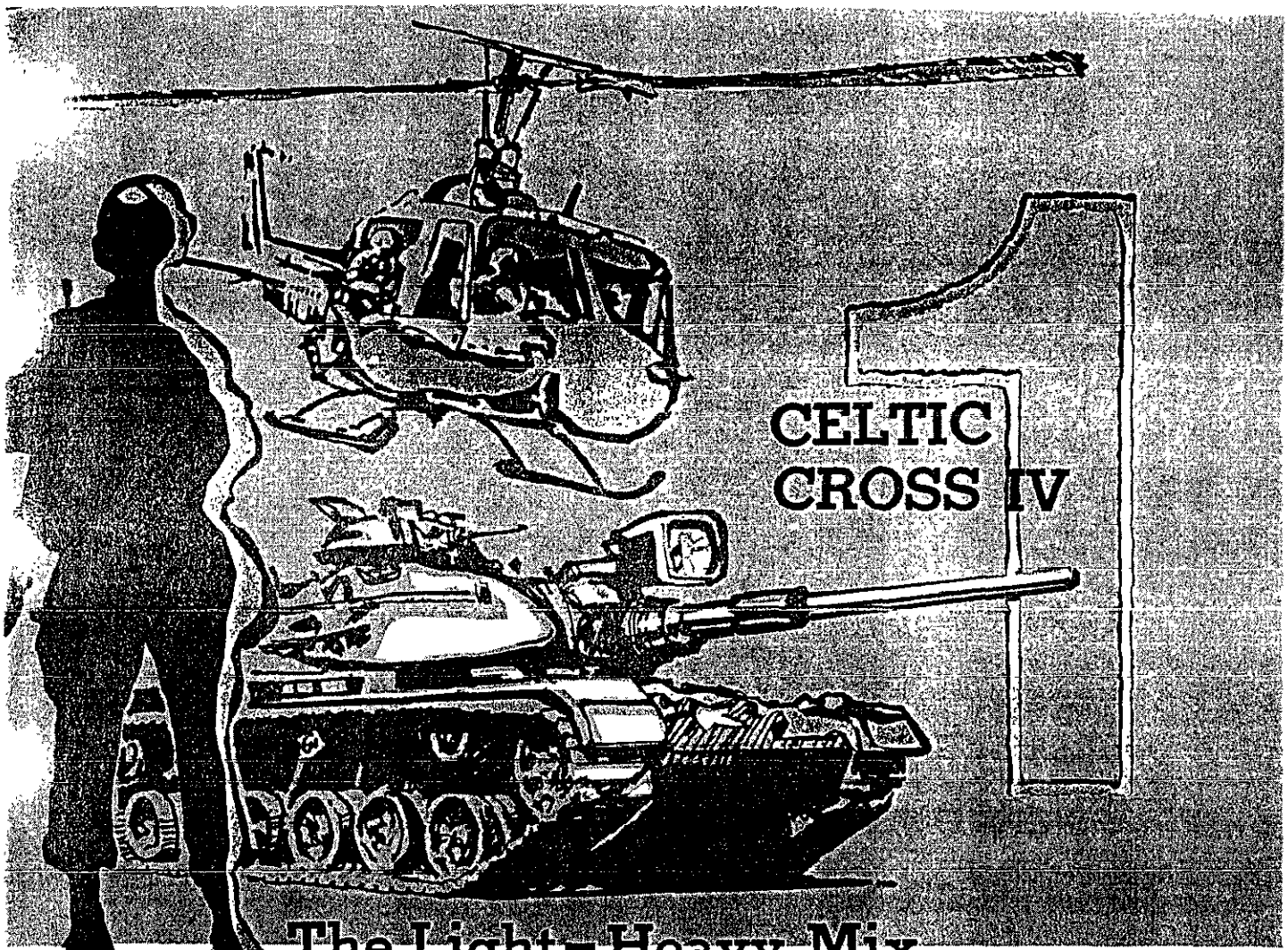


The Light–Heavy Mix

The *integration of light and heavy infantry forces in training* over the past couple of years has been much discussed. But the only examples that seem to be publicized are those from the National Training Center (NTC) in which light infantry battalions were given to heavy brigades.

