

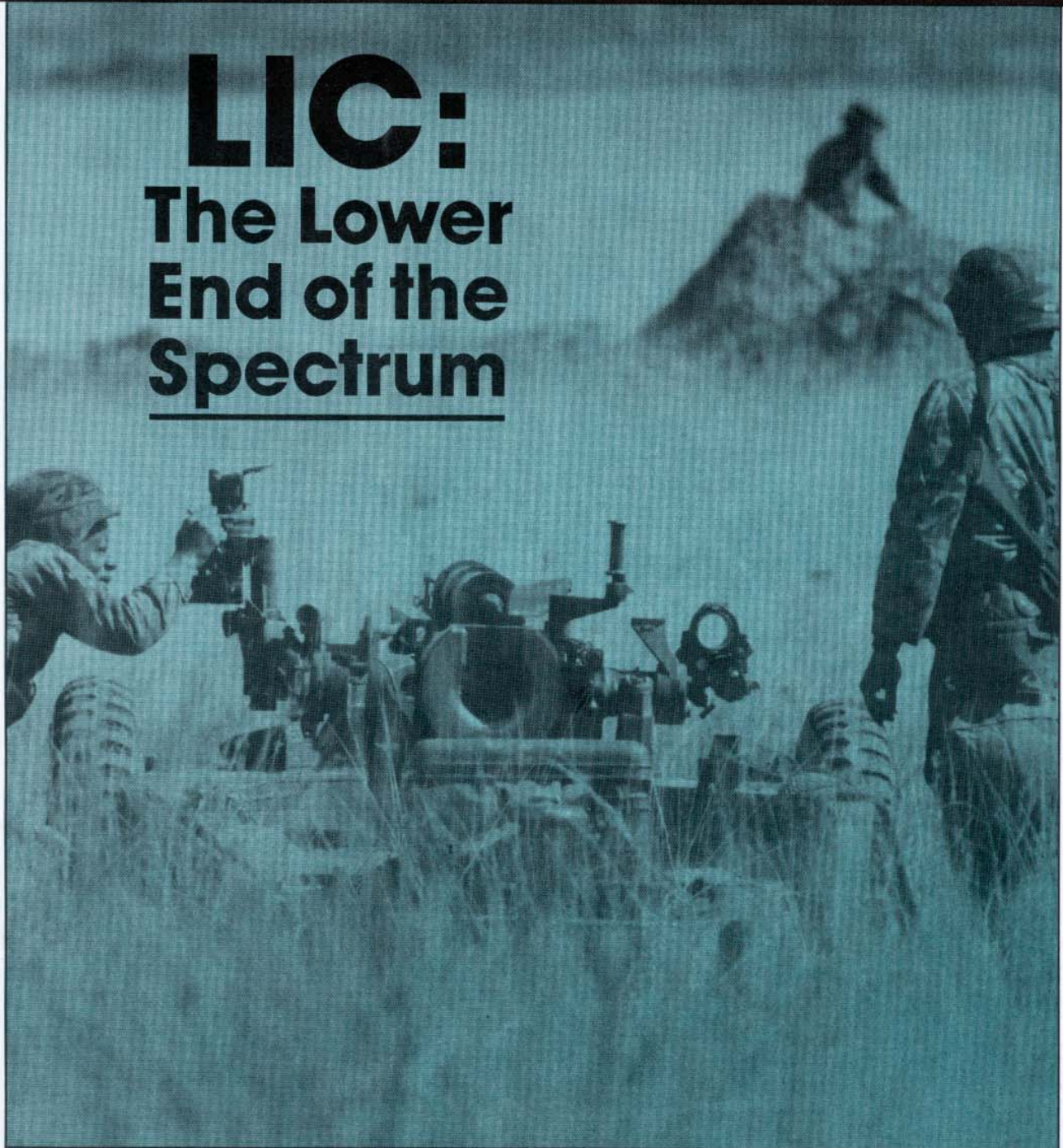


Field Artillery

A Professional Bulletin for Redlegs

April 1991

LIC: **The Lower** **End of the** **Spectrum**





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FEATURE ARTICLES: FA and LIC

- 4 FA and LIC: An Overview**
by Colonel Thomas E. Swain

- 8 Counternarcotics—The Army's Unique Challenge**
by Colonel Thomas E. Swain and Major Richard A. Corson, SF

