soldiers.

In summer, in the mediterranean and humid subtropical

congratulated me for taking Nicosia. I told him we could not be sure it was anyone from the 3d Battalion since we had no communication with Company I. Teddy put on his helmet, placed his carbine at the ready on his lap, and said: "Let's go see."

The three-mile trip up the winding road was a scary one to say the least. Nicosia sat on a dominating hill. The road, of course, had not been swept for mines so our jeep moved rather slowly. At the edge of town I found one of our artillery forward observers who confirmed Company I was in Nicosia. White sheets hung from the windows of each house. We continued into the town square where hundreds of Italian prisoners were being assembled. [According to the official U.S. Army history, "Before the day was over the 16th Infantry had captured seven hundred Italians and a few Germans who failed to escape from Nicosia."] Our machineguns on main street corners covered exits from town.

We found Captain Kim Richmond having wine and cheese in the Mayor's office. Words of praise for the successful attack flowed from Roosevelt's gravelly voice. Both he and I joined in the cheese and wine feast!

After General Roosevelt departed I asked Kim why he hadn't followed my instructions . . . to meet me in Sperlinga. Kim said that he realized by going cross country he would get to Nicosia much faster. Also, he had received the battalion S-3's permission to by-pass Sperlinga. All was forgiven! Success overcomes everything! Kim's aggressive, offensive spirit won the day in a quick and decisive manner.

Back in Sperlinga, the people gave my Company L a warm welcome. Weary of war and the German-led military occupation, they opened their hearts and homes to my soldiers and even butchered a prize steer to provide beef for our kitchens.

My executive officer, our interpreter Joe, and I were invited to dinner that first night by the acting mayor. We entered his home on the ground-level that sheltered a variety of farm animals, feed supplies, and piles of manure. Happily, the second story (at the top of steep wooden steps) housed clean, comfortable living quarters. We enjoyed the meal, lively conversation, and warm hospitality. I had to say "no," however, when our hosts asked for help in obtaining the release of relatives who were prisoners of war. They were the lucky ones; the war was over for them.

Following the capture of Nicosia, the 16th Infantry RCT continued its attack to the northeast astride Highway 120. By dark on 29 July, the 16th had seized a key enemy delaying position, capturing or killing many Germans in the process.

The 39th Infantry RCT, U.S. 9th Infantry Division, commanded by Colonel "Paddy" Flint, was attached to the 1st Division effective midnight 29 July. On the following day, the division ordered the 39th to pass through the 16th's front lines and attack Troina. According to General Bradley, "The Germans were not yet ready to abandon Troina. It developed into our toughest fight in the Sicily Campaign."

Meanwhile, on 31 July our battalion S-3 was wounded by enemy artillery fire and was evacuated. Fortunately, with the regiment in division reserve, Major Horner could make some

immediate reassignments: I became the battalion S-3, and my company executive officer, Lieutenant Ed Montague, took command of Company L. Obviously, it was a major personal readjustment for both of us.

Following a much needed two-day rest, the 16th Infantry RCT was ordered to attack due east at 0300, 3 August, and seize Troina. We moved out shortly after midnight with the 2d Battalion on our left. From daylight on 3 August until the seizure of Troina on 6 August, the action was fierce; American casualties were high, and German resistance was as determined as ever. Enemy observation posts covered our every movement during the day, and German mines, especially the antipersonnel "bouncing Betties," made our night attacks a frightening experience. Perhaps the toughest thing to take was being an individual target for German flat trajectory guns—anytime, anywhere.

Resupplying forward battalions and companies was always difficult, and getting ammunition, rations, and water to those companies was sometimes impossible. Mule trains helped, but we were inexperienced in using them. Jeeps and three-quarter-ton trucks sometimes got through. Here again, though, enemy mines still took a heavy toll. Tragically, our battalion S-1, Captain Paul Altomerianos, was killed as he tried to get supplies to us through a heavily mined area.

The volume, intensity, and accuracy of the German weapons exacted a heavy toll throughout the division. Too many brave company and platoon commanders were either killed or seriously wounded as they led the way. Among the latter were Lieutenant Montague and Platoon Sergeant Arthur White. Lieutenant Bob Cutler took over Company L for the final assault on Troina.

Our division artillery, reinforced by corps and army artillery battalions, consistently provided the best support possible. The professionalism of artillerymen at every level—observers, gunners, commanders—reduced our infantry casualties immeasurably. As I recall from after-action reports, the 7th Field Artillery Battalion fired about 10,000 shells in support of our 16th Infantry attacks between 3 and 6 August.

The 1st Engineer Battalion did an equally superb support job during every phase of the battle. Engineer soldiers cleared paths through threatening minefields, repaired roads and bridges under fire so we could get our supplies forward, and added their firepower whenever it was needed. Infantrymen respected combat engineers and vice versa.

It was during our final attack against Troina, after almost four weeks of campaigning, that we experienced close air support—if you could call it that—from the U.S. Army Air Corps. Early on 6 August, just as Company L was making its assault, we were attacked by twelve P-47 fighter-bombers, each with six .50-caliber machineguns blazing. They hit us from our lead scouts back to battalion headquarters. Along with others in our battalion command group, I dove into a shallow drainage ditch along that narrow dirt road leading into the town. Then the planes all made a second strafing pass.

Fortunately, our group had no personnel casualties; the only damage we suffered was one burned-out artillery liaison truck. Still, from rifleman to battalion commander, we were boiling

mad—not just at the Air Corps but also at our regimental headquarters, which had scheduled the strike and then failed to call it off.

Aside from the threat of omnipresent mines and a few final enemy rounds, we in the 3d Battalion occupied Troina on the morning of 6 August without further fighting. Although we didn't realize it then, as it turned out, the division's part in the campaign was over. General Bradley passed the 9th Division through our units for the final push to Randazzo and Messina. The 1st Division became the II Corps reserve, with the 16th Infantry in assembly areas near Mount Etna.

On 7 August 1943, the 1st Division commander, Major General Terry Allen, was reassigned to the United States and Major General Clarence Huebner became the new division commander.

Before closing my story, I must add a few recollections on health and medical matters. In 1943 the island of Sicily, except for the larger coastal cities, was an environmental disaster, one of the unhealthiest places in the world for Americans to fight a war. Over the centuries, rains had washed animal and human waste, plus garbage and trash of every description, through the hilltop towns and down into the valleys. Rivers, streams, and dry watercourses were totally polluted. Untold millions of flies tormented the villagers and spread diarrhea. Countless millions of mosquitoes spread malaria among all the troop units. As a result, during the entire campaign, hospital admissions for disease far exceeded the number of admissions for wounds and injuries.

According to the Army's official history of the campaign, *Sicily and the Surrender of Italy*, by Albert N. Garland and Harold McGaw Smith (page 419):

The Seventh Army Medical Corps personnel... processed 20,734 hospital admissions of U.S. personnel and established two field and six evacuation hospitals. Of the total admissions, 7,714 were for wounds or injuries; the other 13,320 were for diseases, with malaria and diarrhea accounting for two-thirds of these. Roughly half of the hospital cases were evacuated to North Africa, an equal number each by air and water.

I recall taking Atabrine pills daily and using water purification tablets every time my canteen needed filling, and my soldiers did likewise. Even with these precautions, I suffered from diarrhea throughout the campaign and had a brief bout with malaria. Most of us in the regiment ended up with some degree of jaundice.

My gums started bleeding midway through the campaign and weren't healed until late August. About that same time, I lost my vision for two days for reasons still unknown. Large sores on the backs of my hands (caused by something in the dirt) mystified our battalion surgeon from July until late November. Then, back in England, thrice-daily hydrogen peroxide cleanings, followed by coatings of sulfanilamide powder, finally worked the cure.

Incidentally, because of the diarrhea, heat, and lack of regular meals, I lost a pound a day during the campaign, and my men had similar health problems. But we were the fortunate ones, because we didn't have to be evacuated for treatment during the fighting.

Epilogue

• The Sicily ground campaign, which started on 9 July 1943, ended on 17 August as American and British troops arrived in Messina, a city just evacuated by a rear guard of German and Italian forces. Page 553 of the official history summarizes the effect of that campaign on World War II:

The campaign on Sicily that led to the capitulation of Italy proved several things. Like the invasion of North Africa, the Sicilian landings showed that Axis-held Europe was vulnerable to amphibious and airborne attack. It demonstrated the superiority of Allied weapons and equipment. It illustrated the resourcefulness and skill of the German foot soldier, who, despite numerical and technological inferiority, demonstrated once again the fundamental importance of terrain and its use in a struggle between ground forces. It gave the American field commanders in Europe experience, and particularly with respect to the British ally, a maturity not achieved before. Most of all, the Sicilian Campaign, by making possible the Italian surrender, marked a milestone on the Allied road to victory.

• German retrograde operations in Sicily were well planned and superbly executed. They are worthy of study by today's military professionals.

• Our combat experience in Sicily was the best possible preparation for the invasion of France in June 1944. The lessons we learned there undoubtedly reduced our casualties at Normandy.

• Platoon Sergeant Arthur White, permanently disabled as a result of wounds he received in the battle for Troina, completed training as a watchmaker following World War II. He eventually bought a home and learned to drive in spite of his injuries. We stayed in touch over the years, and enjoyed our good long talks each year at a 1st Division dinner in New York. Art was a cheerful, ardent supporter of our Army until the day he died.

• The Company L private—we'll call him Jones—who did not want to accompany the unit into Sicily conducted himself well during the fighting and came out of it a proud veteran. After the battle, I had not seen him for some time, but one day, as I was returning from the hospital to my unit in a jeep, I stopped to pick up a hitchhiking soldier, and there he was. We recognized each other immediately and happily there were no ill feelings.

• Finally, no one could have imagined at the time that both the 55-year-old General Roosevelt and the 26-year-old Lieutenant Monteith, who hiked with the rest of us along the road out of Niscemi on that hot July day, would be heroes of the Normandy invasion 11 months later. General Roosevelt received the Medal of Honor for his courageous and inspiring leadership on UTAH Beach. Lieutenant Monteith was awarded the Medal of Honor posthumously for his brave deeds on the eastern end of OMAHA Beach.

Major General Albert H. Smith, Jr., U.S. Army Retired, also served with the 1st Infantry Division in Vietnam, as assistant division commander and acting division commander. He served as Honorary Colonel of the 16th Infantry Regiment from December 1983 until May 1990.

and hurricanes with winds from 74 to 150 miles per hour, high intensity rains, and storm surge waves from the ocean.

Although casualties from disease are less numerous in the temperate regions, they are still a concern, and proper sanitation is just as important as in other regions. In summer, heat injuries can be prevented by ample water intake, while in winter, cold injuries can be prevented by exercise and proper layering of clothes. In World War I a soldier's daily winter ritual was to rub his feet with whale oil and change socks to prevent trench-foot and inflammation from prolonged exposure to cold and wetness and a lack of exercise.

In the warm summer months, diseases carried by insects can be a problem. Mosquitoes, flies, bees, and ticks are bothersome. Some poisonous spiders and snakes exist in the mountains and swamps. There is little danger from large animals, because most avoid humans. Some may become nuisances, however, as they look for food. Soldiers must be cautioned to dispose of leftovers and properly store snack foods. Rats are a concern in defensive positions that are occupied for long periods, as in the trenches of World War I.

The terrain in temperate areas poses risks. Steep slopes and thorny vegetation in the mediterranean and humid subtropical areas can cause injury. Negotiating steep slopes, especially in hot weather, can lead to physical exhaustion. Irritating cuts from thorns can lead to infection if not properly cleansed. Rocky slopes can cause twisted ankles—not dangerous in themselves, but a soldier with a twisted ankle cannot carry his load and it must be divided among others. He may even need help walking. Other terrain-associated hazards, such as floods, volcanoes, earthquakes, and landslides, also occur in temperate regions.

The environmental conditions in temperate regions pose less risk to soldiers. Still, the dangers are ever-present and soldiers must be aware of them and of the countermeasures that will help reduce casualties and conserve combat power.

Effects on Equipment and Facilities

The extremes in arid, tropical, and cold regions require close attention to their effects on equipment and facilities. Neglect in temperate regions can also lead to disaster. Because the extremes occur less often, leaders and soldiers alike may not have the sense of urgency to inspect equipment. For example, coolant and battery acid levels must be checked frequently, particularly in the summer heat of the mediterranean and humid subtropical areas where significant evaporation occurs, just as it does in desert areas. Sudden cold spells in the marine west coast winter require that antifreeze levels be checked frequently and that preparations be made for worst-case conditions. Leaders must recognize and fight the complacency that mild conditions tend to induce.

The variability of temperature also affects equipment. The alternate freezing and thawing of the fall and spring causes expansion and contraction in metals, plastics, and rubber. Containers are particularly affected as the liquids in them freeze or expand. Constant expansion and contraction reduce the strength of equipment, loosen connections, and cause equipment to crack or fall apart.

Temperature, precipitation, and wind all affect equipment and facilities. Catastrophic events (floods, earthquakes, landslides, volcanoes) and surface cover (vegetation, rock, mud) can also damage vehicles, aircraft, sensors, and weapons as well as structures, roads, bridges, and runways.

Seasonal changes affect vehicle maintenance requirements. Tire pressures, fluid levels, and batteries must be regularly checked as the seasonal temperature changes also change requirements. The influences of heat, such as loss of vehicle power (one percent for every 10 degrees Fahrenheit over 60 degrees) and strain on transmissions, gaskets, plastics, and brake lines, are a concern in the humid subtropical and mediterranean areas.

The effects of cold (sticking gauges, freezing brakes, blocking fuel lines, stiffening linkages, and hard-to-start engines) apply in the marine west coast subclimate areas. The constant moisture of the marine west coast areas—and to a lesser extent, the humid subtropical areas and seasonal precipitation in the mediterranean areas—cause other problems for vehicles: Electrical components short out, rubber parts such as gaskets deteriorate, moisture collects in gauges and fuel systems, and metals rust. (Rust occurs much slower than in tropical areas and can easily go unnoticed). Rust also hides cracks that make metals unserviceable. The wetness also reduces the tensile strength of rappelling ropes by 18 percent. Winds cause loose straps to flap and break connectors, chip paint, or crack glass. A real danger from the wind is the trees that blow down and land on vehicles.

Because of the thick underbrush in the humid subtropical areas, cross-country movement taxes engines and transmissions; vegetation entangles axles and wheel hubs, causing damage. Even tracked vehicles can be damaged by vegetation debris in the sprockets, road wheels, and guides. The rocky mediterranean terrain plays havoc with tires, increasing wear and causing punctures.