In the summer of 1986, during the major exercise Celtic Cross IV, just the opposite took place: heavy units were given to a light brigade. The resulting composite task force (see box) served as the opposing force (OPFOR) against the 7th Infantry Division (Light Infantry). The exercise was specifically designed to certify the ability of the 7th Infantry Division's command and control and logistical systems to support the division and its corps augmentation package.

The versatility of the task force organization, combined with an opportunity to execute a full range of offensive and defensive missions, guaranteed that a large number of lessons would be learned about light infantry units and the light unit-heavy unit mix.

While many of the lessons learned were, in fact, lessons relearned, collectively they provide some checklists and training requirements for task organizing to fight light with heavy units and for fighting light units against such a task force. Recent lessons learned at the NTC and doctrinal discussions on the employment of the light-heavy mix on mid- and high-intensity battlefields suggest a need to document and share such information.

This article and another to follow are essentially an adaptation of the after-action report prepared by the 2d Brigade, 10th Mountain Division on Celtic Cross IV. This first article covers maneuver, command and control, and intelligence. The second, scheduled for the next issue, will cover the various aspects of brigade support.

TASK ORGANIZATION

Headquarters and Headquarters Company, 2d Brigade, 10th Mountain Division (Light Infantry)
2d Battalion, 14th Infantry
1st Battalion, 327th Infantry
2d Battalion, 77th Armor
5th Battalion, 15th Field Artillery
Company A, 1st Battalion, 67th Air Defense Artillery
63d Combat Aviation Battalion
Company B, 14th Engineer Battalion
1st Platoon, Company C, 109th Military Intelligence Battalion
4th Platoon, Company B, 9th Signal Battalion
363d Squadron (Medium Helicopters), U.S. Marine Corps
2d Forward Support Battalion

Maneuver

First, we in the brigade learned that the force must be tailored for the mission. When fighting pure, a unit should select those missions that capitalize on its unique capabilities. At the same time, opportunities to task organize at the battalion task force and company team levels must be exploited.

There were specific missions in which the light unit worked well with the heavy units and vice versa: economy of force, seizure of key terrain to facilitate offensive and defensive operations, linkup and passage of lines, infiltration attack in conjunction with heavy attack, defense of the heavy force against light infantry, defense of rear area, and coordinated attack where one of the axes of advance was in restricted terrain.

The greatest force multiplier occurred when the light and heavy forces were task organized at the battalion level. The firepower and mobility of the armor and mechanized infantry, when combined with the clearing, reconnaissance, and counterreconnaissance capability of the light infantry, significantly reduced the OPFOR's vulnerability to the 7th Division's tactics.

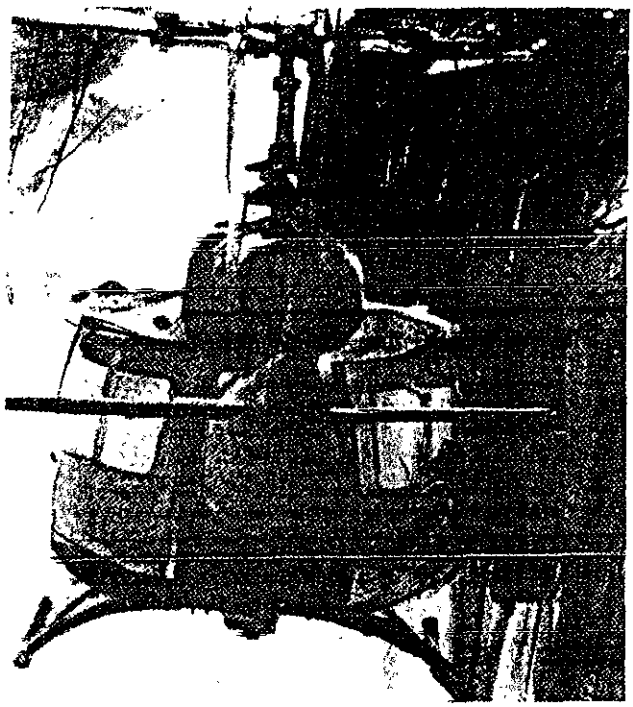
There were, of course, mobility differences between the light and heavy forces in the defense. The division's defensive scheme had one brigade committed to counterguerrilla and infiltration in the west, one brigade defending the DSA (division support area) and command and control facilities in the south, and one brigade in an antiarmor role facing the OPFOR.