- 11 Fire Support Deconfliction of Special Forces Operations**
by Captain Alexander C. Fiore

- 14 The Unsung Heroes: Redleg Advisory Efforts in Vietnam, 1965-1969**
by Captain Leslie A. Belknap

- 18 Nathan Bedford Forrest, A Redleg in Disguise**
by Cornelia and Jac Weller

ARTICLES

- 23 Victory Artillery in Operation Desert Shield**
by Colonel David A. Rolston

- 28 Command Post Integration or Staff Synchronization**
by Major John F. Petrik

- 32 Fire for Effect:**
Leadership from an Army Reserve Perspective
by Major General William F. Ward, Jr.

- 35 Platoon-Based Firing Battery Operations**
by Major W.E. "Casey" Crowder and Captain Robert L. Quinnett, Jr.

- 44 The Division Deep-Battle Targeting Cell: Thor's Hammer or Rube Goldberg Device?**
by Major Michael W. Cannon, AR

DEPARTMENTS

- 1 ON THE MOVE**
- 2 INCOMING**
- 22 REDLEG REVIEW**
- 49 RIGHT BY PIECE**
- 52 REDLEG NEWS**

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We Apologize for the late delivery of this edition of *Field Artillery*. Contractual problems with our commercial printer delayed its publication and will delay June's edition. Our August 1991 Bulletin will arrive on time. Thank you for your patience.

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LIC—A Fire Support Challenge

In the aftermath of Operation Desert Storm, it's difficult to shift our thinking to include other worldwide threats we may face. For the better part of a year, we've focused on glowing reports of our air superiority, precise weaponry and lightning-fast offensive operations in Southwest Asia—not on other regions. And that's as it should be.

But a desert war against a heavy force isn't the only type of war we may have to fight. We could deploy to jungles, mountains or other terrain and fight guerrilla or insurgency forces in any number of regions. Therefore, we must continue to prepare for the total spectrum of conflict, including low-intensity conflict (LIC).

The Nature of LIC

In LIC, our Army will have to be flexible enough to accomplish nonstandard missions—different from those we've seen recently. For example, technological advances make it easy for us to locate and destroy large enemy troop formations as we did in Desert Storm. But we also must be able to use our sophisticated capabilities to destroy smaller, lighter enemy forces moving through jungles, mountains or villages. As we destroy the enemy, we'll have to limit collateral damage and civilian casualties—a challenge for fire supporters to apply the right amount of firepower with the greatest timing and accuracy. All the while, we could be coordinating fire support with foreign military and, in some cases, operating in a chain of command that includes foreign military and civilian decision-makers.

Each of the LIC situations we could find ourselves in can have different political considerations dictating unique operational parameters. In the pre-conflict stage of the spectrum, we could be engaged in show-of-force firepower demonstrations in very controlled circumstances but prepared for conflict at a moment's notice. Such was the case in Operation Nimrod Dancer in Panama just prior to the eruption of conflict in Operation Just Cause in December 1989.

Show-of-force demonstrations and other LIC operations, such as those to counter insurgency, terrorism and narcotics

trafficking, are moving toward center stage and, from time to time, will require us to preempt or defeat a regional threat. We must, therefore, understand LIC and other nations' cultures, politics and war-fighting capabilities. In addition, we must examine our artillery tactics and doctrine to ensure we can most effectively contribute to defeating any LIC threat we face.

Redlegs and LIC

Given the nature of combat at the lower end of the spectrum, employing fire support assets will require the utmost in centralized, detailed planning; hasty preparation; and, most probably, decentralized execution.

That means the demands on our junior officers and enlisted soldiers in LIC could be tremendous. Developing and nurturing their initiative, decision-making skills and technical and tactical knowledge will be a *must* for senior commanders.

During the Desert Storm 100-Hour War, the burden of providing effective fire support fell squarely on the shoulders of the fire support coordinators. Their missions were complex as they simultaneously coordinated numerous assets to support rapidly moving offensive operations to destroy the enemy.