The mud that results from the deep clay soils and ample moisture of the temperate regions places strain on engines and transmissions. It clings to axles, wheels, brakes, steering linkages, and track suspensions. The alternating freeze-thaw and wet-dry of the temperate regions cause additional problems as the mud dries or freezes in large clumps that can throw tracks and bind wheels. During extended dry periods (usually in mediterranean areas), dust clogs filters, contaminates fuels and lubricants, and endangers operating conditions for both vehicles and aircraft.

Since temperature controls pressure, it also determines the lift and performance of aircraft. In the hot summer of the mediterranean and humid subtropical areas, a decrease in capability is common, especially in the afternoon. The reduced lift may preclude the movement of needed artillery. Heavy sling-load operations should be planned for early morning.

Icing is a problem in the marine west coast areas in winter. The frequent fog and frontal storms make for dangerous flying conditions. High winds associated with the storms can overturn aircraft. Aircraft must be protected in hangars or tied down with chains and weights. In the mountains, air currents can be tricky, producing dangerous flying conditions.

The modern Army relies on sensors, radios, computers, and a host of other electronic equipment. Moisture and temperature changes cause this equipment to fail or malfunction. High humidity causes interference with signals and shorts out components. Excessive heat buildup in equipment can lead to burnout. Optics are especially sensitive to temperature changes as their mounts expand and contract. Icing on antennas reduces range and increases noise. Wire gets lost in the mud. Fog and heavy rain or snow affect the returns on sensors; false readings and reduced ranges can be expected. Electronic equipment needs to be kept dry and cool. Again, moderate conditions may lead to complacency and neglect.

Standard maintenance and cleaning of weapons is just as critical in temperate regions as in other climatic areas. Although conditions are well within the design characteristics of the Army's weapons, mud is again the major problem. Dirty cartridges and rifle parts jam, and soldiers may have to take extraordinary measures to keep them operational. (In the trenches of World War I, soldiers urinated on their weapons to keep them free of dirt and mud, not necessarily a recommended measure.) Indirect fire munitions are less effective in mud and thick underbrush. Artillery and missiles are susceptible to freeze-and-thaw cycles that cause metal to expand and contract; this in turn affects wear and accuracy, propellant performance, and munitions effects.

Changing temperatures also affect such structures as buildings, bridges, roads, and runways. The ground shifts in the freeze-thaw process, causing movement in buildings and bridges that weakens them and leads to their collapse. Roads and runways crack and develop potholes that cause accidents. Storms associated with frontal systems (lightning, heavy rain), hurricanes, and high winds or tornadoes are obvious concerns for facilities.

Although the conditions of the temperate regions do not place equipment and facilities in the same degree of jeopardy as more extreme climates, the freeze-thaw and the tendency to laxity produce factors that require attention to normal maintenance and care for equipment and facilities.

Effects on Combat Operations

Combat operations require both movement and visibility, and weather and terrain affect both. On land, at sea, or in the air, weather is the primary consideration in determining visibility. Weather conditions, particularly the changing conditions characteristic of temperate regions, influence surface conditions; these in turn affect trafficability or movement.

The principal weather elements that affect combat operations are wind and moisture. Wind and turbulence reduce flying opportunities, thereby restricting airborne, air assault, tactical air support, and logistical support operations. (Winds of more than 30 knots at jump altitude or 13 knots at the surface preclude airborne operations. Winds over 6 knots in air assault operations preclude landing with the wind, and gusts of 15 knots or wind speeds of 30 knots preclude helicopter flights—except for UH-60s, which can fly in winds up to 45 knots. Winds over 15 knots begin to cause problems for take-offs and landings in tactical air support and air logistical sup-

port.) Winds can also retard ground movement, slowing advances.

Atmospheric moisture, either condensation or precipitation, greatly hinders combat operations. Condensation in the form of clouds and fog reduces visibility to the point that air operations are suspended and ground movement is slow and dangerous (less than one-half mile of visibility and a cloud ceiling of less than 500 feet preclude air operations). Precipitation (rain, snow, ice) also reduces visibility and interferes with aircraft safety, often halting operations. Moisture interacting with soil, particularly clay, reduces trafficability while moisture with sand can increase trafficability.

Several terrain factors reduce movement: Slope, surface material, surface cover, man-made features, vegetation, and water. Slopes of more than 30 degrees and 45 degrees, respectively, preclude wheeled and tracked vehicle movement. Trees with stem thicknesses over four inches and six inches, respectively, and tree spacing of 12 feet and 15 feet, respectively, preclude wheeled and tracked vehicle movement). Hedgerows, vineyard lines, rivers, and swamps all restrict movement as well.

In many cases, the combination of weather and terrain has outweighed the effects of good tactics and firepower and the courage of soldiers on the battlefield. In October 1916 the Somme battlefields were subjected to five weeks of constant rain. The fields had been pitted and churned by massive artillery fire and transformed into a sea of mud where soldiers and horses drowned. The deep clay soil created a mud that sucked the boots and the pants off the soldiers. Shell holes became pools of water that lasted for months. Wood and stone were imported to shore up roads and trenches. Visibility was reduced, enabling the Germans to bring their reserves forward undetected, adjust their lines, strengthen their defenses, and prepare to counterattack. The British attacked first. The soldiers helped each other out of waist-deep water, over the walls of collapsing trenches, and across the saturated ground of standing water and mud into merciless machinegun fire.

On 14 November a high pressure system brought cold, clear conditions that drastically changed the tactical situation. The soil froze into a hard surface, allowing movement but also excellent visibility. (It seems that whenever movement is easy, concealment is difficult because visibility improves; and when weather conditions provide easy concealment, trafficability deteriorates.) Before nightfall on 18 November, a warm front brought a thaw and more rain. A heavy fog resulted, limiting visibility, and the mud returned, reducing trafficability. In the alternating fronts and storms—freeze and thaw—the attack died in the mud. The 140 German divisions still suffered a 50-percent casualty rate (one-half million soldiers).

In World War II weather and terrain dominated in Hitler's last major offensive, which plunged through the Ardennes, creating a bulge in the front. The Battle of the Bulge occurred because overcast skies with low cloud ceiling and rolling hills with deeply cut ravines and forest vegetation permitted German forces to mass for this major offensive practically undetected. In December 1944 warm moist air from the Atlantic Ocean moved east over the snow of the Ardennes. As the



Obstacles on the Normandy beaches during World War II. Note the high ground to the rear where machinegun positions were emplaced and forward observers adjusted fire.

warm air moved over colder snow, the air at the surface cooled, increasing relative humidity to the dew point. Condensation occurred, creating a thick advection fog that drifted across the area and lasted for days. With snow on the ground and fog in the air, the Allied offensive halted and German preparations continued.

The selection of the Eifel region, of which the Ardennes is a part, for the attack surprised the Allies, although the Germans had used this avenue in 1914 and again in 1940. Parallel ridges extend northeast to southwest across the region (with the higher Ardennes ridge to the west facing Belgium). The terrain is compartmented, channeling movement in the valley floor. Steep stream banks and slopes, as well as thick evergreen forests, further restrict movement. The Losheim Gap, a relatively flat, cleared corridor through the region, was the traditional avenue used by the Germans. Their objective, Antwerp (a major logistics base), was only about 100 miles to the west. With the aid of inclement weather and the restricted nature of the Ardennes (lightly held by the Allies), Hitler felt that success was in his grasp.

The attack had been scheduled for 25 November to take full advantage of poor weather, which would preclude the use of Allied air power and provide ground concealment for security. At this time, the new moon provided little illumination. The German plan required ten days of poor weather. But the complex terrain and poor weather also affected them, and it took two weeks longer to assemble their force. The weather depended on the relative strengths of the competing Siberian high (cold and clear) and the frontal North Atlantic or Icelandic low pressure systems (warmer and cloudy) brought across the continent by westerly air flows. The Eifel ridges, particularly the Ardennes or western ridge—the first high ground to affect the frontal air—elevates air causing cooling, condensation, and precipitation. The Icelandic low usually dominates in winter, bringing heavy rains to the Ardennes, saturating the soil and producing mud. Although temperatures hover around freezing, the afternoon sun warms temperatures above the 32-degree mark, creating the freeze-thaw cycle.

In the early morning of 16 December 1944, in the fog and rain, three German armies (30 divisions) attacked with more

than 200,000 soldiers and 500 tanks. The Sixth Panzer Army, to the north near Aachen, would exploit the Losheim Gap. The Fifth Panzer Army attacked in the center through Saint Vith, and the Seventh Army was in the south. The U.S. 2d and 99th Divisions of V Corps in the north and the 4th, 9th, 28th, and 106th Divisions of the VII Corps in the south (with only 75,000 soldiers) met the attack. The Losheim Gap was the corps boundary. Fog and drizzle obscured the battlefield, as warm moist air pushed in from the Atlantic. The fog was so thick that Germans entered U.S. mess and bivouac areas undetected.

For a week, visibility was less than 100 meters. Artillery could not adjust fire, but bazooka teams used the concealment of the fog to advantage, hiding while German tanks passed, then firing at them from behind. Holding key terrain (the Elsenborn Ridge) in the north, the 99th U.S. Division held but breakthroughs occurred in the Losheim Gap. Bastogne, in the center sector, was also key terrain. The Germans inflicted 9,000 casualties on U.S. units in an attempt to gain this crossroads of seven main arteries. The 101st Airborne Division and the 10th Mountain Division were dispatched to reinforce. In the south, river crossing operations slowed the Germans.

The Germans took advantage of the poor weather and rugged terrain for concealment, but their undoing was the effect of the weather on the ground and hence on their ability to move. The heavy snows began to melt, creating quagmires in the fields and totally eliminating cross-country movement. Tanks caught in the muddy fields sank up to their turrets in some cases. Roads were still slick with ice, which further complicated movement. Rivers swelled, making crossings dangerous. Additionally, the Siberian high pressure, dominant farther to the east (in Germany) brought snow that slowed resupply operations. It then brought cold and clear air west, displacing the warmer front on 23 December and allowing 294 Allied sorties to be flown, destroying German supply trains and combat equipment as well as bringing needed food and ammunition to U.S. soldiers. As the ground solidified, Patton's Third Army reinforced, moving 120 miles in seven days. Air strikes continued for another five days, and Allied air superiority took its toll. On the 28th a subsequent warm

front again changed conditions, but the weather cleared again on 3 January 1945, by which time the battle was over and the Allies were headed for the Rhine River.

These quick frontal changes and the associated freeze-thaw cycles are the menace the temperate regions present to combat operations. The REFORGER (return of forces to Germany) exercise in 1987 serves as yet another example. The exercise was scheduled for February, a time when the Siberian air moves into Germany, freezing the ground solid (ideal for training). The exercise began with great success, but after a few days a warm front from the Atlantic pushed across western Europe and into the heart of Germany. During the night a thick fog developed and the ground turned soft. By morning, tanks and trucks had sunk deep into the dark rich soils of the agricultural fields and in the woods. Trafficability was so bad, and so many vehicles were mired in the mud, that the exercise was terminated.

Both weather and terrain conditions can easily be overlooked in the temperate regions because they are not as life-threatening and severe as in the other climatic regions. But as far as combat operations are concerned the effect of these environmental influences can mean the difference between victory and defeat.

Effects on Support

Logistics operations are less affected by environmental factors in temperate regions than in other climatic areas; nevertheless, the uniqueness of the weather (the seasonal and daily changes) requires certain support considerations that are not always necessary in other climatic areas.

Logistical support for military operations involves the type and quantity of supplies and equipment required, establishing supply bases, transporting and storing the supplies, and finally distributing the supplies to soldiers and units.

In temperate regions the types of supplies required vary with the season and the rapid changes in weather. The supply system must stock clothing and equipment for both warm and cold weather. Wet-weather equipment is also required, as is regional camouflage. Stocking supplies to accommodate the weather changes obviously increases the quantities to be procured, stored, and issued. The workload for logisticians, therefore, is multiplied. Repeated issue and turn-in procedures are complex and time-consuming. One advantage is that there is no need for specialized equipment as in cold and hot regions. Standard issue equipment and supply specifications are well within the ranges of weather conditions in the temperate region. Although the terrain can be a challenge, the equipment to provide mobility, countermobility, and survivability is also standard issue.

Selecting and establishing supply bases is far easier in temperate regions, because these regions have well-developed transportation and materiel handling facilities. Major ports and urban centers abound, each with numerous and varied transportation hubs and storage facilities such as warehouses and refrigeration units. The requirement to build facilities is therefore far less than in cold or hot regions, where the necessary infrastructure does not exist.

Transportation in the temperate regions is also a lesser problem. Road networks are dense with alternate routes available; rail connections are common with larger rail yards and more rail cars available; numerous airports connect almost all medium-sized cities; river and coastal shipping is well developed; and pipeline density is significantly higher.

Because battles occur in both the flat plains and the mountains, near settled areas and at more remote locations, distributing supplies and equipment is the biggest challenge for logisticians. The U.S. Army can be confident that the needed supplies will arrive on time in a temperate region battle area. Getting the items to the right unit and to the individual soldier is then a matter of careful planning, coordination, and supervision by commanders and logisticians on the ground.

Maintenance support is also easier in temperate regions. The U.S. Army in Europe instituted "the village concept," in which support (such as maintenance) is based in the towns and villages, making use of hardstands and existing garages. This obviously does not preclude the use of field maintenance sites, but dry, concealed, well-lit facilities that are often available are preferable. Medical support is also appreciably easier in these built-up areas.

The rapid changes in weather that can reduce visibility and mobility must be considered during planning. In the backward planning sequence, time should be allowed for units to prepare for unforeseen contingencies. It takes time to adjust to a sudden snowfall, a thick fog, or a mud-producing thaw. Support planners who allow extra time in consideration of the weather and terrain effects will get the support where it is needed on time, accomplishing their mission and permitting the combat elements to accomplish theirs.

The environmental influences of temperate regions on military operations may well be dominant, just as they are in other climatic regions. In the temperate regions, it is not so much extreme conditions that complicate and disrupt operations but rather the sudden changes in conditions. The U.S. Army has considerable combat experience in the temperate regions of the world. The decades of training in Germany and at installations in the southeastern United States have prepared soldiers and units for combat in this environment. Only a few years ago it seemed unlikely that a war involving the United States would break out in this climatic region, but with the victory in the cold war, traditional animosities have surfaced and have again brought armed conflict to the region. The U.S. Army may be the only viable force that can restore order; therefore, training and readiness are essential to success, and an appreciation of the environment and its effects is the first step.

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TRAINING NOTES



Infantry Gunnery Training Program

STAFF SERGEANT PHILIP R. ALBERT

Despite any technological advantage our armed forces may have over an enemy, success still hinges on the actions of rifle squads and platoons in close combat—on their ability to react to contact, employ effective suppressive fires, maneuver to a vulnerable flank, and fight through to destroy or capture the enemy. Our infantry rifle forces—including airborne, air assault, Ranger, light infantry, and dismounted Bradley infantry—therefore have a critical need to sustain their gunnery proficiency.