The latter brigade's antiarmor defense was tied to an elaborate barrier plan that could not be fully executed because the brigade simply did not have the manpower and the transport needed to move the obstacle material forward and to emplace it. As a result, that brigade commander had to defend in depth over a large area and the OPFOR was able to mass its attacks against small elements that could only be reinforced by other footmobile units that had to travel over rough terrain or be moved by airmobile assets that were usually fully committed to other tasks. As a result, the OPFOR retained an overwhelming combat ratio for its attacks and easily penetrated the defense.

We learned from this that a defense should not be set until there is adequate intelligence and logistical support, and that the success of the defense should not be totally dependent upon a barrier plan. A light infantry unit's antiarmor defense can be defeated in detail if its positions are not mutually supporting. A battalion commander must retain a local reserve with sufficient mobility to influence the battle, and a brigade commander must have a similar force on a short string. A division commander must accept the risk and give his brigade commander who is facing an armor threat the bulk of the division's antiarmor assets.

The dependence of both forces on helicopter lift for maneuver and logistical support highlighted the need to reconsider the one-for-one substitution of UH-1 for UH-60 helicopters, which is presently planned as an interim solution for light infantry divisions.

The primary helicopter lift for the OPFOR in the exercise was 12 UH-1s from the combat aviation battalion. Because of low air density from the high temperatures at Fort Hunter Liggett, the UH-1 was limited to five passengers or 1,500 to 2,000 pounds of cargo. The lift capability of the UH-60, which the



7th Division used, was 8,000 pounds, or 13 passengers with seats or up to 25 passengers without seats.

The OPFOR conducted several successful convoy ambushes, and these highlighted the light infantry's lack of convoy counterambush battle drills and planning for air cover, coordinated fire support, and a relief force. These few successful ambushes severely degraded the division's logistical support capability. Convoy counterambush planning and drills must therefore become a major training objective and an ARTEP task.

Both forces conducted an aggressive reconnaissance and counterreconnaissance effort. The 7th Division's light infantry units are well suited for doing this at night and in periods of low visibility or in difficult terrain, but they lack the mobility and firepower to survive once they are detected (usually by thermal sights) and pursued by mechanized or armored forces. And once a light infantry force loses its reconnaissance capability, a heavy force can operate inside its decision cycle because of the mobility differential.

The general reconnaissance and counterreconnaissance scheme used by the 2d Brigade in the defense featured three operational belts. The first belt, out to one kilometer (depending upon the terrain) from the units' defensive positions, was for local security patrols and LP/OPs. These security patrols could be combat or reconnaissance patrols, but a patrol leader had to be prepared to attack or ambush an enemy force in this belt and to detach a reconnaissance and security element to maintain observation of the enemy.

The second belt, from one to five kilometers, was for counterreconnaissance patrols. Inside this belt, combat patrols could operate 24 hours a day to ambush the opponent, deny him reconnaissance, and raid him in his assembly areas.

The third belt, beyond five kilometers, was for long-range reconnaissance patrols, primarily performed by the scout platoon at named areas of interest and enemy decision points to provide timely intelligence on enemy activities.

A fringe benefit to an aggressive reconnaissance and counter-

reconnaissance effort was the disruption of the division's rest and planning cycles. The OPFOR retained the advantage, because its light infantry continued to operate at night and its heavy infantry pursued in the day.

The lesson learned was that the reconnaissance/counterreconnaissance battle must be allocated the resources it needs to succeed. Although the light-heavy force has an advantage if it is used properly, ways to counter an enemy's thermal sights need to be examined.