In LIC, fire support missions also will be complex and require precision. The close coordination of several assets in a small space and, perhaps often, in a short time is one of the greatest challenges for

a company or battalion fire support officer. These assets could include combinations of artillery cannon and rocket systems, AC-130 gunships, F117 Stealth fighters, naval gunfire, attack helicopters, A-10 aircraft, specialized munitions and other delivery systems, including electronic warfare.

Planning and precision must be our watchwords. Only through the careful use and coordination of all assets available can Field Artillery provide appropriate fire support for the maneuver commander in LIC.

Field Artillery's Future

The trends of modern warfare clearly indicate a move toward the more limited, regional Third-World conflicts in which the destruction of the enemy is complicated by political and operational restraints. Exercising these restraints while employing a multitude of lethal, precision weaponry will present challenges to our fire support system. But flexibility, timeliness and accuracy have always been hallmarks of our Branch.

On the LIC battlefield, Field Artillerymen must continue their hallmark standards and be in the forefront in planning, supervision and execution to ensure our Army's success. And Redlegs are up to it.



“ Given the nature of combat at the lower end of the spectrum, employing fire support assets will require the utmost in centralized, detailed planning; hasty preparation; and, most probably, decentralized execution. ”

Question: What Fire Direction Procedures Do Units Use without Maps?

I'm a platoon fire direction officer (FDO) assigned to a 155-mm SP [self-propelled] howitzer TACFIRE [tactical fire direction system] aligned battalion in support of an armor brigade in Operation Desert Storm. A problem we encountered was lack of maps. In all previous training exercises, we've always used maps to determine accurate locations.

Field Artillery units need to know what methods they can use to determine accurate locations without maps or with ones without grid lines. Also, is there a manual that details these methods?

1LT Richard T. Sayre, FA
C/2-82 FA

Answer: Here are the Fire Direction Procedures to Use without Maps.

Land Navigation. If a unit has a map without grid lines, it can still use the map to help determine its location. Since almost all maps have some type of reference system (i.e., latitude and longitude), the battalion surveyors can convert that information to the Universal Traverse Mercator System (UTM), and the unit can work from there.

Without a map, grid sheets with common information established on them can serve as a substitute. In extreme circumstances, the chief surveyor at the division artillery or corps level can establish a "common grid" by locating a road intersection or some other prominent reference point and designating it as "0,0." The unit then starts with the grid sheet and uses one of the following pieces of equipment or methods to determine its

position:

- Global Positioning System (GPS)
- Position and Azimuth Determining System (PADS),
- Moving Target Locating Radars (AN/TPS-25 or AN/TPS-58)
- Firefinder Radars (AN/TPQ-36 or AN/TPQ-37),
- Using a military intelligence company's radio direction finding assets or
- Reverse polar plot by using a "spotter" round from a nearby artillery unit.

These land navigation methods are in *FM 21-26 Map Reading and Land Navigation* (Paragraphs 5-3c(2) and 6-10, Appendix G-1, and Chapter 9) and in *FM 6-121 Field Artillery Target Acquisition* (Chapter 3).

FDC Procedures. Fire direction center (FDC) operations can be conducted without maps by constructing an observed firing chart. It's the chart on which all batteries and targets are plotted relative to each other. These relative locations are established by firing. Since all locations are based on firing data, observed firing charts contain errors due to the unknown vertical interval.

All observed firing charts are based on a registration. Once a registration is complete, the battery location is polar plotted from the registration point, using a direction based on the back azimuth of fire and a range corresponding to the adjusted elevation.

When maps aren't available, units can't accurately determine altitudes. When vertical interval and, therefore, site are assumed to be zero, a false range is introduced into the polar plot range. Units can reduce this inaccuracy by determining the site by either estimating the vertical interval or conducting an executive officer's high burst.

There are four methods for determining the polar plot data needed: (1) Percussion Plot, Site Unknown, (2) Percussion Plot, Vertical Interval Estimated, (3) Time Plot, Site Unknown or (4) Time Plot, Site Known (determined by executive officer's high burst). The exact procedures for these four methods of determining polar plot data are in *TC 6-40 Field Artillery Manual Cannon Gunnery* (Chapter 18).

If units have questions about these or related procedures, call the Field

Artillery School, Fort Sill, Oklahoma: Survey Division, Target Acquisition Department (TAD) at AUTOVON 639-3312 or commercial (405) 351-3312 or the Cannon Division, Gunnery Department (GD) at AUTOVON 639-4973/2622 or commercial (405) 351-4973/2622.