The infantry training environment must be realistic and demanding, and the training must challenge soldiers to master all infantry tasks, both individual and collective. It must also constantly remind them of their mission and the physical and mental toughness that is required of them.

The Berlin Brigade has developed a new concept in infantry marksmanship training called the Infantry Gunnery Training Program. The program—now being tested and implemented in the brigade as well as in the 3d Battalion, 325th Infantry in Italy—is cohesive and progressive, similar to tank and Bradley gunnery. The gunnery tables have specific training events and gates that take infantrymen from individual weapon

familiarization to a platoon live-fire maneuver exercise.

A key component of the gunnery program is the squad engagement training system (SETS). SETS is a multipurpose device designed to support the indoor training of squad-sized units on basic and advanced rifle marksmanship as well as fundamental tactical engagement skills. The device uses the latest in videodisc-based, synchronized wide-screen image projection, hit detection laser and micro-computer technology to provide a variety of target arrays; courses of fire (including several qualification courses); and tactical engagement exercises.

Once an exercise is selected, SETS displays proportionately correct targets on a screen. These targets are engaged with laser fitted, modified M16A2 rifles, M249 and M60 machineguns, and M203 grenade launchers that provide the recoil and sound of weapons firing live ammunition. SETS provides both on-screen and printed feedback for evaluation and after-action review.

Table I, Preliminary and Basic Marksmanship Instruction. This table provides infantrymen with preliminary and basic marksmanship instruction on the M16 rifle, M203 grenade launcher, M9 pistol, AT4 light antiarmor weapon,

M47 Dragon, and M249, M60, and M2 (.50 caliber) machineguns. The trainers include team leaders, squad leaders, and platoon sergeants. Rifle training includes shot grouping and zeroing and incorporates the use of the Weaponeer training device. Machinegun basic marksmanship instruction includes preparatory training, 10-meter and field zeros, and a basic live-fire course.

Table II, Rifle Qualification. This table helps small-unit infantry leaders produce infantrymen who qualify expert on their assigned weapons. Rifle qualification is conducted on an Army standard 300-meter pop-up record fire range and includes firing in chemical protective gear and at night. Machinegun qualification includes 10-meter and transition range qualification as well as firing in protective gear and at night.

Table III, Advanced Marksmanship Instruction. This advanced instruction—led by small-unit infantry leaders—consists of tactical marksmanship training and field target firing courses. The goal is for infantrymen to apply the fundamentals they have learned to acquire, engage, and hit targets in a tactical environment. During periods of both good and limited visibility, infantrymen engage target arrays depicting the



enemy formations they may confront on a battlefield.

Table IV, Fire Team Practice Qualification. This practice qualification, using SETS, provides the initial link between individual and collective tasks. The goal is to develop fire team leaders, refine individual skills, and practice collective battle drills to build an aggressive and capable infantry fire team. This table, which consists of day, night, and NBC phases, evaluates a fire team's ability to hit stationary and moving targets.

Table V, Fire Team Qualification. This qualification uses a scaled 50-meter live-fire range. The goal is to produce a qualified and combat-ready infantry fire team that has refined and integrated individual tasks, collective battle tasks, and infantry leader skills. Table V also evaluates a fire team's ability to conduct tactical operations such as *prepare for combat, move tactically, maintain operation-*

al security, attack, defend, react to NBC attack, and consolidate and reorganize.

The AT4 is incorporated into this event using the 9mm subcaliber tracer round and stationary and moving scaled armored vehicles.

Table VI, Squad Practice Qualification Using SETS. This qualification uses SETS to develop squad and fire team leaders, refine individual gunnery skills, and practice squad battle drills to build an aggressive and capable infantry squad. This table, which consists of day, night, and NBC phases, evaluates a rifle squad's proficiency in emplacing weapons, designating sectors, executing fire commands, and engaging stationary and moving targets.

Table VII, Squad Practice Qualification on Scaled 50-meter Live-fire Range. The goal of the table is to produce a qualified and combat-ready infantry squad that has refined and integrat-

ed leader warfighting skills, individual tasks, and squad battle drills. This table evaluates a squad's proficiency in both gunnery and maneuver tasks such as *prepare for combat, move tactically, maintain operational security, attack, defend, react to NBC attack, and consolidate and reorganize.* The AT4 light antitank weapon is incorporated into this event using the 9mm subcaliber tracer round and stationary and moving scaled armored vehicles.

Table VIII, Squad Qualification Gate. This qualification gate, conducted on a live-fire maneuver range, combines gunnery and maneuver and evaluates a squad's proficiency in conducting selected live fire tasks. Also evaluated are ARTEP-MTP tasks such as *prepare for combat, move tactically, cross a danger area, maintain operational security, and consolidate and reorganize.*

Tables IX and X are being developed as a scout platoon practice qualification and live-fire qualification.

Table XI, Platoon Practice Qualification. This table is designed to evaluate a rifle platoon's ability to successfully complete selected ARTEP-MTP tasks using a force-on-force opposing force (OPFOR) scenario and MILES equipment. The goal of this table is to refine the skills of the platoon leader as well as the squad and fire team leaders, validate platoon drills and SOPs, refine individual warfighting skills, and incorporate M60 machineguns and Dragons to build an aggressive and combat-ready infantry platoon.

Table XII, Platoon Qualification. This is the culminating event of the infantry gunnery training program. It combines gunnery and maneuver on a live-fire range and is designed to evaluate a platoon's proficiency in conducting selected ARTEP-MTP tasks. The goal is to evaluate small-unit leader skills, platoon drills, individual and crew-served gunnery, and selected tactical ARTEP-MTP tasks.

A key component of the gunnery training program concept is the infantry master gunner. He is the subject matter expert on all organic infantry battalion weapons and the commander's primary

advisor on all aspects of gunnery training, ranging from individual weapon proficiency to the platoon live-fire exercise of Table XII. Like the master gunners in tank and Bradley units, infantry master gunners are found at company,

battalion, and brigade levels.

The infantry gunnery tables provide the cohesive and progressive training program that is needed to sustain the proficiency of infantry units and ensure their combat readiness.

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Using Deception Techniques

CAPTAIN EDWARD R. WARD

The 82d Airborne Division recently completed an exercise in the Battle Command Training Program (BCTP), in which commanders successfully used deception to gain a significant advantage over the opposing force (OPFOR). Although this was a computer exercise for corps, division, and brigade staffs, the lessons learned from it can also be applied to any size unit and to real-world tactical situations.

During the BCTP Warfighters simulation, a commander meets an opposing force (OPFOR) that is as dangerous an opponent as he would face at any of the maneuver training centers. Like the OPFOR at the National Training Center or the Joint Readiness Training Center, this OPFOR intimately knows the terrain and the best way to fight on it. Since the BCTP OPFOR is a free-play, thinking enemy, however, he can be deceived. Deception can paralyze his command and control functions and cause him to misplace his assets.

Along with the 82d Division staff elements, other participants in this exercise were the staffs of the XVIII Airborne Corps and the 82d Division's three brigades plus the 194th Armored Brigade (Separate). The 101st Airborne Division was played notionally.

The XVIII Corps deception plan was to make it appear that the 82d Airborne Division was the main corps effort in the attack. To accomplish this, the 101st

Division launched the main attack 24 hours after the 82d Division. During that 24-hour period, the 82d had priority of corps assets.

The 82d Division's deception plan not only supported the corps plan but went beyond it by implementing a division-level plan to deceive the OPFOR as to the planned location of the division's main attack. The 82d Division wanted the OPFOR to believe the main attack would be in the 2d Brigade sector in the west, when the actual main attack was in the 3d Brigade sector in the east.

The 82d built its deception plan by stacking the 194th Brigade behind the 2d Brigade. The division weighted the artillery in the 2d Brigade sector and gave the 2d Brigade priority of fires during the reconnaissance and counterreconnaissance fight. The 194th Brigade had units under the operational control of the division's 2d Brigade. The division positioned bridging assets in the west for a river crossing operation in support of the 194th Brigade. The division used most of the assets it received from corps in support of the 2d Brigade, especially during those first 24 hours. The division deception cell constructed a fake artillery battery and a fake tank company in the 2d Brigade sector. The 82d Division also attempted to conceal the location of its 3d Brigade by having the brigade's soldiers wear 101st Airborne Division patches and paint 101st Airborne Divi-

sion bumper numbers on their vehicles.

As the division began the main attack, the 194th Brigade moved east behind the 3d Brigade at H-plus-4 and assumed the main attack at H-plus-8. Additionally, the division deception plan called for a deceptive battalion-sized air drop at H-plus-3 to delay the commitment of mechanized reserves.

The division's plan to show the main attack in the 2d Brigade sector in the west was very successful; that is where the OPFOR templated the attack. The terrain in the west best supported the movement of a heavy armored force, chiefly because the only large main supply route (MSR) in the division sector was to the west. The OPFOR was looking for the positions of the 194th Armored Brigade and of the artillery as indicators of where the main attack would occur.

The first 48 hours of the fight was the reconnaissance and counterreconnaissance battle. The OPFOR located the 194th Brigade through communications intelligence interception and direction finding and a small number of human intelligence contacts. The OPFOR came into contact with the 1st Battalion, 15th Infantry, at the line of contact and saw the rest of the 194th Brigade behind the battalion. The OPFOR also saw the vast majority of the artillery positioned to support the 2d Brigade in the west, which helped convince the OPFOR commander that the division's main attack would

be in the west. The OPFOR reconnaissance did not find any engineering assets forward, which confused the OPFOR commander, who was expecting to see engineer breaching teams stationed forward. The OPFOR did find engineer assets farther north, however.

The OPFOR commander conducted an area defense. Completely convinced that the main attack would occur in the west, he heavily weighted his defense in that direction. He committed most of his units and his assets in the west, and made the conscious decision to accept the risk in the east. The only OPFOR defenses in the east were minefields, FASCAM minefields, and the counterattack force. The OPFOR commander intentionally positioned the counterattack force in the east in case the division broke through the minefields.

As the division main attack began, the OPFOR commander lost track of the 194th Armored Brigade and did not see it move to the east. The 82d Airborne Division G-2 had done a great job of templating where the OPFOR reconnaissance would be located: The 82d killed all of the OPFOR reconnaissance elements that were supposed to watch the river and destroy the bridges. The OPFOR commander failed to take into account how quickly mechanized forces could be shifted. He did not realize that the 194th Armored Brigade was in the east until the brigade assumed the main attack.

For the first 24 hours, the OPFOR commander was also confused as to the location of the 82d Division's 3d Brigade. He received numerous reports of the 101st Division in the east and could not figure out why it was in the area where he expected to see the 82d Division's 3d Brigade. At first the OPFOR commander thought there had been a boundary change of which he was unaware. He finally detected the 3d Brigade units, however, when he found their Sheridan tanks and decided that the attempt to conceal the 3d Brigade was the division's deception plan. (I believe, however, that his discovery had unintentional benefits for the 82d Airborne Division: Having "detected" the division deception, he did not look for the larger deception.)

The deception air drop to cause the

commitment of the OPFOR's mechanized reserves occurred precisely where the OPFOR commander had templated it. So that he could react to any air drop, the OPFOR commander stationed an anti-air assault force (two battalions of truck-mounted infantry and an artillery battalion) in that area. The OPFOR commander received information from his deep reconnaissance that transports were being readied and loaded. He also received reports from his aerial watchers that propeller aircraft were coming in from the east. Believing this was the air drop he had been waiting for, he dispatched his anti-air assault force to the drop zone where they found dummies with parachutes attached. (Neither the division plan nor the corps plan had called for dummies to be attached to the chutes. The plan was for the empty chutes to be on the ground as if a drop had occurred and the force had already moved off the drop zone toward its objective. Someone in the scripting cell had "read" the dummies into the plan.) After finding the dummies, the OPFOR commander still worried that a real air drop had occurred and that his forces had been lured away from it by the deception. This caused him about four hours of confusion before he decided that this was a deception operation.

The OPFOR commander later said that the deception air drop would have been more effective if it had been used along with the real air drop. As it was, the OPFOR commander was able to concentrate all of his artillery and all of his assets against the one drop site instead of having to split them between two sites.

We learned several lessons from our experience using deception during the BCTP Warfighter exercise:

Deception works. Every deception the division attempted was believed, at least for a time, by the OPFOR commander. Even the deception air drop, which had been opposed as too risky by some members of the corps staff, was at least partially successful.

It is easier to show the enemy what he already believes. Any well-trained enemy can figure out our best course of action. The 82d Airborne Division planners did a first-rate job of wargaming and

understanding what the OPFOR would be expecting. The division deception plan simply showed the OPFOR commander what he expected to see. The division did not use the most likely course of action as its actual course of action. Rather, the 82d used what the OPFOR expected to be the division course of action as its deception and chose another course for its battle plan.

Deception does not work miracles. The 82d Airborne Division correctly figured out where the OPFOR commander had templated an air drop and wanted to use a deception air drop to cause the OPFOR commander to delay committing his counterattack forces. The OPFOR commander had already decided what forces he would use against the air drop threat, and his mechanized reserves were not affected by the deception. The 82d had expected too much from the air drop deception.

Deception requires real assets. The OPFOR commander said that the deception as to the main attack worked chiefly because he did not often see deception used on such a large scale or with real assets. The OPFOR was used to seeing smaller, localized deceptions of limited duration, such as having the 3d Brigade wear 101st Airborne Division patches or the deception air drop.

Deception can give a commander an important advantage against the OPFOR in a BCTP Warfighter exercise. To be successful, however, it must be properly planned, resourced, and executed. In addition, the deception must be integrated into the operational plan; if it is treated as an add-on, it will yield no significant advantage.

In the future, our ability to execute successful deceptions will become crucial. With the shrinking force structure, future commanders may have to use deception to gain a decisive advantage over the enemy.

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The CMTC Meeting Engagement

Proper Spirit Plus Sound Training

CAPTAIN BLAISE CORNELL-D'ECHELT, JR.

At the Combat Maneuver Training Center (CMTC) in Germany, where European-based U.S. Army battalion task forces strive to train at least once a year, NATO missions determine the training objectives. Every battalion that trains at the CMTC therefore performs a movement to contact—more accurately, a meeting engagement.