Although light infantry is designed to move and fight on the most difficult terrain, severe slopes, narrow ridges, and thick vegetation do restrict the fire and movement of small units. A light infantry leader who is not trained to consider METT-T and modify the way his unit executes the drills in FC 7-15 will have command and control problems.

On the selection of linkup points, several of the 7th Division's units selected prominent terrain. But this terrain was also key terrain to the OPFOR and thus was already occupied. Since the division was using small units for infiltration, the OPFOR was able to defeat them in detail.

Therefore, commanders must try to determine their opponent's key terrain sites and avoid these in their route-planning and linkup operations. Prominent terrain should certainly be used as reference points, but linkup points should be offset to covered and concealed locations. Alternate linkup points should be selected in case the first location is occupied or compromised.

We learned that a light infantry squad is dependent upon certain items of equipment. Without the squad automatic weapon (SAW), squad radio, and night vision goggles, it is just a highly trained H-series infantry squad. The OPFOR light infantry did not have any of these and operated primarily as platoons and companies, except for patrols, ambushes, and infiltrations. The division's units had squad radios and night vision goggles and operated a lot at the squad level. But without the SAW, these squads could not generate the necessary firepower to defeat the OPFOR platoons.

While the squad radio and the night vision goggles are combat multipliers, it is the SAW that gives a light infantry squad its significantly improved capability. The SAW will change the way we fight, and for the first time since the demise of the Browning automatic rifle, a squad will be able to generate the firepower it needs to operate successfully.

Speed is essential for successful offensive armored operations, especially against light forces. When attacking forces halted on an objective or before an obstacle, its losses would mount. But on those occasions when the armor continued to move against light forces, one team usually broke through and met no resistance other than from aircraft. Faced with an authentic Soviet-style OPFOR, the division would have had much more than a company in its rear area. Such an OPFOR would have reinforced that success with everything available, leaving the light forces to starve behind it.

The positioning of TOW and Dragon teams showed that the crews did not fully understand the technical employment considerations of their weapon systems or all of the problems associated with ammunition resupply.

On numerous occasions, TOWs and Dragons were in positions that were characterized by various faults: Some were located on steep slopes, on ridges, and very high up. The ridges were consistently surrounded by rough wooded river beds and sharp draws. Although these positions provided excellent overwatch of the armor avenues of approach, they were ineffective.

Halfway up a wooded slope, for instance, wire-guided munitions are useless. And some of the positions were high enough to be supported or destroyed by artillery preparation of the high ground in advance of an attack. Often, TOW positions were located at the top of wooded ridges, leaving tanks free rein at the base of the ridges. In addition, it was unlikely that those positions could be resupplied with missiles, given the vertical relief of the positions and their distance from any site where a vehicle with substantial amounts of ammunition could be spotted to support them. Besides, after one shot, many of the positions were revealed, and the crews were incapable of displacing.

In addition, backblast areas were often obstructed by either

terrain or troops, or both; and some weapons were positioned so that they would have to engage tanks at less than the weapons' minimum arming range.

Command and Control

There are several communications problems when operating with a light-heavy mix—vocabulary, for one. Heavy units have a different vocabulary from that of light units, and light units are developing a vocabulary that is different from that of traditional infantry units (*seamless web, expanding torrent, baited attack,* for example).

Graphics present a similar problem. Although heavy and light units use many of the same graphics, each also uses some that the other is not familiar with.

Concepts often differ as well. When light units think of such concepts as tank-proof terrain, linkup points, distance to be cleared past an obstacle, EEI (essential elements of information), or time distance for movement, their ideas are not always the same as those of armor or mechanized units.

The solution to this problem is for leaders to ask questions, have back-briefs, and refuse to assume that what they have heard is what was meant. (Infantrymen need to speak *one* language.)

Communication is especially important when it comes to the commander's intent. The flexibility and initiative necessary to a light infantry unit's success is possible only through the use of mission type orders. And the essence of successful mission orders is a clear communication of the commander's intent to the subordinate units.