CPT James M. Hollingsworth, TAD
CPT Robert W. Parkman, GD
Field Artillery School

Response to "Massed Fires—Room for Improvement"

As a longtime direct support battalion fire direction officer (FDO), I'd like to add a few thoughts to the excellent "Massed Fires" article by Colonel Thomas Hogan and Captain Brendan Wilson in your October 1990 issue. Their article was on target: tactically and technically, massing only recently has begun to receive the emphasis it deserves.

Eager to support the scheme of maneuver, we've allowed every company commander to have his "piece of the artillery pie." Rather than decisively massing at critical points, we've piecemealed our fires in attempts to support every FIST's [fire support team's] call for fire. Maneuver commanders have learned to expect such piecemealing; FSCOORDs [fire support coordinators] must educate them in the advantages of massed fires and the basics of its technical requirements.

Battalion FSOs [fire support officers] must closely manage calls for fire and fire support plan execution, allocating in accordance with the commander's guidance. TACFIRE [tactical fire direction system] courses must emphasize techniques for massing rather than stress the system's ability to process a high volume of calls for fire. Tactically, the entire combined-arms team must fully understand and support the massed fires concept before the Field Artillery can execute it successfully.

Technically, we're making great progress in applying the gunnery skills vital to massing. The five requirements for

Field Artillery

accurate, predicted fire are indeed the keys to successful massing. Battalion FDOs [fire direction officers] must be experts in the gunnery problem, not just TACFIRE computer wizards. They must methodically develop their platoon FDOs, first stressing manual gunnery skills. Mastering these skills develops an understanding of the gunnery problem to a depth that's unreachable with only BCS [battery computer system] and BUCS [backup computer system] training. As FSCOORDs and maneuver commanders shift their tactics to embrace massed fires, FDOs must get away from the keyboard and back to the basics of manual gunnery.

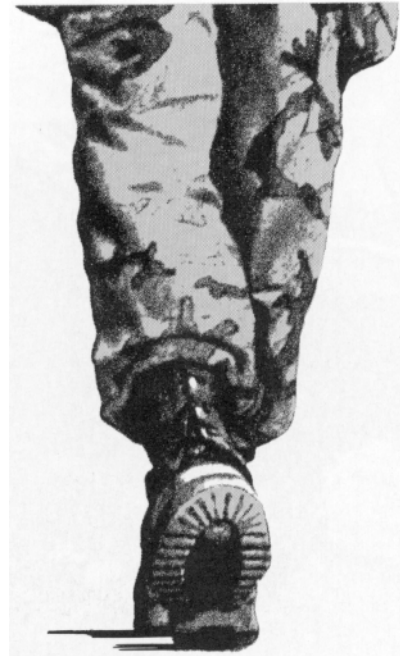
Massing fires is challenging, but the techniques are here. Let's get back to basics and make it happen.

CPT Steven A. Stebbins, FA
Cdr, B Btry
6-1 FA, 1st AR Div

orders, unit histories, diaries and articles about members' experiences and issued to its members at the 1990 annual reunion in Nashville, Tennessee, in October. On Page 72 of this book, our observer tells about artillery units' being overrun by the 10th Panzer Division, like Judge Patterson did in his article.

The 36th FA Association is placing a copy of the book in the Morris Swett Library at the Field Artillery School, Fort Sill, Oklahoma, to be used as a reference. Copies also are in the Pentagon Army Library and the US Army Center of Military History, both in Washington, D.C. We have a limited number of the books available for members through the 36th FA Association Secretary, Daniel J. Tanous, 2 Wagon Wheel Road, Sudbury Massachusetts 01776.