Without question, the meeting engagement is one form of the tactical offense in which every unit should be proficient. It involves reconnaissance, security, hasty defense, and hasty attack—all of which significantly affect company level training. Because the CMTC offers the only opportunity for most battalions to maneuver as cohesive units, many units have developed “play books” or detailed plans and graphics for the way they will fight. This preparation is a result of the overriding desire to win, as well as an unfortunate drawback of the limited maneuver space at the training area; with so few mobility corridors, it is fairly simple to develop a number of courses of action. Yet the opposing force (OPFOR) still tends to overwhelm the rotating units. The OPFOR is familiar with the maneuver box and consistently tends to outmaneuver the training units because of its experience in numerous rotations. But the fact is that the OPFOR also makes mistakes, gets lost or stuck, loses communications, and experiences all of the other problems associated with a heavy unit maneuvering in close terrain.

The meeting engagement, as fought at the CMTC, is usually a traumatic ex-

perience for the soldiers of a task force training there. It is their first fight against the OPFOR, and they are generally not disposed, mentally or physically, to fight to win. Many factors contribute to the typical task force's failure to beat the OPFOR. In this article, however, I want to focus on the mind-set of the task force before its units cross the line of departure, and on what factors affect soldiers' attitudes toward fighting the meeting engagement.

CLARIFY

First, let's clarify some terminology and tactical doctrine: Field Manual (FM) 71-2, *The Tank and Mechanized Infantry Battalion Task Force*, tells us that a meeting engagement is the result of a movement to contact. It is the first contact made against a moving or stationary force when the task force is not yet completely deployed. The goal is to overcome the enemy before he can react, and to do this the commander “keeps his force in a position to maneuver....”

A reminder about maneuver as the dynamic element of combat power: We move forces in relation to the enemy to secure or retain positional advantage. FM 100-5, *Operations*, outlines criteria for success in a meeting engagement: The commander must maintain the initiative, surprise the enemy, maneuver without becoming decisively engaged, and generate, focus, and sustain overwhelming combat power. Hasty attacks are usual-

ly necessary to overcome enemy attempts to concentrate or establish a defense.

What FM 71-2 offers under the heading of the meeting engagement are options for the commander to consider: bypass, hasty ambush, hasty attack, and defense. Only when you read about a hasty attack against a moving force do you gain an appreciation for the need to retain the initiative: *When two moving forces converge, the side that wins is normally the one that acts fastest and maneuvers to positions of advantage against the opponent's flank.*

The problem is that a task force at the CMTC does not usually maneuver. Almost without exception, the TF plan is to race to the critical terrain intending to trap the OPFOR. Naturally, the OPFOR—knowing the terrain far better—does not allow itself to be trapped, and usually beats the task force to that critical terrain feature anyway.

Because the task force usually plans only to defeat the OPFOR advance guard from hasty defensive blocking positions, when the task force maneuver elements are forced to react to contact, they have no real concept of how and where to maneuver to achieve positional advantage. The task force commander can only react to the enemy, who has now seized the initiative.

A TF commander can negate all of this, however, by designing—and practicing—an aggressive, maneuver-oriented hasty attack. While the concept itself is simple (being nothing more than an am-

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plified react-to-contact drill), the difficulty lies in seeing the battlefield and synchronizing assets to preserve the force and destroy the enemy.

Compounding the problem for the task force and the team commanders is the nature of the CMTC terrain, which prevents units from actually seeing or supporting one another. These leaders also need to understand the advantages that can accrue to the task force by virtue of the OPFOR's echelonment of its units, even its advanced guard formation.

The approach of a sample task force (typical of many I have witnessed) will help me explain:

The task force is balanced with two tank teams and two mechanized infantry teams. Although the scout platoon is equipped with M3 Bradleys, maintenance failures have decreased their number from six to four. The task force mission is to conduct a movement to contact to destroy an enemy advance guard battalion and, on order, to establish a hasty defense.

The commander's intent is stated as follows:

Defeat an enemy advance guard motor-

ized rifle battalion (AGMB) in an aggressive and violent movement to contact. Scouts lead, conducting a rapid forward screen focusing on key terrain, named areas of interest (NAIs), and possible enemy locations. The task force moves in a diamond formation with company teams conducting coordinated, swift movements, destroying the combat reconnaissance patrol (CRP) and forward security element (FSE) between phase line (PL) X-ray and PL Yankee and destroying the main body between PL Yankee and PL Zulu. Success is the complete isolation, suppression, and destruction of the enemy while maintaining 70 percent combat power to conduct hasty defense operations along PL Yankee.

While still in its assembly areas, the TF is attacked by a non-persistent chemical agent. The scout platoon, already forward of the TF manning a screen line, goes to mission oriented protective posture (MOPP) 4 and begins moving on the platoon's "rapid forward screen." The platoon, with only two sections, is still expected to screen a zone six to eight kilometers wide. Ten minutes after the scouts begin their forward screen, Teams

A and B move out, with Team C following ten minutes behind. Although Team C, the advance guard company, has the easiest axis for movement, it is still well behind.

Instead of a diamond formation, the TF is initially in a V-formation until the TF commander directs Team A to hold until Team C picks up the lead. By 0900 the TF has been in MOPP 4 for an hour, has traversed about five kilometers, and is still not deployed for battle. The scouts are only 500 meters ahead of the task force.

The OPFOR combat reconnaissance patrol, which deployed at 0820, consists of three BMPs and one BRDM-Rkh, moving on three parallel routes. By 0900, the CRP is close to the TF. The CRP platoon leader identifies the scout platoon and an engineer vehicle, and the BRDM-Rkh that has accompanied him has spotted Teams A and C. The CRP platoon leader cannot forward his report because his radio does not operate.

One BMP of the patrol that is not moving with the others passes by Team A in his haste to come on line with the rest of the patrol. The CRP, now well into the TF area, has not identified the task force's main body or its intentions.

The MRB commander directs the FSE—composed of three T-80 tanks, ten BMPs, three BRDM/AT-5s, and 60 infantrymen—to move down the center of the battalion axis. The FSE commander organizes a forward patrol of four BMPs to move approximately 1,000 meters ahead of the FSE. The FSE moves quickly, staying in column and on good roads, then pauses at 0930 to allow the forward patrol to clear the far side of an open area and a dangerous choke point.

An hour into the movement to contact, with no reported sightings or enemy activity, the TF commander begins pushing his commanders to move faster. The area the TF is moving into does not allow the company teams to see or support one another. The TF commander wants to get to the next key terrain feature before the OPFOR does. The TF is deployed in a diamond formation, but control is complicated by terrain that puts the three lead teams in their own mobility corridors.



At 0940 Team C's lead tank platoon makes contact with the FSE forward patrol, destroying two BMPs and continuing forward until they emerge from the choke point. The rest of Team C keeps moving, engaging the OPFOR FSE as they are caught in the open. The T-80s are destroyed. The FSE commander reports his contact and immediately deploys his attached AT-5s as well as his BMPs. The surviving BMPs of the forward patrol emplace a hasty minefield behind Team C and direct artillery fires that destroy Team C's infantry platoon. The Team C commander tries to develop the situation. Because of the BMPs' flanking movement, the dismounted infantrymen, and the AT-5s, however, he does not fully grasp what he faces. The ensuing engagement costs him seven of ten M1s, but he still controls the choke point, and the enemy has only four BMPs and the AT-5s with which to contest it.

As soon as Team C reports contact with the T-80s, the TF commander knows he is in contact with the FSE. He orders Team A to establish a blocking position southeast of Team C, while Team B is brought forward to establish a support-by-fire position to back up Team C and reinforce Team A. Team B (mechanized) in the north, separated from the task force by a ridge line, is ordered to work the north flank of the TF zone, eventually establishing an observation post overlooking avenues of approach leading into the Team B area. These dispositions are complete by 1030.

The MRB commander, not sure about the TF's deployment, orders a quick reconnaissance of a covered route south of the FSE on which he can maneuver the main body. Receiving a report that the route is clear, he launches his two remaining motorized rifle companies (MRCs) in column formation at 1020. The lead OPFOR company identifies Team A at about 1040, deploys and kills four M1s and five M2s while losing three tanks and seven BMPs.

As this engagement takes place, the trail OPFOR company (MRC 1) continues on a deep envelopment into the task force rear. After rendering Team A ineffective, the lead company (MRC 3),

breaks contact and follows MRC 1. Transitioning to a combat line formation, the MRB (-) turns and sweeps north behind the task force.

Such an experience would, of course, be disastrous for this task force, but no single element has contributed to the failure. Most of the task forces that train at the CMTC, in fact, experience some of the same deficiencies:

- Incomplete intelligence preparation of the battlefield (IPB); no offensive reconnaissance and surveillance (R&S) plan.

- Failure to relate scheme of maneuver to courses of action.

- Insufficient refinement of FS targets.

- Inability of the tactical operations center (TOC) to synchronize fires with maneuver.

- Incomplete picture of the battlefield.

- Poor radio net discipline and virtually no cross-talk between commanders.

What these task forces need to do is to refine the thought processes of the staffs during the planning stage so that they can make the most of their capabilities and capitalize on the weaknesses of the OPFOR advance guard formation.

The OPFOR View

The OPFOR at the CMTC expects the meeting engagement to be a normal function of all combat operations. As a result, it has a specific doctrinal methodology for winning a meeting engagement as reflected in its echelonment of forces. Each echelon has a specific function, and its organization reflects the task it will perform. An MRB in an advance guard formation has considerable combat capability, and the combined arms structure of the FSE and the AGMB facilitates the accomplishment of the advance guard mission.

The MRB commander conducts a detailed map study of the route of march to determine locations where he can expect to meet an advancing force and plans contingencies for each location. Supporting arms are given positions to occupy on the battlefield to reinforce long-range antitank fires. If the seizure of key terrain is possible in advance of an identified moving force, then that task is assigned as an immediate objective. In all

cases, the FSE serves as the pivot point around which the AGMB will maneuver to the flanks or rear of the opponent's main body.

Anticipating the meeting engagement as a quick-tempo operation, the MRB must maintain security, gain surprise, and retain the initiative. His detailed contingency planning allows the MRB commander to concentrate on execution instead of reaction, while the assignment of subsequent objectives ensures that subordinate elements continue to support the next higher unit mission. Continuous reconnaissance from division through battalion and the time-space echelonment of his forces allow the advance guard MRB commander to fight the battle at a time and place of his own choosing.

Some Key Analysis

The task force in this example clearly had the initiative, even well after making contact with the OPFOR FSE. In a meeting engagement, the TF commander has several options, but they all hinge upon his ability to isolate the FSE and retain freedom of maneuver.

Doctrinally, the TF must mass three company teams to destroy the FSE (a reinforced combined arms team). Many units fail during the initial engagement with the FSE, and that failure is usually a function of timing and the terrain on which the opposing elements meet. In this example, the OPFOR advance guard company team had the advantage of clear fields of fire. Although half of them were rendered combat ineffective within 90 minutes, they accomplished a key task that the task force did not exploit. Failure to understand what was really happening, and where the OPFOR was, prevented the task force from executing swift, coordinated movement. This deficiency was made worse by the TF preoccupation with blocking choke points on various mobility corridors.

Commander's Intent

While there is still much disagreement concerning exactly what a commander's intent should be, most would agree that it should be a concise statement that explains why the mission has been assigned, what results are expect-

ed, how it helps future operations, and, in broad terms, how the commander visualizes the achievement of those results.

The commander's ability to communicate his intent may be the most important, because this should be clear enough to allow subordinates to execute the mission without further orders. Doing this adequately in five or six sentences is tough, and correct doctrinal terminology must be used if the concept is to be clearly understood.

In this task force example, we see qualifying adjectives in the commander's intent that do not really clarify understanding or that may, in fact, further obscure it. What is *an aggressive and violent* movement to contact? *Isolation, suppression, and destruction* all connote different things, yet the TF commander stipulated these as conditions for success. Likewise, the scout platoon was to conduct *a rapid forward screen focusing on key terrain, NAIs, and possible enemy locations*. (These are exclusive tasks that will be discussed later.) Clearly, a commander's intent must explain his vision, and this one does not.

Reconnaissance and Surveillance (R&S) Planning

The concepts of R&S planning are reasonably well established as a basis for planning in the defense, but R&S planning for the offense is not well understood. FM 34-2-1, *Tactics, Techniques, and Procedures for Reconnaissance and Surveillance and Intelligence Support to Counterreconnaissance* (June 1991), is one of the best documents yet for counterreconnaissance. It offers three pages about R&S in the offense, and the principles, planning, and execution responsibilities as articulated in this FM are critical. It is especially important that the R&S plan be derived from the IPB process, much as the decision support template (DST) is an end product of the IPB process. The R&S plan is the mechanism by which the commander's PIR/IR questions are answered. If the plan is executed well, it gets all elements of the task force involved in helping the S-2 paint the battlefield while, most important, it focuses the reconnaissance

tasks for the scout platoon.

Scouts do not conduct a forward screen as a mission or task in the offense, but they do perform zone reconnaissance ahead of the lead company team. A zone reconnaissance can be performed effectively in a zone three to five kilometers wide, and is very time consuming if all the critical tasks are performed. The tasks can be assigned priorities using the R&S tasking matrix. This matrix facilitates the scout platoon leader's mission analysis and also serves to redirect the scouts' efforts, improving command and control from the task force to the scouts. Instead of looking at all possible enemy locations, key terrain, and NAIs, the scouts can now answer and seek specific indicators.

The concept of the operation is not supposed to be an exhaustive, step-by-step, multiphase description of the way the battle will be fought, but it must provide an idea of the way the company teams will be deployed. The maneuver paragraph should provide specific details of where units move or position and what they do there to support the task force mission. The same should apply for the remaining battlefield operating systems listed in paragraph three of the operations order. Tasks to each unit must specify what the tasks are and why that unit is to perform them. If the task force visualizes Team C destroying the FSE, this must be stat-

ed: "Tm C: (1) Destroy FSE." Likewise for the other elements: "Scouts, identify FSE, identify main body"; "Tm B, support Tm A, destroy one MRC."

Fire Support Issues

The effective fire support of maneuver requires staff coordination and integration in both planning and execution. If the staff has worked together in developing the DST, much of the fire supporters' planning work has been done, and the task force commander can be assured that the FS plan supports the scheme of maneuver. Likewise, if the staff is well-integrated in battle tracking during the execution phase, then fires will be applied when and where they are needed.

There are several key fire support issues to consider in planning, such as priority targets, high value targets/high payoff targets, and the assignment of priorities of fire.

A priority target is a planned target (a point on the ground on which the guns are laid when not firing). Although high value and high payoff targets are not really in the realm of fire support at the task force level, they affect fire support because the field artillery battalion supports the brigade.

The task force fire support officer (FSO) is concerned with providing responsive support to his task force; he does this by recommending the assign-



ment of priorities of fire, the allocation of priority targets, and the positioning of forward observers.

