

fers to a supplementary document, Ground OB List and Brevity Codes, for a listing of qualifying items to be targeted for observation and reporting. (The list used in preparing the message in Figure 1 is shown in Figure 2.) Brevity code words can be used in conjunction with paragraphs EEE to LLL to report in detail which qualifying items have been observed. If qualifying items of any category have not been observed, the corresponding paragraph is omitted.

Paragraph KKK, Additional Information, might be used to report distinctive markings observed—Soviet Guards insignia, for instance.

Each LRSU's parent Military Intelligence unit would develop a Ground OB List and Brevity Code document to reflect its specific priority information requirements (PIRs) and the enemy's ground order of battle. If a LRSU's surveillance area is in North Africa, for example, items of U.S., British, French, Italian, and Brazilian manufacture, as well as items of Soviet and Czech manufacture, might be listed.

A significant advantage of this system is that it makes training and employment easier: To use it, LRSU personnel do not have to be trained to recognize TOE patterns or to distinguish between items that appear similar. They only have to be able to report the total items observed by category, which is a realistic day or night task.

Brevity code words can be used in

conjunction with this format to report totals of specific types of items whenever they can be visually differentiated. Detailed reporting of enemy air defense weapon systems, for example, are of significant value to friendly close air support units. The differentiation of specific items or equipment also helps to identify enemy units.

Another advantage of this system is that it is particularly efficient in regard to the amount of information conveyed in each message transmission. If necessary, the passage of an entire army can be accurately reported using this system without exceeding the transmit-message capacity of the digital message device group (DMDG).

The ground order of battle information collected can then be analyzed by the LRSUs' parent Military Intelligence units. In such an analysis, the information reported by multiple surveillance teams is templated on a stacked bar chart with the eight equipment categories along the x-axis. When this data is compared to known, templated order of battle intelligence, the totals can be expressed in three ways:

- By total items per equipment category. For example, the total number of medium tanks (EEE) observed by four surveillance teams.

- By percentage observed of total items in the category. For example, the total number of medium tanks (EEE) observed by four surveillance teams represents 65 percent of the total number of medium tanks in

the TOE of the enemy unit engaged.

- By units. For example, the total number of medium tanks (EEE) observed by four surveillance teams represents a certain number of medium tank battalions.

When ground order of battle information is analyzed on a strategic scale, multiple-regression, an elaborate mathematical process, can be employed to suggest the specific types of units that have been observed. For example, the total number of medium tanks (EEE), tracked ACV/AICV/APC/ACRVs (GGG), and wheeled ACV/APCs (HHH) observed can be compared with the total number of such items in BTR regiments (MRD), BMP regiments (MRD/TD), tank regiments (MRD), and tank regiments (TD). The resulting possible combinations of units are then compared to the order of battle intelligence to determine which combination is most probably correct. This becomes possible only on a strategic scale when a large data base is available.

Effective, highly efficient message formats such as the Ground OB Report (WESAW) make brief radio transmissions easier, thereby increasing a LRSU's survivability and mission accomplishment.

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Exercise Celtic Cross IV

EDITOR'S NOTE: This article was prepared by various offices within the Infantry School.

A part of the conversion to the Army of Excellence Tables of Or-

ganization and Equipment (TOEs) has been the creation of five divisions (four Active Army and one Reserve Component) under the Infantry Division Light—ID(L)—organization. These base-L divisions

differ radically in concept and design from the H-series TOE units that preceded them.

To ensure that the new doctrine, equipment, and organization would work as envisioned, the Army, be-

ginning in May 1984 subjected the operational concept and design to an intense certification process. This process culminated in the field exercise Celtic Cross IV in the summer of 1986, and the final concept and design were approved in February 1987.

To begin the overall certification process, the proponent schools analyzed their branch components of the light infantry division and used this analysis to write the initial tactical doctrine and to propose certification issues. From this process, 91 issues were identified, and these formed the basis of the independent evaluation plan (IEP). Each of these issues was investigated by a variety of methods. Thirty-eight of them were resolved by historical literature searches, studies, tests, and wargames, and the rest by the field certification process.

The objective of field certification was to assess the combat, combat support, and combat service support functions of the light infantry division in a tactical scenario. As the first unit to make the transition to the new design, the 7th Infantry Division at Fort Ord, California, was used for field certification. (This process was not designed to evaluate the readiness of the 7th Division's units and their state of training but to allow subject matter experts to evaluate the concept, doctrine, organization, and equipment of the light infantry division.)

The field certification methods were controlled by these principles:

- Capitalize on previous tests, studies, and analyses.
- Conduct essential testing only.
- Make maximum use of the division's internal evaluations (ARTEPs).
- Focus on combat support and combat service support.
- Evaluate, fix, evaluate.

Concurrent with the 7th Division's normal training schedule, the TRADOC (Training and Doctrine Command) Combined Arms Test Activity (TCATA) used squad-through-battalion ARTE evaluations and

brigade and division FTXs and CPXs for certification.