LTC (R) Carlos M. Miller, FA
Great Bend, KS



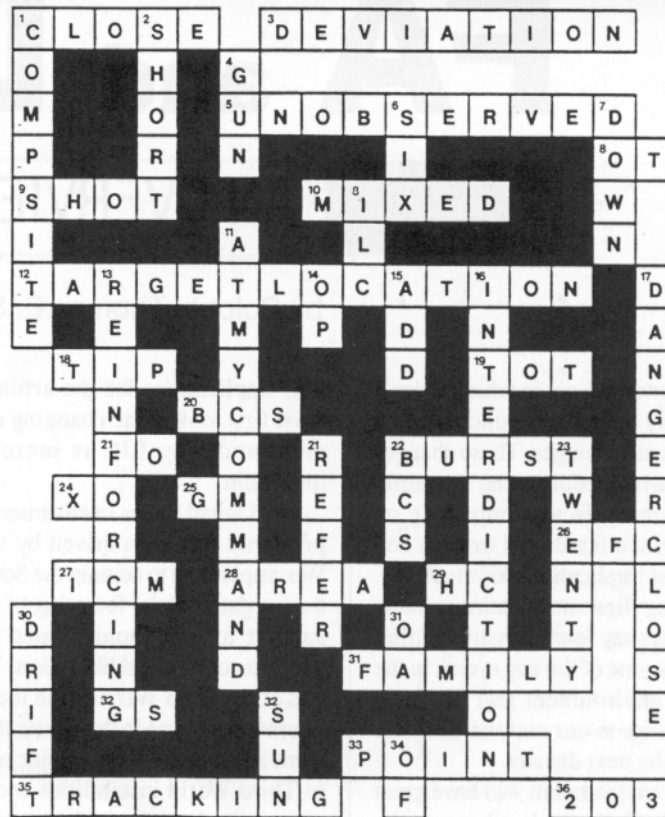
Response to "Starting Off on the Right Foot"

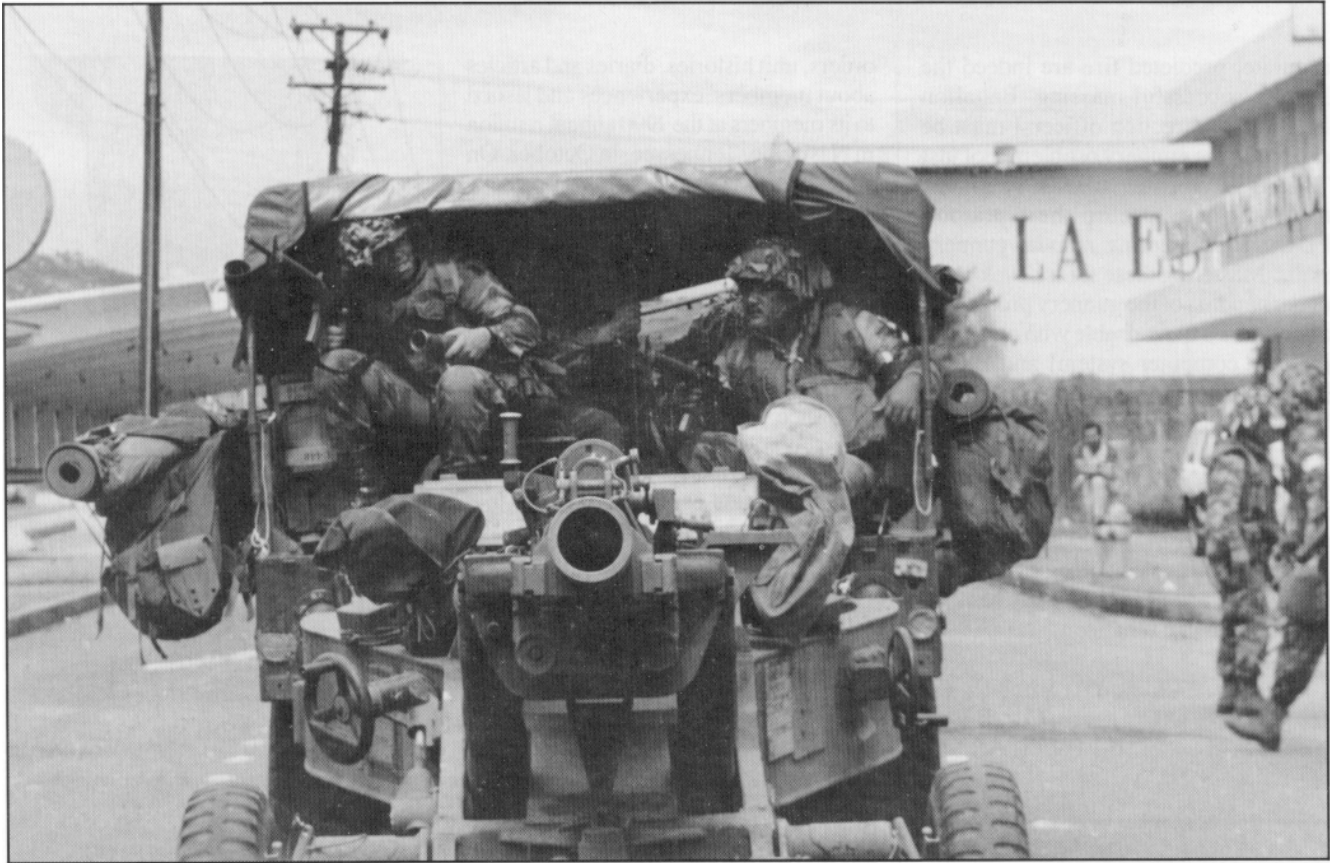
The article "Starting Off on the Right Foot" by the Honorable John Patterson in your October 1990 issue stirred my memories of being a member of the 13th Field Artillery Brigade, of which the 17th Field Artillery Regiment was a part. The Brigade consisted of three regiments: the 17th and 178th (155-mm howitzer regiments), 36th (a 155-mm gun regiment) and the 1st Observation Battalion.