On the maneuver end, FM 71-2 offers broad guidance on how a commander can best use his fire support assets. The following statements are some examples:

- *Normally the screening force has initial priority of fires.*

- *When the enemy force is discovered, the security force . . . adjusts fires on the enemy . . . the screening force places fires . . . on forces maneuvering against the main body.*

- *Priority of fires is shifted to the advance guard once it is committed.*

- *Priority targets and FASCAM [artillery-delivered minefields] are allocated to the security force and the advance guard.*

- *Mortars are placed OPCON to [under the operational control of] the advance guard.*

- *Priority of support is to maneuvering elements.*

Although these statements are somewhat broad in their wording, we expect our fire support to do a lot. What we should consider is that a detailed fire plan target list may not be very current once units are in contact, and that quick fire planning will be the norm.

The decision about priority of fires is not difficult. Obviously, we want the advance guard company team to have that advantage, but how quickly can we shift it to the scout platoon when its soldiers have identified the AGMB? If we assign priority targets, where should they be? Where can we expect the FSE? Or the AGMB? Perhaps we can call the AGMB a high-value target: as soon as it is identified, all fires are shifted to neutralize or suppress it. Clearly, fire support in the meeting engagement is a point that requires a very clear commander's intent and well-established limits for its use.

Synchronization and Command and Control

Of all the functions, synchronization and command and control are the most difficult to accomplish, regardless of the mission. Synchronization is more than just the timing of the application of combat power; it is the sum of the command

and control process, staff integration, battlefield reporting, and the commander's decision making. It is the term we assign to the task force commander's instincts about when to strike. Because we cannot describe—or account for—the right *feel*, we try to ensure that the task force commander gets the information he needs to make the right decision. It is therefore essential that the staff and the subordinate commanders understand their commander's intent.

The task force commander must train his staff to provide the information and support he needs to make his decisions. They must recognize which elements of the battlefield are critical in influencing the commander's decisions during a meeting engagement as well as what aspects of the OPFOR the staff should focus on to ensure that they don't miss any opportunities. The obvious points are identifying the enemy's intentions, keeping the commander apprised of friendly unit locations and strengths, reporting exactly what is seen (as opposed to what is thought), and tracking enemy movement accurately. All elements need to "see" the battlefield in the same maneuver framework.

Common checkpoints on the map serve as good maneuver control mechanisms, and all units should report OPFOR locations in relation to these check points. Two critical radio nets are the operations/intelligence (O/I) net and the task force command net. The O/I net should be used for unit position reports and other routine traffic related to operations. The TF command net must be reserved for key information between commanders, but especially for the TF commander's orders. A great deal of discipline is required to manage this, and the TOC must do it.

The TOC must be the focal point for reports and information flow. This ensures that the staff has the key information it needs to analyze the situation and make coherent recommendations to the task force commander. Generally, once the battle has begun, most information will be relayed on the command net instead of the O/I net, which will greatly hamper command and control functions if the TOC does not enforce net

discipline.

The TF commander must not fix his attention on the initial engagement with the OPFOR's FSE; the decisive fight is the destruction of the main body. Substantial combat power must therefore be applied against the main body before it has a chance to deploy. The half hour between the arrival of the FSE and the arrival of the main body provides the only opportunity the task force has to wrest the initiative from the enemy.

It is absolutely essential for the scouts to identify the AGMB and maintain contact with it. Once they have identified the main body, priority of fires should shift to them so they can delay the enemy, or influence his choice of mobility corridors. In that limited time, there is little profit in firing FASCAM (artillery scattered mines); it is better to use those artillery tubes to delay or wear down the enemy. In that half hour, the task force commander must issue the fragmentary order (FRAGO), which will shape the battlefield through the maneuver of his company teams.

Some critical pieces of that FRAGO include where to mass direct fires, what fire control measures to use, who controls indirect fires, when and where smoke will be used, when company teams committed to the FSE fight break contact, where they will go afterward, and the limit of their advance. The FSO must ensure that an FO is tasked to move to a position to adjust indirect fires where the task force commander has decided to fight. He must maintain communication with the artillery through the scout FO or the attacking company/team fire support element so that he can mass artillery fires in conjunction with the task force assault. The TOC keeps the brigade informed and actively requests other combat assets: artillery, multiple launch rocket systems, close air support, attack helicopters, and the like. The scouts continue to maintain contact until the task force elements engage the main body; then they maintain surveillance for repositioning and to warn of previously unidentified enemy elements.

The meeting engagement is a tough fight, and it is even more difficult on compartmented terrain. Company com-

manders must be able to visualize the terrain in three dimensions and must see the action in relation to the task force commander's intent.

Good land navigation skills at all levels, an aggressive spirit with an offensive attitude, well-rehearsed react-to-contact drills, and a responsive command and control system are all essential to success.

Units that do not snatch the initiative from the OPFOR and instead choose to position themselves in a hasty defense are routinely destroyed in detail. Some units stop the OPFOR's forward momentum but are not in a position to gain a tactical advantage from it. Few, if any, units choose to conduct a hasty attack on the AGMB, yet this is the course of action that has the greatest chance of suc-

ceeding. All it takes is the proper spirit, a sound training program, and a determination to engage and defeat the enemy.

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JRTC Lessons Learned

An Airborne Platoon in the Defense

LIEUTENANT MARK R. LEWIS

During my battalion's training at the Joint Readiness Training Center earlier this year, we faced a new scenario: Perform an airborne assault on a landing strip; expand the airhead to prevent direct and observed indirect fires on the strip; and then move immediately to defend it from an armored and mechanized enemy so that follow-on forces could land.

At platoon level, this proved to be an extremely challenging mission but a highly realistic one, considering that a forced-entry airborne assault could be required in any number of locations around the world against modern or semi-modern mechanized forces.

Our mission was to establish a platoon battle position at a ford. We had to prevent the enemy armor from using the ford and push him northward into an engagement area overwatched by the company's main element. Bad weather and a rerouted airflow delayed the company's assembly, and by the time my platoon arrived at its tentative defensive position, time was short.

Rapidly preparing to defend against an enemy force that could easily outmaneuver and outshoot us presented the pla-

toon with some problems we had not faced before. The quick answer, of course, is that this preparation was a simple question of assigning priorities of work. But a drastically reduced time window and a lack of engineer support and barrier materials forced us to reconsider how we would approach this mission.

With less than 90 minutes before we could expect the first opposing force (OPFOR) T-62 tanks and BMPs in our area, we quickly established local security and put in our crew-served weapons. We would face the OPFOR with only the weapons we had carried when we jumped

in: Two M40 Dragons, six AT4 light antiarmor weapons, and 19 M21 antitank mines. My squad leaders and I understood full well that with these limited antitank assets, the amount of time we had to prepare defensive positions, and virtually nonexistent resupply for the first few days, we would have to force the enemy to fight on our terms. This meant reducing his ability to maneuver, which would force him to dismount and fight without his armor protection.

Obviously, a mechanized infantry OPFOR travels much faster and, in some ways, is more agile than the light force



an airborne platoon usually trains to fight. These differences force an airborne unit leader to reconsider some of the fundamentals he may have taken for granted. In our case, it required an analysis of the situation that was fundamentally different from the one we had made in the past in terms of METT-T (mission, enemy, terrain, troops, and time). The most significant difference may have been our understanding of time, speed, and distance management as it applied to a mechanized force.

The first consideration in fighting a mechanized force is the way its speed affects the planned use of indirect fires. The use of trigger points is critical; the time it takes for a fire mission to be cleared through the fire support net, added to the rounds' time of flight, must be computed in terms of the distance the enemy will travel between the time a fire mission is requested and the time the rounds hit. This distance must be "backed off" the target reference point (TRP) and designated a trigger point. Implied, of course, is that the trigger point is under observation, like the TRP itself, and this may mean putting a forward observer (FO) well forward of the position. Without such fire control measures, a leader accustomed to dealing with dismounted rates of movement will find his indirect fires falling harmlessly behind a fast-moving mechanized force.

The same thought process must influence the positioning of observation posts (OPs). Thinking in dismounted terms, I had placed my early warning out as I had been trained to do and found that, just as the soldier in the OP was completing his warning transmission, the enemy was upon us. An OP against a mechanized force must be placed much farther out in front than is adequate against a dismounted threat. The OP must also be given a hide position to allow the enemy to pass over it while the soldiers wait out the battle. Obviously, the soldiers manning it cannot race back in on foot ahead of BMPs. Again, having an FO with the OP will help.

Engaging the enemy at the maximum effective ranges of the platoon's weapons is not as effective as it is against a dismounted enemy, particularly when few

antiarmor assets are available. Using his mechanized force's inherent speed and agility, the enemy can quickly close the distance between the extreme weapon ranges and the platoon's close-in defensive measures before dismounting.

An airborne defender—in case he is unable to fix the mounted enemy effectively with his direct fire—must pay close attention to the preparation of alternate and supplementary fighting positions. If a mechanized enemy can maneuver on a platoon battle position before he dismounts, he can certainly render a planned defense ineffective. Counteracting this ability requires a flexible defensive posture. Even when preparation time is short and actual positions cannot be built, subordinate leaders still need to know how, when, and where to displace so they can react to the unexpected. All the soldiers must rehearse the occupation of alternate and supplemental positions so they understand how to shift in a rapidly changing situation.

When the necessary antiarmor weapons are available, several two-man hunter-killer teams can contribute to the platoon's flexibility in the defense. These teams rely upon concealment and covered escape routes to the next firing positions, where antiarmor weapons are cached, ready to be fired. Firing on the enemy from the flanks of his route of march can wear him down and fix him, forcing him to turn into the planned engagement area. Hunter-killer teams must avoid decisive engagement and link up later with the platoon's main body at a pre-designated rally point.

Although the mechanized enemy's mobility limits the effectiveness of an airborne platoon's direct fire weapons, the situation may allow the platoon's antiarmor gunners to take certain measures to increase their hit probability. For instance, civilian and friendly traffic in the engagement area enables an antiarmor gunner to practice tracking in his sector. It allows him to find the points where the terrain either inhibits or aids his ability to track, and it also enables the platoon to rehearse its engagement priorities and criteria. For example, *Dragon 1 fires at the lead tank as it enters the ford, Dragon 2 fires at a specific tank only af-*

ter Dragon 1 has hit or missed, and the AT4s fire at specific BMPs. Once these priorities and criteria are clearly established, they will help ensure maximum killing power at the decisive point, with a minimum of target overkill (or worse, missed targets), and that is essential to an airborne defender when resupply is questionable and assets as valuable as antitank weapons must not be wasted.

The most important asset an airborne platoon can use to counteract the enemy's mobility advantage may be the M21 antitank mine. Each soldier in my platoon—except for the machinegunners, antiarmor gunners, and radio operators—had carried a mine when he jumped in. This mine (along with two 60mm mortar rounds for the company mortars) had greatly increased the soldier's load and had required significant planning. But what had seemed like an unreasonable burden in the intermediate staging base took on life-or-death importance once we realized external support could not reach us in time. Accordingly, our immediate priority was to establish a hasty minefield. We intended to use the mines to destroy as many enemy vehicles as we could, to fix the others so our antiarmor gunners would have a higher hit probability, and to force the enemy infantrymen to dismount so we could engage them with our direct fire weapons. In doing so, I learned the following lessons:

Infantry units have to be prepared to emplace and record hasty minefields. Field Manual (FM) 7-8, *Infantry Rifle Platoon and Squad*, describes this task and lists many subtasks for the platoon leader himself to complete. In our situation, however, emplacing the primary minefield had to be a squad mission, and the NCOs performed admirably with little guidance from me. All of the leaders in a rifle platoon must be thoroughly prepared to execute this mission. Since the promised engineer support had been restricted by the airflow and other command and control problems, infantrymen at platoon and squad level emplaced most of the minefields in our task force sector.

Using DA Form 1365-1-R to record minefields is the ideal, but at the very least a sketch of it must be made and for-



warded to higher headquarters. Additionally, the minefield should be indicated on the sector sketch the platoon leader submits to the company commander.

The NCOs in my platoon did make detailed sketches of our obstacles, but I failed to get them to my company commander before I and some of the NCOs were evacuated as casualties during the ensuing battle. As a result, some friendly vehicles and personnel that did not have complete knowledge of my obstacle plan were operating in the area after the company's defense was successful. Luckily, there were no incidents of fratricide. Given the resupply problem, however, these reusable mines had to be recovered, and the lack of a sketch made the job unnecessarily difficult.

The mines must be buried, despite the time it takes. In our haste to get the minefield established, we surface-laid our mines and had to go back and bury them as time allowed. Burying the mines proved important for several reasons: First, M21 mines are not sensitive to the touch, and if we had not had our obstacle under observation and covered with direct fire, an enemy vehicle could have dismounted a single soldier to slide the mines out of the way and clear a path. Second, although the tilt rods need only a few degrees of tilt to explode a mine, they are fairly stiff. If a vehicle contacts a rod when the body of the mine is not

securely anchored in the ground, the mine may simply fall on its side instead of detonating.

An infantry unit must plan for friendly vehicles to travel through its obstacle. There was plenty of civilian traffic through the area at the JRTC, and it is not unrealistic to expect similar situations during an actual deployment. Additionally, friendly vehicles, for one reason or another, wandered into our minefield without prior coordination. As a result, we had to station someone near enough to stop the traffic, move the surface mines out of the way, allow the traffic to pass, and then rebuild the obstacle. This seriously affected the platoon's ability to complete other work. In a real conflict, it would also demonstrate to any potentially hostile civilians in the area just how easily the minefield could be breached.

Another platoon in my company came up with a remarkably simple and effective idea. The soldiers buried mines on the sides of the road and emplaced false tilt rods in the roadway itself. Then they used a direct-fire TRP to cover the road with antiarmor weapons. In an actual deployment, this would serve several purposes: First, an enemy moving on the road and spotting the tilt rods might assume the road was mined, try to bypass it, and move right into the real minefield. Second, friendly vehicles could pass

through the obstacle with relatively little disruption. And if a civilian unknowingly drove through the obstacle, his vehicle would be unharmed; the only damage would be to a few false tilt rods. On the other hand, if a civilian driver came to a quick stop and turned around when he spotted the rods, this suspicious activity might warrant further action under the governing rules of engagement.

In today's world, it is certainly possible for a light force to be deployed to an area where it will have to defend immediately against an armored enemy while waiting for friendly heavy forces to arrive in theater, which might take days or weeks. Thus, it was not unrealistic for an airborne battalion task force to face such a situation at the JRTC, or for my platoon to defend against T62s and BMPs.

A deeper understanding of time, speed, and distance management when dealing with a mechanized enemy, and a better appreciation of the capabilities and limitations of the M21 antitank mine, can greatly increase the effectiveness of an airborne platoon in the defense.