The final field certification event, Celtic Cross IV, focused on the ability of the division, as part of a corps, to deploy from home station and operate for an extended period of time. By that time, the Infantry School was confident that the previous certification process had revealed and fixed any problems in concept, doctrine, or design with the infantry battalion and brigade. What remained to be seen was whether or not the division concept, on which so much else depended, would work.

Celtic Cross IV, conducted on the rugged terrain of Fort Hunter Liggett, California, included soldiers from the 7th Infantry Division, the 9th Infantry Division (Motorized), the 10th Mountain Division (Light Infantry), the 101st Airborne Division (Air Assault), the 1st and 5th Special Forces Groups, I Corps, and the 2d Battalion, 75th Ranger Regiment. It was controlled down to platoon level by controllers from the 9th Division. A total of 99 subject matter experts from TRADOC schools and centers evaluated the certification issues. More than 21,000 soldiers, airmen, and Marines from Active, Reserve, and National Guard units participated.

The 17-day exercise was conducted in four phases—deployment, initial employment, sustained operations, and redeployment. During the

OPFOR CONVENTIONAL FORCE

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

deployment phase, the 7th Division—or Army Force (ARFOR)—received the mission to deploy by air to a simulated allied nation where it would assist that nation in counterinsurgency operations, deter a neighboring hostile nation from invading, and be prepared to destroy any forces that might cross the border. The division deployed one brigade and the division assault command post by air from Fort Ord. The remainder of the division followed the normal readiness standing operating procedures (RSOPs) for alert, preparation for overseas movement (POM), load-out and manifest, but simulated the air movement by proceeding in convoy to the arrival airfield.

The deployment phase included flying into intermediate staging bases and constructing and using assault airstrips. Once on the ground, the division established and secured a lodgement area and coordinated with host nation and country team representatives.

INITIAL EMPLOYMENT

The initial employment phase in the area of operations began with a parachute assault by elements of the 2d Ranger Battalion, an insertion of the divisional long-range surveillance detachment (LRSD), and an air assault by a rifle battalion to link up with the Ranger battalion. It continued as elements of the division infiltrated by foot or air-assaulted into their respective areas of operation. One brigade moved into position near the border to deter a conventional invasion while the other two brigades conducted counterinsurgency operations.

The opposing force (OPFOR) consisted of both guerrilla and conventional forces. The guerrillas were 250 soldiers from the Ranger battalion and the 3d Battalion, 5th Special Forces. The conventional force was organized into a composite task force (see box).

During the initial employment

phase, the guerrilla OPFOR conducted operations against the lodgement area, the lines of communication, and other soft targets. The conventional OPFOR portrayed a two-division combined arms force moving into forward assembly areas and staging cross-border mounted and aerial reconnaissance activities.

During the sustained operations phase, the guerrilla OPFOR activity continued while the conventional OPFOR attacked along two axes with both light and mechanized forces. For about two and one-half days the battle was fought back and forth in a single brigade sector. In some places the OPFOR thrusts were bogged down by a series of ARFOR ambushes and counterattacks. In other sectors, at different times, mechanized OPFOR forces on the valley floor cooperating with light OPFOR units on the ridgelines were able to breach ARFOR obstacles and either penetrate or envelop the static ARFOR defenses that were overwatching the obstacles. The OPFOR units that did penetrate the ARFOR lines were engaged by attack helicopters, A-10 aircraft, and FASCAM (family of scatterable mines). Bypassed ARFOR units remained in place and mounted local counterattacks and ambushes against the OPFOR's follow-on echelons.

Controller assessments indicated that at the end of three days the OPFOR was able to interdict the ARFOR supply routes for limited periods and to seize control of one province but that the initial attacks had been contained by elements from the division's other two brigades.

The OPFOR countered by sending its mechanized forces on a wide envelopment to strike the ARFOR at the boundary between one of the forward brigades and a brigade that was positioned in depth. The attack was defeated by a combination of obstacles, attack helicopters, and mines. Later in the day, a similar attack succeeded in penetrating the ARFOR flanks, but the play of the

scenario did not allow a full exploitation of the initial success.

The ARFOR responded with brigade counterattacks into the OPFOR's forward positions. OPFOR armor units that were forced out of these positions were engaged by ambush over the next two days as they withdrew back



across the international border. Although the counterattack was successful, heavy casualties were assessed against the ARFOR units because they had been picked up by the OPFOR's thermal night sights as they tried to infiltrate into position. Subsequent air assault counterattacks by the ARFOR into the OPFOR rear areas and guerrilla base camps, however, were completely successful.

A number of major observations can be made as a result of Celtic Cross IV and the entire light divi-

sion certification process. These observations fall into two general categories—first, the focus of the scenario and, second, the tactical lessons learned.

The scenario of Celtic Cross IV focused on the combat and combat service support needed to support operations against a combined arms enemy. Since most combat issues had been thoroughly evaluated and resolved earlier, this exercise focused on stretching the division's combat and combat service support system to the breaking point through a realistic tactical scenario. This focus placed less emphasis on the guerrilla and counterinsurgency scenario and the more esoteric aspects of counterinsurgency warfare.