The 1st Battalion of the 36th Field Artillery (1-36 FA) was committed to the British 78th Division in December 1942 and reverted to II Corps about 14 February 1943. In fact, the 1-36 FA fired its first round on 24 December 1942 and was in battle to the end of the African Campaign. The 2-36 FA was committed at the same time as the 1-17 FA, and we heard many stories from the men of the 2-17 FA of the overrunning of their battalion.

The interesting part of the article is, ironically, the 36th FA Association had just finished publishing the book *36th Field Artillery Regiment* comprised of

Answers to "The Forward Observer" Crossword Puzzle (February 1991, Page 53)





6-8 FA in Operation Just Cause

FA and LIC:

AN OVERVIEW

by Colonel Thomas E. Swain

The environment in which today's Army operates is punctuated by dramatic changes. These changes herald a more complex and dynamic world with many factors impacting on the direction of our national strategy and having major implications for the Army. In addressing these implications, many senior leaders say low intensity conflict (LIC) will be one of the key events in the new world environment and the most likely challenge to our national security for at least the next decade.

This LIC environment will have great impact on the Army and, subsequently, the Field Artillery. To understand the LIC implications for the artillery, one

must first look at the changing environment and why LIC is increasingly important.

The United States involvement in LIC primarily has been driven by the Cold War imperative to contain the Soviet's (or a surrogate state's) fostering of and (or) support for communist-based regimes and wars of national liberation. With the end of the Cold War and the increase in internal problems in the Soviet Republic, some say there will be a major reduction in Third World instabilities and a commensurate decrease in threats to United States' interests. Others suggest that contingency conflicts such as Operation

Desert Storm will serve as the principal model for the Army to base its organization, training and equipment around. Granted, large-scale regional contingencies may continue to occur, and we must be prepared to meet those challenges. However, indications are there will be broad differences in the types of future challenges to national interests.

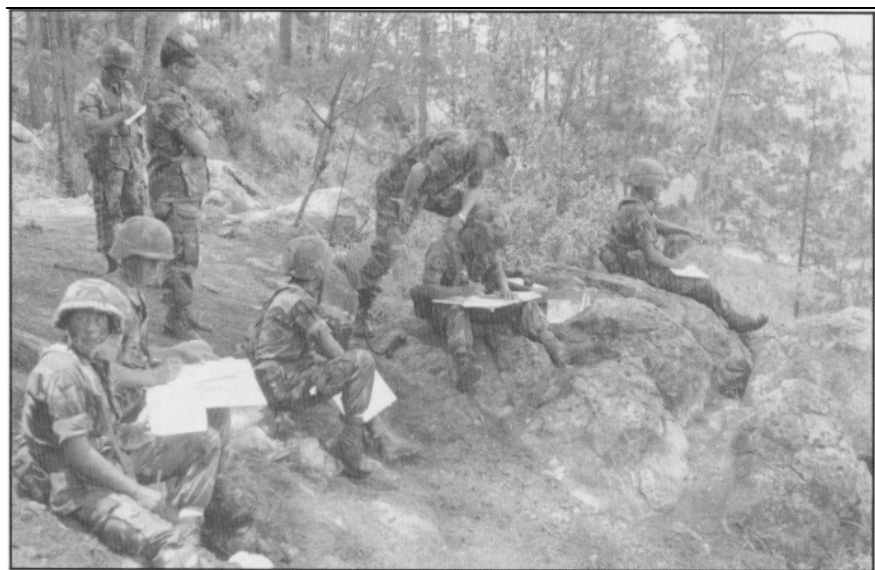
In fact, rather than a decrease in or elimination of the importance of LIC in the US security calculus, LIC will become more important to US security interests. The traditional East-West based threat is diminishing as we see a