A commander must have his immediate subordinates back-brief him on their concept of the operation for a mission. In this way, he can be certain that his intent has been interpreted properly. This system should be used at each subordinate level down to the squad, section, and crew.

It is important that trigger points be incorporated into the operations order and disseminated to the lowest level. Because the light infantry does not have the mobility and the firepower of mechanized infantry forces, all available resources may have to be concentrated in one area. Given trigger points with which to coordinate fires at a specific location, the light infantry can destroy enemy forces before the units become engaged in hand-to-hand combat.

Adjacent units should also have the locations, type, and method of engagement of any trigger points that will be used in an operation.

Light infantry doctrine needs to be sorted out so that any special operation activities conducted within the corps or division areas of interest or influence are synchronized with the commander's battle plans. At the least, a special operations force liaison officer should be at the corps or division headquarters to coordinate intelligence.

During Celtic Cross IV, the Special Forces, guerrilla, and Ranger units that operated as part of the OPFOR were not under the control of the maneuver commander, and their activities were rarely synchronized with the brigade task force's operations. A Special Forces liaison officer with a high-frequency radio was provided, which gave the OPFOR some great intelligence. And while a coordinated effort to attack the division's command and control and logistical support facilities in conjunction with a major attack worked well, it was off line since there are no provisions today for coordinating such efforts in a timely manner. The real-world coordination channels are ill-defined and nonresponsive. Although they may be synchronized at army or theater level, much is left to be desired at the corps and division levels.

Special Forces, guerrilla, and Ranger unit operations must be synchronized with the task force's operations.

An adjacent unit liaison officer, to accomplish his mission, should know all there is to know about his own unit. This includes his unit's combat capabilities, equipment, personnel, location of units, and command posts. Additionally, he should carry with him his unit's current operations plan with overlays to use in discussing his commander's intent, concept of operation, fire support plan (including target lists and trigger points), barrier plans, deception plan, and graphics. He also needs to have a good grasp of how his unit fights doctrinally so that he can intelligently discuss current and future operations.

Given the fluidity of the modern battlefield and the opponent's ability to destroy command and control systems, subordinate commanders should be taught that it is all right to skip echelons when out of communication with higher headquarters. This is particularly important to the light infantry because of the austerity of the FM communication authorizations and the FM-hostile terrain in which they will normally operate.

Lateral communications between sister units is a good idea. In the exercise, the exchange of information between company commanders over their battalion's command net facilitated rapid movement and mutual support between companies. The companies kept each other apprised of the enemy situation in each section of responsibility, informed the entire command of their status, and requested information from flank units by direct lateral communications that did not involve the battalion's tactical operations center (TOC). Thus, the TOC personnel and command group monitored the situation and had to issue commands, guidance, and requested information on an exception basis only.

In an attempt to test the full command and control capability of the brigade, we simultaneously operated the TOC, the TAC (tactical command post), and a brigade-controlled task force on a deep raid for 12 hours. Because of the austerity of personnel and FM radios, however, we could not have sustained the effort much beyond 24 hours.

A light infantry brigade has only an organic retransmission FM radio capability for the commander. This means the operations and intelligence (O&I) and the administration and logistics (A&L) nets are limited. In the anticipated FM-hostile environment of light infantry, this is a major shortcoming.

An additional three AN/PRC-77s are needed—two for brigade command nets and one for the S-2 O&I net, so that they can communicate while footmobile. Two additional AN/VRC-49s and four more personnel spaces are also needed so that all nets will have a retransmission capability 24 hours a day.

FM radio does not work for long-range communications. Deep infiltration attacks and airmobile assaults are light infantry missions, and when a brigade does not have long-range surveillance units attached, battalion reconnaissance units must be used in that role.

The brigade needs a high-frequency capability. The FORSCOM distribution plan for HF radios authorizes each light brigade headquarters and each light infantry battalion AN/PRC-104A and AN/GRC-213 radios. None are authorized for a brigade. Each battalion scout squad should also have an AN/PRC-104.