The primary tactical finding that came out of the exercise is that our light infantry will have to continue to refine the tactics that capitalize on its unique characteristics. This tends to confirm the operational concept and doctrine as written and amended on the basis of the previous certification exercises. Three areas in particular deserve attention—the defense, the use of combat support assets, and the use of terrain.

The proper defensive tactics for light infantry to adopt are ambush, counterattack, and (when fighting armor) cooperation with divisional and corps antiarmor units. Medium and light antiarmor weapons should be used in ambushes to engage OPFOR armored fighting vehicles in order to destroy selected elements, to delay the OPFOR's advance, or to separate the OPFOR echelons. Once OPFOR armored units have penetrated a given sector, light infantry must endeavor to interdict their lines of communication by ambush and counterattack. TOW light antitank (TLAT) units, attack helicopters, and close air support aircraft can engage and destroy advancing OPFOR armored forces with concentrated fires.

Attempts to use fixed positions to halt an OPFOR armored advance will rarely be effective. Antiarmor

obstacles require massive effort to build and are breached quickly. If large fixed concentrations of infantry forces are positioned to cover the obstacles by fire, they can delay the armor, but they will soon be suppressed by long range direct and indirect fire. If, instead, infantry forces are positioned in static, dispersed, mutually supporting positions, they will soon be bypassed, isolated, and destroyed.

Tanks and armored vehicles can usually penetrate light infantry positions, but the light forces can remain combat effective, unless they are cleared out. The armor, in turn, is vulnerable to ARFOR divisional and corps assets such as attack helicopters, CAS, and TLAT. The OPFOR's lines of communication are also vulnerable to attack by the light infantry.

This does not mean light infantry units should entirely forego dug-in fighting positions or specific static positions. Dug-in fighting positions provide protection for key weapons, ambush teams, and elements supporting raids or counterattacks by fire. Fixed defensive positions should be used to retain key or decisive terrain, to protect antiarmor assets from dismounted assaults, or to serve as a patrol base or assembly area from which a unit can stage raids and ambushes and to which it can retreat if pursued by a larger force.

When this is done, however, units should keep in mind the following:

- Front slope positions are quickly engaged, suppressed, and destroyed.

- Camouflage and deception are as important as cover.

- Mutual support between and within units is essential.

- Multiple firing positions are important for all weapons.

- Reverse slope positions that give antiarmor and crew-served weapons oblique defilade shots are most effective.

- The use of dug-in positions or static parts of the defense must not make the whole defense static or

passive.

Engineers, attack helicopters, Dragons, and TOWs are not effective in ones and twos. This does not mean that they should be positioned in a cluster but that their effects should be concentrated to accomplish a single task in support of the main effort. Units should avoid the temptation to adopt a "fair share" approach to combat support or combat service support assets.

AVENUES

Heavily compartmented terrain, ridgelines, fingers, and streambeds are the light infantry unit's avenues of approach. Hilltops where ridgelines intersect become as important as crossroads. In some cases, OPFOR units in Celtic Cross IV gave up the high ground in order to defend the roads and trails. This left them vulnerable to ARFOR light infantry maneuvering along the ridges. Because of limited maneuver space on ridges, relatively small forces can effectively block a ridge-line for a short time. Mortars and machineguns on ridges and hills can normally provide mutual support both to antiarmor ambushes and to the blocking forces on the ridges.

A light division can maneuver its brigades and battalions in cooperation with each other, but it takes time. In most terrain, light units cannot outrun mechanized or motorized forces, either in the offense or in the defense. Helicopters, when available, can provide additional mobility and flexibility, but the division must rely for the most part on superior intelligence to allow enough time to react to the enemy, and on camouflage and deception to prevent enemy interference with friendly maneuver. Planners must anticipate the time necessary to move units by thinking far enough into the future so that their orders and objectives are not overcome by events.

On the basis of the certification

findings, numerous changes have been made to the division's organization, equipment, and doctrine. Some of the more important changes to infantry units are the following:

- Scout platoons will exchange their PRC-68 radios for PRC-77s.

- A new soldier's load doctrine has been written that decentralizes load configuration to the lowest practical level (based on the estimate of the situation), fixes responsibility for the echelonment of loads, and gives guidelines for load weights.

- High-mobility multipurpose wheeled vehicles (HMMWVs) will be redistributed within the infantry battalions—the battalion mortar platoon will lose two HMMWVs with one going to the battalion executive officer and the other to the support platoon.

- Four three-quarter-ton trailers will be added to the support platoon.

Additionally, CSS and CS units will receive more M203s and squad automatic weapons to increase their local defense capability; the signal and maintenance battalions are to be reorganized; and doctrine has been refined to reflect lessons learned and to fill gaps uncovered during certification.

TCATA's overall assessment was that "the organization design and operational concept of the Infantry Division (Light) is basically sound" but emphasized that "certification should not be construed as a guarantee that the ID(L) will be able to perform all missions in all type terrain, weather conditions, or scenarios" and that the division "must be doctrinally employed" with "a detailed METT-T analysis. . . to ensure that [it] is properly augmented for each particular area of employment."