An 82nd Airborne Division officer coordinates with Caribbean peace force soldiers in Grenada.



2-8 FA moves to Coco Solo in Operation Just Cause.



LTC Glenn Weidner

Field Artillery Training Center soldiers train Honduran Redlegs.

decline in Soviet Third World exploitation and in the ability of either the United States or the Soviet Union to dominate an unstable situation. But the two can jointly dominate, influencing unstable situations in concert.

LIC and Military Missions

The emerging threat represented by the LIC environment differs significantly from that of the Cold War. Its origin isn't based primarily on a potential adversary's ability to raise, train, sustain and project military forces or on an assessment of its weapon systems capabilities.

April 1991

Instead, the LIC threat is the product of worldwide trends that encourage instability and the breakdown of order.

Many conditions can destabilize an area and, potentially, cause a breakdown of order: economic conditions, to include North-South disparities and rising expectations; harsh authoritarian, exploitative or ineffective governments; religious controversy; tribal, ethnic and racial conflicts; political subversion; overzealous nationalism; contending ideologies; and significant population increases and migration. In itself or manipulated by hostile groups or states, the resulting turmoil may be more

significant than the threats of the Cold War.

It's within this environment that many throw up their hands and declare the military has few roles since LIC may call for using non-lethal military capabilities to support the economic, political and informational tools of national power. This is far from the truth. The military has many capabilities ideally suited for the LIC environment, and the military must, therefore, come to grips with and exploit these capabilities.

Understanding that the threat is different and the military's involvement in LIC will emphasize the support (non-lethal) role, we can address the military's missions in a LIC environment. The missions can be categorized by four types of operations: support for insurgencies/counterinsurgencies, peacekeeping operations, contingency operations and combating terrorism. Key in all four types of operations is the element of civilian control and predominance of military use in the non-lethal mode.

FA Roles

For the Field Artillery, its effectiveness in the LIC environment won't come so much from a willingness to accept LIC as the emerging, dominant environment of the future, but from our willingness to change traditional mind-sets regarding the use of Field Artillery. The LIC environment won't stress using the artillery's principal weapons systems as much as artillerymen themselves: their knowledge, abilities and interaction with their equipment. Therefore, it's important to not only stress the type of artillery operations, but also the type of LIC roles for artillerymen that may be new or, at least, rare. We can examine these roles from the artillery perspectives of Shoot, Move and Communicate and an additional perspective, Command and Control.

When discussing the shoot implications in a LIC environment, the primary factor is coalition coordination. Not only will fire support planning and coordination with host nation and joint elements become more important, but also we may have to coordinate with civilian authorities and support civilian law enforcement organizations or operations.

Artillerymen will face other unique training and operational considerations. When training others (and ourselves in an austere environment), we may have to make maximum use of the 14.5-mm subcaliber trainer, designing a range and training program for it—all in a foreign language. There must be continued emphasis on manual fire direction, especially when working with host-nation units that lack the level of automation that we enjoy. Another area of increased emphasis will be controlling fires in military operations in urban terrain (MOUT) and, possibly, the need for new types of ammunition. Renewed interest must be placed on massing the fires of dispersed artillery units, down to individual howitzer sections. This is not only an imperative for self-protection, but also for providing the mass support that many now take for granted.

The artillery LIC implications from the move perspective are a matter of survival. For many years, we've stressed the need to move to survive. But in a LIC environment, fixed-base locations co-occupied with other elements—host nation, joint or civilian—may become the norm. This will require us to emphasize force protection not only from the expected adversary, but also from the unexpected terrorist.