We also need to ensure that VINSON devices are provided for communications security for FM airborne retransmissions.

More wire is needed than is presently authorized —at least 22 miles for brigade and 10 miles for each battalion. (The brigade's authorization is 12 miles, the battalion's is four.)

During the many combined arms operations, communication between tankers and infantrymen was important. Dismounted infantrymen were most effective when they talked to the crews of the M-60 tanks, pointing out targets (antiarmor weapons, machineguns, and the like). It is therefore important to make sure the M-60's telephones are working before each operation, and a telephone should be put on the M-1 tank.

For a command and control helicopter, we need to retain some UH-1s with command consoles until the UH-60s are available. The OH-58 proved inadequate for the task during the exercise. It lacks an IFR (instrument flight rule) capability; it cannot keep up with the AH-1; it does not have enough radios; and it can carry only three passengers.

A light infantry division also needs the motorcycles it has, but they must stick to cross-country movement. Several of the 7th Division's motorcycles were captured because they were used too far forward on established roads or trails.

Signaling mirrors were used effectively, even on moonlit nights, to identify the forward line of troops for the engagement of direct fire weapons and close air support and to identify locations for aerial supply and medical evacuation. Light infantry units should be equipped with mirrors for signaling and marking, and should also be trained in the techniques of using them. Supporting units should also be briefed on these techniques.

The organization of the TOC is also important to command and control. TOCs need to be organized by functional responsibility. Before hostilities began in the exercise, the OPFOR brigade headquarters analyzed the 7th Division's capabilities, its likely courses of action, and its vulnerabilities. With this analysis, the OPFOR determined which targets to attack, focused the intelligence effort to detect those targets, and allocated the resources to destroy them.

The TOC was organized to facilitate this process. The operations section, which would determine the high-payoff targets and decide whether (or how) they would be attacked when detected, was placed at the end of the TOC. The S-2 section focused the effort to detect the targets, aided by the fire support officer. When a target was detected, the FSE made recommendations as to how it should be destroyed. These two elements were located close together to ease the flow of information and discussion as to the best course of action.

TOC shifts must be changed frequently and TOC personnel must have a sleep plan or they will burn out in about three days. We tried several different ways to include a mini "relief in place" every 12 hours, but even that did not provide for the continuity of operations and the information flow required for the 24-hour-a-day battle.

The system that worked best was to have the S-3 (or the XO when the TAC was out) replace people individually as the tempo of the operation slowed or as it became apparent that a person was getting tired. He soon could tell who was able to work 20 hours and who could work only eight. The eight-hour workers became part of the CP security force or were given special projects so that everyone averaged about six hours of down time.

Intelligence

A light infantry division, once dug in and set, has little flexibility for responding with combat power on other avenues of approach. Heavy forces, because of their tactical mobility, can cause a light infantry division to commit its forces against a diversionary effort and then strike quickly elsewhere. Heavier forces have a shorter decision cycle than light infantry forces. Thus heavier forces, once operating within a light force's decision cycle, should be able to retain the initiative.

When division intelligence is not available, a brigade can task its battalions to provide reconnaissance patrols, but the brigade must provide the coordination mechanism to make it work. Dur-

ing this exercise, most of the patrols were directed by the brigade TOC. Initially, this resulted in much confusion over routes, primary intelligence requirements (PIRs), intelligence requirements (IRs), and patrol debriefing reports.

The solution was to provide the S-2 with an overlay that defined the area or areas the commander wanted patrolled. This left the selection of the specific route up to the patrol leader The overlay also distributed the PIR and IR and other necessary information. If it was not possible to provide an overlay, a listing of the grid coordinates that defined the named area of interest and the PIR/IR could be sent over the brigade intelligence net with equal results

The brigade needs a high-frequency capability (an AN/PRC-104) so it can equip its own ad hoc scout platoon. This platoon would come from subordinate battalion assets, either one squad from each battalion or the whole platoon from the reserve battalion, if one exists. This would give the brigade the reconnaissance capability it needs and still leave adequate resources at the battalion level.