Lieutenant Mark R. Lewis led a platoon in the 2d Battalion, 325th Infantry, 82d Airborne Division when he prepared this article and is now the battalion's S-3 Air. He enlisted in the 2d Battalion, 75th Ranger Regiment in 1984 and was commissioned upon his graduation from Georgetown University in 1991.

NTC Lessons Learned

The Scout FRAGO

LIEUTENANT COLONEL STEVEN W. GARDNER
CAPTAIN EDWARD C. ROTHSTEIN

Our experience at the National Training Center (NTC) has shown us that successful tactical operations result from good intelligence collection. And for a light infantry battalion, the scout platoon is the primary human intelligence gathering asset. Ideally, the scout platoon gathers intelligence before the battalion plan is final, transmits it to the battalion, and then provides updates as new information becomes available. The intelligence the scouts provide allows the battalion staff to validate and, hopefully, finalize their plans and conduct operations that focus friendly strength against enemy weakness.

The scout platoon insertion must take place as soon as possible after the operations order is received from higher headquarters. This early insertion may require that the scouts leave the battalion assembly area before the battalion staff has completed its planning for the tactical operation. In order to focus his scout platoon's efforts, the commander must give the platoon leader detailed guidance and a clear commander's intent for the operation. The scout fragmentary order (FRAGO) was developed to serve this purpose.

The scout FRAGO is in a matrix format that requires coordinated input and planning from all members of the battalion battle staff. The FRAGO provides key information that focuses the scout platoon's intelligence gathering. Without this focus, the platoon's effort may be wasted on gathering information that will not directly affect the battalion's operational plan.

The order is divided into several sections that provide the scout platoon with the essential information:

Task Organization. In this section, the task organization of the intelligence-gathering assets is recorded. The scout platoon rarely has a standard organization, and at the NTC higher headquarters frequently attach forces to the scout platoon or detach part of the platoon to perform brigade missions.

Situation. Weather and light conditions and enemy forces relevant to the

mission are recorded in this section. The enemy situation in the vicinity of the objective and along the routes to the objective must be addressed. The assessment of the friendly situation, in addition to friendly maneuver units, must also include elements operating near the scout platoon's area of operations—ground surveillance radar, low-level voice intercept, and other friendly scouts.

Mission. The scout platoon mission block allows the commander to give the scouts a specific mission. The scout pla-

CLASSIFICATION: _____ DTG: _____							
SCOUT FRAGO							
TASK ORGANIZATION (HQ TM, TM1, TM2, TM3, SNIPER TM, FC, ENG, GSR COIT, RIFLE SQD)							
1. SITUATION		LIGHT/WEATHER	ENEMY	FRIENDLY			
2. MISSION			BATTALION	SCOUT PLT			
3. EXECUTION			BATTALION	SCOUT PLT			
INTENT			INTENT				
CONCEPT OF OPNS			CONCEPT OF OPNS				
COMMANDER'S RISK ASSESSMENT							
CENTER MASS GRID	WIRE SIZE	MINES MARKED	OPN GRID	CREW SERVED WPNS	COMPLETE SKETCH		
VERY LOW	LOW	MODERATE		HIGH	VERY HIGH		
COMMANDER'S ENGAGEMENT CRITERIA							
DIRECT FIRE				INDIRECT FIRE			
SELF DEFENSE ONLY	TARGETS OF OPPORT	ENEMY OP'S	PRE-PLANNED TARGETS	SELF DEFENSE ONLY	TARGETS OF OPPORT	ENEMY OP'S	PRE-PLANNED TARGETS
NAI's	OBSERVE		REQUIRED ACTION		TIME		

toon must also understand the battalion mission so that the information it gathers will support the battalion's operational plan.

Execution. The execution section contains the commander's intent for the battalion and the scout platoon. It also outlines a general concept of the operation to the extent that the staff has developed the concept. The commander's risk assessment and engagement criteria require only Xs in the appropriate blocks. If the commander wants the scouts to pinpoint all crew-served weapons, he will have to accept a higher risk of the scouts being compromised. But if he wants the scouts to send back only a center-of-mass grid location of the objective, the risk is significantly reduced. In the engagement criteria block, the commander gives specific guidance regarding the scouts. On the basis of the commander's intent for the mission, the scouts can act as *lookers* or possibly as *killers*. Although the scouts are rarely used as killers, they may act as forward observers or deploy with attached sniper teams.

NAIs. The named areas of interest (NAIs) blocks designate specific areas the scouts must reconnoiter and report on. The intelligence gathered from these

areas directly affects mission accomplishment.

Fire Support. Since the scouts may be used as forward observers, this section gives them target reference points, restricted fire areas, priority of fires, radio nets, and a codeword system that provides quick reference points to vital targets of opportunity.

Insertion/Extraction. Insertion and extraction are critical to the success of the scout platoon. Regardless of the method used (air, ground, or sea), this part of the operation must be planned in detail before the platoon is inserted into the area of operations.

Logistics. The scout platoon can sustain operations only if a sound logistical plan has been developed. The logistical section of the FRAGO requires the S-1, S-4, signal officer, medical platoon leader, and support platoon leader to develop a detailed and coordinated plan that focuses on the scout platoon mission. The matrix allows each support section to enter its information quickly and accurately.

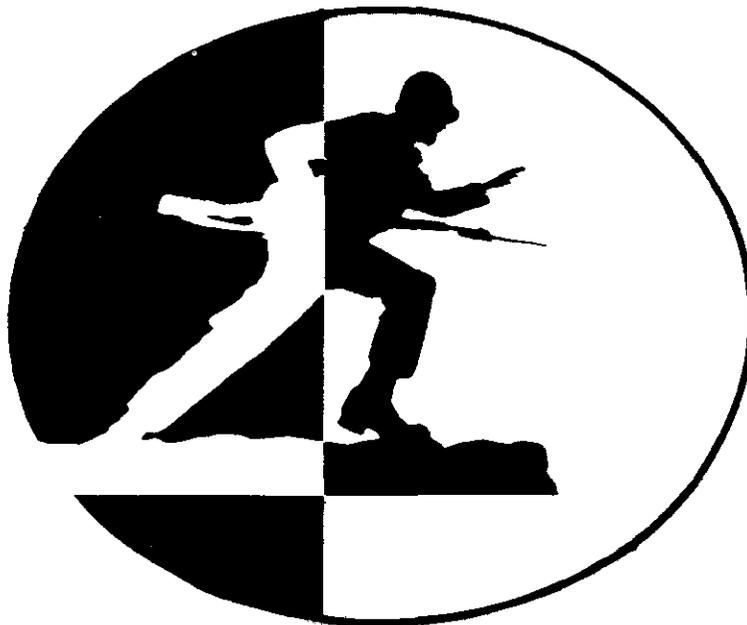
Command and Signal. This section provides the command and control measures necessary to the accomplishment of the scout mission.

The scout FRAGO gives the battalion commander and his staff a fast way to issue guidance to the scout platoon and expedite their insertion. The completed FRAGO gives the scout platoon leader the critical information he needs to focus his planning.

Although this matrix and the specific information on it may vary from unit to unit, the scout FRAGO is designed to give the scout platoon leader fast, definitive guidance. In some situations, the scout platoon's speed in gathering critical information for the battalion commander may well determine the success or failure of the battalion mission.

Lieutenant Colonel Stephen W. Gardner commanded the 4th Battalion, 17th Infantry, 7th Infantry Division, when the scout FRAGO was developed. He has served in infantry assignments in the 82d Airborne Division, the 10th Special Forces Group, and the 25th Infantry Division. He is a 1973 ROTC graduate of Tulane University.

Captain Edward C. Rothstein, a Military Intelligence officer, was S-2 of the 4th Battalion, 17th Infantry, 7th Infantry Division, when the original scout FRAGO was developed. He previously served in an air defense artillery battalion in Germany. He is a 1985 ROTC graduate of Lock Haven University of Pennsylvania.



ENLISTED CAREER NOTES



NCO-ER FEEDBACK FROM SELECTION BOARDS

After-action reports from selection boards continue to emphasize the importance of accurate, carefully prepared NCO Evaluation Reports (NCO-ERs):

- There are discrepancies between a soldier's NCO-ER and his appearance on his official photo. For example, the NCO-ER may say he meets body fat standards, but his photo does not seem to support this statement. The importance of having an up-to-date photograph in one's file cannot be overemphasized. In cases where the soldier is, in fact, physically fit, it would help if raters would include the soldier's Army Physical Fitness Test (APFT) score as a bullet comment.

- Too often, raters do not offer enough explanation for a "Needs Improvement" rating, a relief-for-cause, or a "No" in "values." Rating officials must fully explain these evaluations including specific events.

- Reviewers should make sure any discrepancies between the rater and senior rater are fully explained.

- Too often senior raters comment only on performance; they need to comment on promotion potential and schooling as well.

- "Excellence" ratings must be justified by bullet comments with specific examples that support the ratings.

- Raters should avoid meaningless clichés ("Be, Know, Do," for example); they do not say much about the soldier. Raters should also avoid using acronyms that are unique to a certain MOS and

therefore confusing to many board members.

- Duty descriptions should include such specific items as the number of soldiers an NCO supervises and the dollar amounts for which he is responsible.

ACCEPT THE RANGER CHALLENGE

With the drawdown of the Army now under way, light infantry (11B) noncommissioned officers (NCOs) in the ranks of staff sergeant and sergeant first class who want to get into Ranger units need to apply now. Ranger battalions, and light infantry battalions as well, have vacancies for highly motivated NCOs who accept this challenge.

Of the 1,350 11B infantry staff sergeants selected for promotion to sergeant first class on the 1993 promotion list, 401 were Ranger qualified.

Further information and application procedures are available from personnel services NCOs or reenlistment NCOs.

AIRBORNE RANGER VOLUNTEERS

The Army is looking for sergeants and staff sergeants to attend the U.S. Army Airborne and Ranger Courses. A soldier can attend these courses on temporary duty (TDY) and return to his unit; on TDY enroute to his next duty station; or as a reenlistment option (Option F-14, Airborne Ranger/Special Forces).

Volunteer applications must be submitted through servicing personnel offices or reenlistment NCOs.

BFV TRAINING FOR SOLDIERS IN MOS 11H

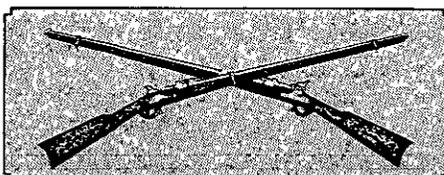
Some mechanized infantry units are already converting their Echo companies from the M901 Improved Tow Vehicles (ITVs) to Bradley fighting vehicles (BFVs). Along with this conversion comes the requirement to provide BFV training to soldiers in MOS 11H at all skill levels who are assigned to these companies.

This training will be offered at the Infantry School or through new equipment training (NET) teams. Either way, these soldiers will be identified initially with a transition additional skill identifier (ASI) of 4A until a permanent ASI is designated by the Total Army Personnel Command (PERSCOM).

DA PAM 600-25, NCOPD GUIDE

DA PAMPHLET 600-25, *U.S. Army Noncommissioned Officer Professional Development Guide*, is being revised. The revised edition will include a chapter totally devoted to the infantryman. The chapter will outline the training, schooling, and assignment requirements and opportunities at each rank and for each MOS in CMF 11.

The target date for the publication of this revised pamphlet is June 1994.



OFFICERS CAREER NOTES



TIPS ON ORB UPDATES

The assignment officers at Infantry Branch offer the following recommendations on updating your Officer Record Brief (ORB).

Duty Titles. The duty titles shown in Section IX should show the organizational echelon of a position to give a fuller, more descriptive picture; for example, *Battalion S-4* instead of *S-4*; *Company XO* instead of *Executive Officer*; and *Company Commander* instead of *Commander*.

Skills. Special skills should be in Section I. The codes for these skills can be found in AR 611-101. The accompanying table shows some of the more com-

mon codes for Infantry officers.

Awards and Decorations. The awards and badges shown in Section VIII should correspond to the orders shown on the bottom of your Performance (P) Microfiche. Send us any items that are missing through your personnel assistance center (PAC). No documentation is required for service medals (NDSM, ASR, OSR, and the like).

Assignment Considerations. If you are enrolled in the Army Married Couples Program or the Exceptional Family Member Program, a remark as to your requirements should appear in Section X. If such a remark is missing, we have no way of knowing your specific need.

DETERMINING SENIOR RATER PROFILES

Officer Evaluation Reports (OERs) are batch-processed daily at the Total Army Personnel Command (PERSCOM) as they come in from the field. All OERs from a particular senior rater that are received free of errors on a particular day are processed together.

For example, if a new senior rater rates five captains (who may have various "thru" dates or signature dates on their OERs) in the second block and sends all five OERs to PERSCOM in the same envelope (thus ensuring that they arrive together), and if they are free of errors, the profile on each OER will be the same: 0-5-0.

On the other hand, if the same five OERs arrive one after another on five consecutive days, the profile on the first OER will be 0-1-0, on the second 0-2-0, and so on.

AN OER REMINDER FOR PROMOTABLE OFFICERS

Promotable officers (except warrant officers) who are serving in positions authorized the higher rank should add a "P" to the rank shown in the grade block (Ic) on the front of the Officer Evaluation Report (OER).

This is important because the senior rater profile applied to the OER is based on this block. If a "P" is shown after the rank, the senior rater compares the officer to officers who already hold the higher rank.

For example, if the grade block reads "CPT(P)," the officer will be profiled as a major; if it reads "CPT," he will be profiled as a captain.

CODE TITLE	DESCRIPTION
3R NBC Officer	Grad of NBC school
3S Unit Air Movement Ofcr	Grad of Strategic Mobility Planning Crs
3X M2 BIFV	Grad of BIFV Cdrs Crs or NET
3Z Mortar Unit Ofcr	Grad of Inf Mortar Plt Course
4P Security Assistance	At least one yr svc in sec asst psn
4T Recruiting Ofcr	At least one yr svc in recruiting psn
5P Parachutist	Grad of Airborne Crs (but not Rgr Crs)
5Q Pathfinder	Grad of Pathfinder Crs
5R Ranger	Grad of Ranger Crs (but not Abn Crs)
5S Ranger-Parachutist	Grad of both Rgr Crs and Abn Crs
5U Air Operations Ofcr	Grad of Battle Staff Crs
5X Historian	MA in history or MMAS from CGSC
6P Master Fitness	Trainer Grad of MFT Course
7Q Training Developer	Grad of Tng Dev Crs or one yr exp

COMBINED ARMS AND SERVICES STAFF SCHOOL (CAS3)

An officer's eligibility to attend the Combined Arms and Services Staff School (CAS3) ends at the beginning of his tenth year of service. This means that, as of 1 October 1993, officers in Year Group (YG) 1984 will no longer be eligible to attend without a waiver.