A brigade's reliance upon subordinate battalion scout platoons or attached resources creates a problem when the entire division is not deployed. Maneuver battalions are doctrinally responsible for the area extending five kilometers forward of the FLOT (forward line of own troops); brigades are held responsible for the area extending 10 to 20 kilometers forward of the FLOT; and division is responsible for anything beyond 20 kilometers. With the brigade's communications capability limited to AN/PRC-77s, the scout platoon can talk only 12 kilometers away, and this does not give the brigade the capability to "see" the 20 kilometers it needs to see.

Intelligence reporting guidelines must be established. Otherwise, the subordinate units will report everything and rapidly overload the system.

This exercise was the first mid-intensity conflict (MIC) scenario in which this brigade participated. Since the tactics that are used to fight an unconventional force are distinct from those used to fight a conventional force, the intelligence requirements are also different. The reporting criteria must reflect the different pace of the battle.

This fact was not clearly understood by all the OPFOR units in the exercise. At the beginning, battalions were reporting sightings of two or three vehicles or personnel moving around the battlefield. In a low-intensity conflict (LIC) this information would have been important at brigade level, but in MIC a brigade is concerned with *company* locations. From these, the brigade then tries to determine battalion locations to report to division.

Intelligence must be disseminated through short intelligence reports and updates sent over the command net. Intelligence information was received by battalion S-2s from higher or adjacent battalions on the O&I net, but that information was not passed to subordinate units, since companies do not have an O&I net. Similarly, other intelligence information came from a company within the battalion but was not passed to the other companies.

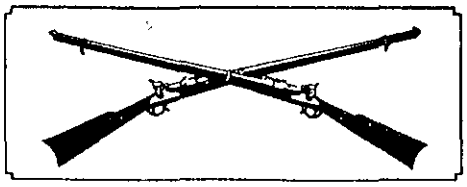
Provisions also must be made for the evacuation of intelligence materials. Because of the dispersion of units on the battlefield and the compartmentalization of the terrain, such materials as maps, documents, and equipment were not evacuated in a timely manner. The establishment of intelligence collection points helped solve this problem.

For radio direction-finding (RDF) intelligence, a TCAE (technical control and analysis element) slice should be task-organized with a separately deployed forward support company to improve collection data and intelligence dissemination to the supported brigade. The TCAE habitually provides radio traffic and electronic order of battle analysis at battalion level to assist and further direct priority of collection to forward support companies in support of an infantry brigade. The OPFOR headquarter's RDF intelligence support was reduced because the TCAE was not part of the OPFOR task force.

The S-2 generally does a good job of templating the enemy's order of battle. To get a better understanding of the 7th Division's intentions in the exercise, Engineer, Military Intelligence, Air Defense Artillery, Field Artillery, and S-4 staffs were asked to template how and where they would distribute their forces to support the division. Overlaying these templates on the S-2's template produced an 80 percent solution that was later improved upon by reconnaissance. It gave us an excellent picture of the enemy, which proved useful in targeting and also provided a better indicator of the enemy's intentions.

A lot of the intelligence the light infantry brigades get from subordinate units is from a narrow and shallow perspective of the battlefield. A foot soldier, after all, does not travel very fast or far, nor does he travel very deep when compared to an armored force. Consequently, the intelligence light infantrymen provide is of value to a tanker only for the first five to ten minutes of contact.

On the other hand, an armored force, by executing mounted reconnaissance, can collect all the information a foot soldier can detect and much more. From an intelligence-gathering perspective, when tankers are attached to a light infantry unit, they should be expected to provide more intelligence than they receive.

In short, light infantry should provide good intelligence of what is immediately forward, both in real time and in proximity; armored units should provide good intelligence of what is on the ground, in depth; while aviation units should provide good intelligence on the big picture.

The second article in this two-part series will cover the lessons the brigade learned in the areas of support—fire support, Air Defense Artillery, Engineer, logistics, NBC (nuclear, biological, and chemical)—and safety.