To obtain a waiver, an officer in this

year group must request it from PERSCOM, in writing. The request must include justification for the request and explain why he was unable to attend during the window of five to nine years of service.

Waiver requests may be sent to Commander, PERSCOM, ATTN: TAPC-OPB-D (MS Porter), 200 Stovall Street, Alexandria, VA 22332-0411.

CAS3 CLASS SCHEDULE FOR FY 1994

CLASSES	REPORT	START	END
93-01/02	13 OCT 93	14 OCT 93	16 DEC 93
93-03/04	5 JAN 94	6 JAN 94	9 MAR 94
93-05/06	13 MAR 94	14 MAR 94	13 MAY 94
93-07/08	18 MAY 94	19 MAY 94	20 JUL 94
93-09/10	8 AUG 94	9 AUG 94	7 OCT 94

BOOK REVIEWS



MIRACLE IN KOREA: THE EVACUATION OF X CORPS FROM THE HUNGNAM BEACHHEAD. By Glenn C. Cowart. University of South Carolina Press, 1992. 136 Pages. \$29.95.

This story of the 3d Infantry Division's entry into the Korean War offers a good perspective on the role of the Marine Division in the successful evacuation of the embattled U.S. Tenth Corps from the port of Hungnam in December 1950. The author's meticulous attention to detail and generous use of supporting maps, tables, and photographs—many of them previously unpublished—give the reader a clear impression of the complexity of this operation, which was conceived, coordinated, and executed in the absence of doctrinal guidance.

The book is written in concise, unpretentious language that facilitates the telling of this remarkable story by a soldier who was there. Glenn Cowart pulls no punches in his assessment of the X Corps commander's arrogant dismissal of the Chinese Communist forces as "Chinese laundrymen," and his misinterpretation of their intentions, for which the men of Task Force Faith ultimately paid a terrible price. The danger of underestimating one's enemy is brought home clearly, as are the consequences of sacrificing honesty for expediency.

Another striking aspect of this book is the absence of parochialism. The author gives credit where it is due, showing how the evacuation could only have been accomplished as a massive cooperative effort of the U.S. Army, Marines, Air Force, and Navy, which provided the maneuver forces, air power, and ships to delay the advancing Chinese and extract more than 87,000 troops, nearly the same number of civilians, and more than 17,000 vehicles and items of equipment in one of history's greatest evacuations from a hostile shore.

The author points out that even at Dunkirk, in 1940, the rescue of nearly 338,000 men was accomplished at the cost of virtually all of their equipment, while the X Corps extracted all of its men and equipment, plus 250,000 tons of supplies.

Cowart has taken a remarkable action as his topic, thoroughly researched his subject, and

produced a superb account of the rescue of men and materiel from the jaws of the advancing Chinese Communist armies. The endnotes following each chapter provide quick reference, and the detailed index, bibliography, and appendixes only increase the book's value as a source document. *Miracle in Korea* is a worthwhile investment for any serious student of the Korean War. It deserves a place in the library of anyone who wants to understand the involvement of U.S. forces in Korea, the causes of the blunders that cost so many lives, and the truly heroic efforts of those who denied the Chinese Communists a major military and propaganda victory.

THE UNITED STATES AND WORLD WAR II. By Robert James Maddox. Westview Press, 1992. 334 Pages. Reviewed by Lieutenant Colonel Donald C. Snedeker, United States Army Retired.

The past several years have seen a resurgence in books on World War II. One reason for this renewed interest is that 1989 marked the 50th anniversary of the start of the war; another is that a significant amount of new information has become available to historians, necessitating a reevaluation of the conventional wisdom on the war. Unfortunately, too many of the newly published works have tried to revise rather than reevaluate history.

This book, however, is not revisionist history. Instead, author Robert James Maddox, a professor of American history at Pennsylvania State University, has approached the difficult problem of writing a single-volume history of the war from a more conventional perspective. The new sources available to historians since the 30-year declassification mark was reached in 1975—such as the Ultra material, newly translated and researched Japanese war documents, and the tip of the Russian war archives iceberg—are all considered and processed into this overview of

NOTE TO READERS: All of the books mentioned in this review section may be purchased directly from the publishers or from your nearest book dealer. We do not sell books. We will furnish a publisher's address on request.

the most momentous event of the 20th Century.

Professor Maddox does not ignore the more controversial issues in this volume, apparently written for use as a textbook in his classroom. Such contentious issues as Pearl Harbor, the British-American disagreement over a cross-channel attack in 1943, General MacArthur and the Navy, daylight bombing, and most of the others are discussed within the context of the overall war strategy, and the arguments on each side are presented and discussed briefly. But in virtually every case, Professor Maddox comes down on the side of the more traditional, non-revisionist school of thought. How refreshing.

Even though the book focuses on the United States in the war, the author does not neglect those aspects and theaters of the war in which the U.S. was not directly engaged—for example, the Eastern Front against the Soviet Union, the Chinese-Japanese war, and events in occupied Europe before the Normandy invasion. Compared to the pre-1975 benchmark single-volume histories of the war, this one has the advantage of Ultra and the other new information. Nonetheless, because of its academic style and purpose, it seems to lack the sweep of global strategy and tumultuous events that characterizes the volumes by J.F.C. Fuller and B.H. Liddell Hart.

This book offers a conventional, objective, and up-to-date reference on a war whose last chapter is just coming to a close.

NOT IN VAIN: A RIFLEMAN REMEMBERS WORLD WAR II. By Leon C. Standifer. Louisiana State University Press, 1992. 273 Pages. \$24.95. Reviewed by Colonel Cole C. Kingseed, United States Army.

In this World War II memoir, Leon Standifer—who was a rifleman with Company K, 301st Infantry Regiment, 94th Infantry Division—struggles to answer the questions "Why do men fight?" and "Why does a society send its youth to war?" His story is largely a personal account of courage, dedication, and loyalty. In the author's own words, it is an appeal for tolerance and the

simplicity characterized by the bumper sticker urging nations to "hate war, not the warriors."

As a member of the Army's Specialized Training Program in 1943, Standifer expected the war to end before his two-year college deferment expired. Within several months, however, he found himself in the infantry and, because of a shortage of riflemen in the front-line divisions, he was in France by September 1944.

Assigned to a relatively quiet sector in France, the 19-year-old scout experienced the full spectrum of combat, from leading his first patrol and seeing comrades killed, to suffering his own wounds as a result of friendly fire. Returning to his unit in time to assault the German Siegfried line, he witnessed the horrors of combat that he had scarcely imagined during his training at Fort Benning. In two months, Company K suffered 400 percent casualties and Standifer himself was evacuated suffering from combat fatigue.

What separates this book from the memoirs of other veterans is Standifer's analysis of why men fight. Describing combat as dull and uncomfortable but at the same time "fascinating, frightening, degrading, and exciting," he suggests that men fight for the approval of their fellow soldiers. In combat, God and Country become distant abstractions, and men fight for friends, pride, and survival. As the first scout for his rifle squad, Standifer wanted his squad to know that he was reliable, because within a few minutes he might be badly wounded and need their help. In short, despite all the rhetoric about lofty ideals and patriotic fervor, men fight for community—a community that becomes less and less the United States of America and more and more a particular squad and platoon.

The author concludes his memoirs by reflecting on war and the men with whom he fought. He hates war—as only those who take up arms and face the rigors of combat can fully appreciate—but loves the warriors. His is a fitting tribute, and *Not in Vain* should be mandatory reading for all infantry leaders who seek to understand why and how units and soldiers function in peace and war.

FIRST CALL: THE MAKING OF THE MODERN U.S. MILITARY, 1945-1953. By Thomas D. Boettcher. Little, Brown, 1992. 464 Pages. \$27.50. Reviewed by Albert N. Garland, Columbus, Georgia.

In some ways, this is a disappointing book, with the author promising far more than he delivers. His is not a particularly good history of the tremendous in-house fights surround-

ing the unification of our military services in the 1940s, and it is an even poorer history of the Korean War and the machinations associated with it.

The author, an Air Force Academy graduate, a Vietnam veteran, and now a magazine editor, divides his narrative into two roughly equal parts—the unification squabble and the Korean War. His unification narrative focuses on Secretary of the Navy James Forrestal's activities during the struggle, his forced resignation and eventual suicide, and the Navy's eventual surrender to reality. He does not slight President Truman's distrust of and distaste for the Regular Army. Strangely, he does not mention the Key West agreement that determined the services' roles and missions, an agreement still followed today.

The author's treatment of the Korean War doesn't track with his stated intentions. He spends an inordinate amount of time down in the front lines, particularly during the Chosin Reservoir operation, but never clarifies what all of this had to do with "the making of the modern U.S. military."

With the coming roles and missions fight about to be renewed, we need a better study of the past so we can be ready for the many and varied presentations that will be made, including the one that will call for a complete unification of the services, in the manner of Canada.

Still, it wouldn't hurt to read the first half of the book to get some idea of what this kind of "war" can entail, and the bibliography for further study in the secondary sources.

THE SEARCH FOR MIAs. By Chief Warrant Officer Garry L. Smith. Edited by Ed Y. Hall. Honoribus Press, 1992. 172 Pages. \$12.95. Reviewed by Dr. Joe P. Dunn, Converse College, Spartanburg, South Carolina.

Vietnam memoirs now run into the thousands and touch virtually every kind of participation in the war. This book, though, breaks new ground as the first account of the Joint Casualty Resolution Center, the formal Government agency established to search for remains and attempt to resolve the cases of the unaccounted from the wars in Indochina.

Chief Warrant Officer Garry L. Smith, a linguist in Vietnamese, participated in eight search trips to Vietnam between 1987 and 1990 during which he interviewed hundreds of Vietnamese, searched crash sites, and analyzed findings in the effort to account for individual MIAs. His narrative—a blend of institutional history, memoir, personal anecdotes, insights into Vietnam today, and

commentary—is one of the more interesting contributions to Vietnam War literature that I have read recently.

Clearly, Smith documents the full and true commitment of the U.S. government to the quest for accountability, the honorable work of the Center, the difficulties of resolving these issues so many years later, and the innumerable scams constantly at play over the issue. He is candid in his belief that the Vietnamese are forthright in their commitment to a resolution and that no credible evidence exists that Americans remain alive in Indochina. He admits, though, that some of his colleagues are convinced of the possibility.

Whatever one's feelings may be on the MIA issue, this is a good and quite captivating book that anyone interested in the Vietnam War and its aftermath would profit from reading.

THE FRENCH FOREIGN LEGION: A COMPLETE HISTORY OF THE LEGENDARY FIGHTING FORCE. By Douglas Porch. HarperCollins, 1991. 728 Pages. \$35.00. Reviewed by Leroy Thompson, Manchester, Missouri.

Generally, books on the French Foreign Legion fall into three categories: overview histories; individual narratives of the writer's Legion service, often of a negative nature; and works that perpetuate the myth of the Legion. What is interesting about Porch's work is that it contains elements of all three. As a result, it is highly readable, yet well-documented with scholarly notes and explanations of sources. It has something to offer to the reader looking for a first book on the subject and also to the one who has read dozens.

The author is a specialist on the French Army who has access to Legion documents that is rarely granted to those outside the Legion. By combining official sources with journals, published and unpublished, Porch manages to give diverse views of the same operations to show the Legion as a functional fighting force, one that has enjoyed successes and failures, frequently at the same time. Porch takes an especially interesting approach to the myth of the Foreign Legion, at times debunking, at times showing how the Legion consciously created its own history and mythology.

Nevertheless, a reader finishes the book with at least some of the traditional Legion images intact—heavy infantry slogging across the dunes, last-ditch stands against heavy odds, lonely fortress outposts, society's outcasts molded into an elite fighting force. Porch, in fact, chooses to end his book at the point when the Legion left Algeria, viewing

that as the end of the traditional Foreign Legion.

The overall organization of the work is *chronological, covering campaigns from its formation in 1831 until the end of the Algerian war of independence. Amid the chronological history—such issues as the extent to which desertions were really a problem, the Legion's own caste system, and how well displaced ethnic, political, or religious groups have been absorbed by the Legion—the final chapter, "The Balance Sheet," may be the most interesting as it attempts to reconcile the myth of the Legion with its reality and draws conclusions about its true effectiveness as a fighting force. Although the remainder of the work is also useful, I would recommend it for this chapter alone.*

NO TURNING BACK: THE BEGINNING OF THE END OF THE CIVIL WAR, MARCH-JUNE 1864. By Don Lowry. Hippocrene Books, 1992. 576 Pages. \$24.95. Reviewed by Major Don Rightmyer, United States Air Force.

This book is the first in a series of four that the author intends to publish about the entire Northern campaign led by newly appointed Lieutenant General Ulysses Grant from March 1864 until war's end. By "entire Northern campaign," Lowry means the multiple military efforts beginning in early 1864 from Virginia to the trans-Mississippi region that Grant as commander-in-chief planned and directed to bring the war to a victorious conclusion for the North.

This volume is organized on the style of E.B. Long's *Civil War Day-by-Day*, covering what happened in each theater of operations on a specific day before moving on to the next day's major events. Although this style of presenting the story will not appeal to all readers, it does provide a good appreciation for the effects of events occurring on the Red River of Louisiana, the road to Atlanta, and the battlegrounds of Virginia on the same day.

Lowry doesn't expect the reader to approach his book with a prior knowledge of what occurred in the war before March 1864. In fact, the first few chapters give a fairly concise summary of the war's progress from Fort Sumter until Grant's promotion to be the Union army's senior general. Most of the volume deals with how he planned and coordinated the beginning of offensives designed to put the South under pressure at several points simultaneously. Dominating the narrative is the period of March to June 1864 dealing with the battles of the Wilderness and

Spotsylvania, Grant's movement south of the James River toward Richmond, and the initial moves in Sherman's campaign for Atlanta.

This book includes several good regional and campaign maps, but none showing the major battles discussed. The author admits in the beginning that he is only trying to provide a unique way of examining the war's last 13 months. Accordingly, his documentation is mostly from secondary sources, other than the memoirs of major participants such as Grant and Sherman. There is also an extensive list of main characters and orders of battle for both sides during the period covered throughout all theaters.

No Turning Back will not be for all readers. Those who are already fairly knowledgeable about the Civil War will find few new insights. New students of the war, however, will find it well written and a good background from which to pursue further reading and study of the war.

BAND OF BROTHERS: E COMPANY, 506TH REGIMENT, 101ST AIRBORNE FROM NORMANDY TO HITLER'S EAGLE'S NEST. By Stephen E. Ambrose. Simon & Schuster, 1992. 335 Pages. \$25.00. Reviewed by Dr. Charles E. White, Infantry School Historian.

This book is a lively, fascinating account of Americans fighting in World War II. It is a straightforward combat history of a company of heroic paratroopers, from their parachute training in Georgia to their harrowing experiences in Normandy, Holland, the Battle of the Bulge, Germany, and the liberation of the Austrian province of Salzburg.

Author Stephen Ambrose, one of the United States' best-known military historians, bases his book largely on oral histories housed at the Eisenhower Center, University of New Orleans. Ambrose conducted the first of many interviews during a reunion of Company E, 506th Parachute Infantry Regiment, 101st Airborne Division, in the fall of 1988. Over the next two years, he completed his discussions with the men of Company E. For him, it was "a memorable experience," since he had been just ten years old when World War II ended and had always "stood in awe of" the American G.I.s who won that war.

The men of Company E were citizen soldiers—the pride of America—who came together in the summer of 1942 to be paratroopers. Only one was from the "Old Army," and a few had come from the Army Reserve and National Guard. Most were typical Americans, drawn to the airborne by the

\$50 monthly bonus and a desire to be better than the other guy. They hated the martinet who trained them in the warrior ethic but later appreciated the physical and mental toughness he had instilled in them. It was this ethic that sustained them through all of the blood and carnage, the grime and filth, and the impossible demands made on their bodies. They also learned selflessness and found the closest brotherhood they had ever known. Like the generation that fought the U.S. Civil War, these men saw more, endured more, and contributed more in three years than most men see, endure, or contribute in a lifetime.

Band of Brothers is history at its best. The stories are so contemporary, especially today when the human dimension of war is so often overlooked. The men of Company E found that anything was better than letting their buddies down. As a group, the members "were remarkably successful, primarily because of their own determination, ambition, and hard work, partly thanks to what they had taken from their Army experience that was positive."

Those who seek to improve their understanding of the American soldier under great stress must read this book.

FIELD-MARSHAL AUCHINLECK. By Alexander Greenwood. Pentland Press, 1991. 338 Pages. Reviewed by Major Harold E. Raugh, Jr., United States Army.

Field Marshal Sir Claude Auchinleck was one of the most prominent British Army field commanders of World War II. He commanded forces in Norway in 1940; was twice Commander-in-Chief, India, 1940-41 and 1943-47; and was Commander in Chief, Middle East, 1941-42. In the last of these, he halted Rommel's drive into Egypt at the First Battle of El Alamein in July 1942, a fact long denied by General Bernard L. Montgomery and long ignored by historians and others.

Author Alexander Greenwood served as Auchinleck's aide-de-camp from September 1943 to the end of 1944. His biography is most interesting, although much of it has been extracted from other sources, notably John Connell's *Auchinleck* (London: Cassell, 1959). Greenwood's study makes no pretense at being scholarly or definitive, and it unabashedly idealizes its subject. This, however, is the book's primary strength, since the author shared many experiences with Auchinleck, especially after the Field Marshal's 1947 retirement. The highlights of the book are the saga of the "Auk's" long twilight years until his death in 1981 (a period not covered by Connell's book), when Greenwood frequently

visited him in Morocco, plus an appendix that includes "Some Anecdotes from the Author as Auchinleck's A.D.C."

Numerous superb photographs, many taken by the author and previously unpublished, enhance the text. The maps, however, are of a uniformly poor quality, being little more than reproductions from other books with occasional handwritten annotations. The numerous spelling and punctuation errors are also annoying to the reader.

Greenwood's story concludes:

So ends my history of a great soldier, destroyed by a politician when about to make his greatest victory. A born leader of great compassion, understanding and integrity. He was the greatest man in my life—and in many others too.

Although a "labor of love," this book is good reading for those in the Army who aspire to command—it contains numerous leadership examples worthy of study and possible emulation.

BRITISH INTELLIGENCE IN THE SECOND WORLD WAR, VOLUME 4: SECURITY AND COUNTER-INTELLIGENCE. F.H. Hinsley and C.A.G. Simkins. Cambridge University Press, 1992. 408 Pages. \$42.95, Hardcover. Reviewed by Major Richard P. Ugino, New York Army National Guard.

The authors are retired intelligence professionals and historians who were given unlimited access to the British Intelligence files required to write this book. Like its predecessors, the book assumes that the reader has a knowledge of Allied and English intelligence operations during World War II and is very thorough. The authors have exhaustively examined the records, and their book is filled with facts. They are equally expert in portraying for the reader the double battles of World War II intelligence—those against the Germans and the "turf wars" of agencies pitted against each other in the political tug and pull of the war years.

The book is excellent in examining the double-agent penetrations of German intelligence by the Allies. Readers familiar with intelligence operations will recognize such names as "Tricycle" and "Garbo," agents who were run against the Germans for almost the entire war. Here the book has its greatest value in comparing and contrasting the methods used by the Abwehr and "adopted" by MI-5 to "turn" the double agents. Those chapters are fast and fascinating reading, and these alone should be worth the price of the book. This is the first "from official sources"

treatment of all the double-agent operations that I have seen in print.

The reader will also find interesting the efforts to deceive German intelligence, especially before the 1944 Normandy invasion. This is the first book that actually plots the change in counterintelligence to deception strategy that occurred within MI-5 and the SIS beginning in 1943. Although the events are now 50 years old, it still has lessons for the modern soldier or intelligence professional.



RECENT AND RECOMMENDED
THE TRANSFORMATION OF WAR: THE MOST RADICAL REINTERPRETATION OF ARMED CONFLICT SINCE CLAUSEWITZ. By Martin Van Creveld. The Free Press, 1991. 254 Pages. \$22.95.

TERRORISM: PRAGMATIC INTERNATIONAL DETERRENCE AND COOPERATION. By Richard Allan. Westview Press, 1991. 71 Pages. \$12.85.

BITTER VICTORY: THE BATTLE FOR SICILY, 1943. By Carlo D'Este. First published in hard cover in 1988. HarperCollins, 1991. 666 Pages. \$14.95.

DECISION IN NORMANDY. By Carlo D'Este. First published in hard cover in 1983. HarperCollins, 1991. 557 Pages. \$14.95.

ON FIELDS OF FURY: FROM THE WILDERNESS TO THE CRATER: AN EYEWITNESS HISTORY. By Richard Wheeler. HarperCollins, 1991. 286 Pages. \$25.00.

ROADS TO LIBERATION FROM OFLAG 64. 2d Edition. By Clarence R. Meltesen. Oflag 64 Press (810 Gonzalez Dr., 4-D, San Francisco, CA 94132), 1990. 535 Pages \$20.00.

LOST IN ACTION: A WORLD WAR II SOLDIER'S ACCOUNT OF CAPTURE ON BATAAN AND IMPRISONMENT BY THE JAPANESE. By Dick Bilyeu. McFarland &

Company, 1991. 343 Pages. \$26.95.

EVERYTHING YOU ALWAYS WANTED TO KNOW ABOUT THE MILITARY. DIANE Publishing (600 Upland Avenue, Upland, PA 19015), 1991. 56 Pages. \$16.95, Softbound.

GORBACHEV'S RETREAT: THE THIRD WORLD. By Melvin A. Goodman. Praeger, 1991. 224 Pages. \$42.95.

THE FUTURE OF BIOLOGICAL WEAPONS. By Barend ter Haar. Praeger, 1991. 216 Pages. \$12.95, Softbound.

TO REASON WHY. By Denis Forman. Trafalgar Square (North Pomfret, VT 05053), 1992.

FATAL DECISION: ANZIO AND THE BATTLE FOR ROME. By Carlo D'Este. Published in hard cover in 1991. HarperCollins, 1992. 552 Pages. \$13.00.

U.S. MILITARY LOGISTICS, 1607-1991: A RESEARCH GUIDE. By Charles R. Shrader. Research Guides in Military Studies, Number 4. ISSN 0899-0166. Greenwood Press, 1992. 384 Pages. \$65.00.

CANADA AND NATO: THE FORGOTTEN ALLY? By Barbara McDougall and others. Brassey's (US), 1992. 81 Pages. \$9.95.

SEABORNE DECEPTION: THE HISTORY OF U.S. NAVY BEACH JUMPERS. By John B. Dwyer. Praeger, 1992. 192 Pages. \$42.95.

THE ARMY'S NUCLEAR POWER PROGRAM: THE EVOLUTION OF A SUPPORT AGENCY. By Lawrence H. Suid. Contributions in Military Studies No. 98. Greenwood, 1990. 136 Pages. \$39.95.

THE LAST OF THE REGIMENTS: THEIR RISE AND FALL. By Peter Dietz. Brassey's (UK), 1990. 271 Pages. \$48.00.

LIMA-6: A MARINE COMPANY COMMANDER IN VIETNAM. By Colonel R.D. Camp. A reprint of the 1989 Edition. Pocket Books, 1990. 331 Pages. \$4.95.

GUADALCANAL REMEMBERED. By Herbert C. Merillat. Originally published in 1982. Avon Books, 1990. 334 Pages. \$3.95, Softbound.

INDUSTRIAL PREPAREDNESS: NATIONAL RESOURCE AND DETERRENT TO WAR. Prepared by the National Research Council's Committee on Industrial Mobilization. National Academy Press, 1990. 68 Pages, Softbound.

AIR GUARD: AMERICA'S FLYING MILITIA. By George Hall. The Presidio Power Series. Presidio Press, 1990. 130 Pages. \$12.95, Softbound.

AMBUSH VALLEY: 1 CORPS, VIETNAM, 1967. By Eric Hammel. Presidio Press, 1990. 335 Pages. \$22.50.

LEADERS AND BATTLES: THE ART OF MILITARY LEADERSHIP. By W.J. Wood. A reprint of the 1984 edition. Presidio Press, 1990. 337 Pages. \$24.95.

FOLLOW ME: THE HUMAN ELEMENT IN LEADERSHIP. By Major General Aubrey S. Newman. A reprint of the 1981 edition. Presidio Press, 1990. 307 Pages. \$24.95.

GREEN BERETS AT WAR: U.S. ARMY SPECIAL FORCES IN SOUTHEAST ASIA, 1956-1975. By Shelby L. Stanton. A reprint of the 1985 edition. Presidio Press, 1990. 360 Pages. \$22.50.

THE HARPER ENCYCLOPEDIA OF MILITARY HISTORY. Fourth Edition. By R. Ernest Dupuy and Trevor N. Dupuy. HarperCollins, 1993. 1,654 Pages. \$65.00.

From The Editor

KEEPING THE STANDARD

On 7 October 1993, Fort Benning will commemorate the 75th anniversary of the establishment of the Infantry School in its present location. The precursors of the school had been at Jefferson Barracks, Missouri; Fort Leavenworth, Kansas; The Presidio of Monterey, California; and Fort Sill, Oklahoma. It was not until the closing months of World War I that the Infantry School of Arms commenced operations on its present site south of Columbus, Georgia. Within weeks of its dedication, units and activities from various Army locations began arriving at Camp Benning; first came the 740-man contingent of the Small Arms Firing School from Camp Perry, followed by a class of 100 West Point cadets. The 1st Battalion, 29th Infantry, arrived in March 1919, followed in less than two weeks by 200 officers, instructors, and students of the Camp Hancock Machine Gun School, who were also soon assimilated into the Infantry School.

But the expansion was not without its problems. With the end of World War I came the perception that further expansion at Camp Benning was unnecessary. Congress withheld appropriations for further construction and directed that the site be abandoned. Fortunately, wiser heads prevailed, and work continued—although at a slower pace—on base support facilities and the infrastructure needed to sustain the installation. Over the next two decades, Fort Benning evolved into the center for the research and development, doctrine, and training that were to be the foundation of success for the U.S. infantry in World War II.

In the years following World War II, Fort Benning was on the cutting edge of such combat developments as airborne and ranger training, airmobility, the testing of new weapon systems and equipment, and the doctrine to guide leaders in the employment of these new dimensions of combat. Even today, as we approach the turn of the century, the Infantry Center and School continue to perform these diverse missions.

Fort Benning's most far-reaching contribution during these 75 years, however, has been as a repository of institutional knowledge that fosters progress while avoiding repetitions of the failed experiments of the past. The installation's historical and archival files—as exemplified in the Donovan Technical Library—provide the documentary records to guide doctrine writers, combat developments personnel, and staff and faculty members in their research. At the same time, the collective knowledge and experience of the military and civilian work force at Fort Benning provide the continuity necessary to speed coordination, lend urgency to time-sensitive projects, and ensure that support to the field is timely, technically correct, and adequate to the needs of today's infantryman.

The significance of Fort Benning's 75th anniversary goes beyond simple longevity; it lies instead in the continuity of our institutions, in the professionalism of the men and women who have trained here, and in the incalculable effort and personal sacrifice of the installation's military and civilian personnel during the past three-quarters of a century.

Throughout our history, economic realities have forced our armed forces to confront austerity. At times, the recognition of dangers abroad has been dimmed by more immediate—and hence more urgent—needs at home. This does not mean, however, that the threat is not real, or that we will not be called upon to respond to challenges of a type and magnitude not yet imagined. It is here that the roles of the service schools—in our case, the Infantry School—become crucial; it is here that the ideals that have always guided the force must be sustained.

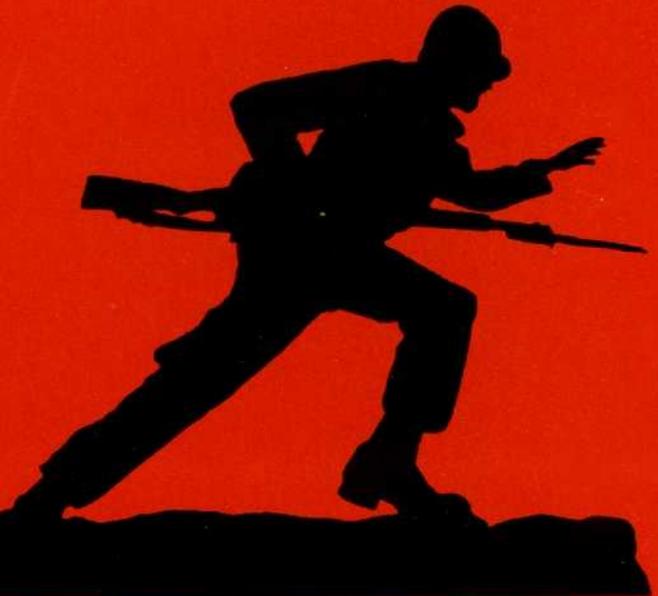
This task will certainly not be easy, but Fort Benning will meet the challenge as it has all others, by using our defense dollars responsibly, by thinking innovatively, and by putting the interests of our Nation first. The past 75 years are part of our history; we must now concentrate on what we are going to do in the future.



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