When movement is required, the preferred time will be at night and the method by air. However, we also must consider movement by sea. When ground movement is necessary, we may have to use local assets and consider the ramifications of moving through an urban area or among the civilian populace versus the traditional military zones.

In the area of communicate, the LIC implications for the artillery are similar to those we've projected for a number of years. We need longer range, more durable and secure communications devices to accommodate the anticipated dispersed command and control of artillery units. The ability to communicate via satellite will take on increasing importance.

A key will be our ability to communicate



In Grenada, an 82d Airborne Division soldier maintains communications with higher headquarters.



Working with foreign countries is not new to the US Army. Here a German soldier explains his sight to an American Redleg from 3-35 FA.

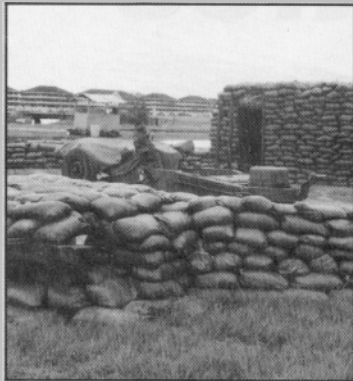
with host nation or civilian organizations. This implies less reliance on current sophisticated systems such as the tactical fire direction system (TACFIRE) and more on systems that can quickly communicate fire plans, etc. Such systems may be as simple as a telefax-type network, using off-the-shelf equipment.

The additional area of command and control probably has the most challenging implications for the artillery. The

emphasis on control of intelligence in the traditional sense will decrease. Human intelligence (HUMINT) will increase in importance, and the ability to rapidly exchange and analyze intelligence information will be an imperative. Fire plans will require a greater integration of intelligence information.

Command may no longer be just of US units but may include host-nation or civilian-type units. In addition, an artilleryman who might command a

Operation Just Cause Rules of Engagement



7-15 FA, Panama



B/2-8 FA, Panama

A wallet-sized set of these instructions were issued to soldiers in Just Cause, December 1989 in Panama. In this low-intensity conflict, firepower constraints were necessary "because the plan was to defeat the Panamanian Defense Forces one day and rebuild the country the next . . . [It had to be] clear to US forces and the Panamanian people that the US had declared war only on [Manuel] Noriega and his forces—not the Panamanian people, their homes and their property" ("Operation Just Cause: Joint Fire Support in Low-Intensity Conflict," Major Samuel S. Wood, Jr., Field Artillery, *Military Review*, March 1991.)

1. When possible, the enemy will be warned first and asked to surrender.
2. Armed force is the last resort.
3. If civilians are in the area, do not use artillery, mortars, armed helicopters, AC-130s, tube or rocket-launched weapons or M551 main guns against known or suspected targets without the permission of a ground maneuver commander, lieutenant colonel or higher (for any of these weapons).
4. If civilians are in the area, close air support (CAS), white phosphorus and incendiary weapons are prohibited without approval from above division level.
5. Avoid harming civilian property unless necessary to save US lives.



A 2-8 FA radar section, 7th Infantry Division (Light), gets ready for airmobile operations in Just Cause.

mixture of forces could fall under a host nation or civilian commander. Thus, the different layers of a chain of command could have a "mixed bag" of forces and commanders. This introduces new challenges, especially if it means responding to a non-military command structure.

Important factors such as discipline, rules of engagement and soldier education become more critical in a LIC environment. The interaction with local authorities brings increased emphasis on understanding the appropriate role for public affairs and civic action operations.

More and more, the artillery unit commander must become aware of the political and economic implications of his unit's presence in an area. The possibility of having to contract for support or using support from the host country will become the norm rather than the exception.

Considering the implications of the LIC environment on the artillery, the challenges not only will come from doing business in a new way, but also will come when developing innovative training programs and measures of training success for the LIC environment. We can meet these challenges if we're willing to

embrace the LIC concept and understand its implications.

This is not to say that we, as artillerymen, must de-emphasize our traditional roles and missions; we must maintain the ability to bring massive firepower to bear on the enemy with all our conventional and nuclear capabilities. But we must be skilled in both our traditional and LIC non-traditional roles and missions, for the emerging world environment is increasingly emphasizing the importance of LIC, and artillerymen must be prepared.

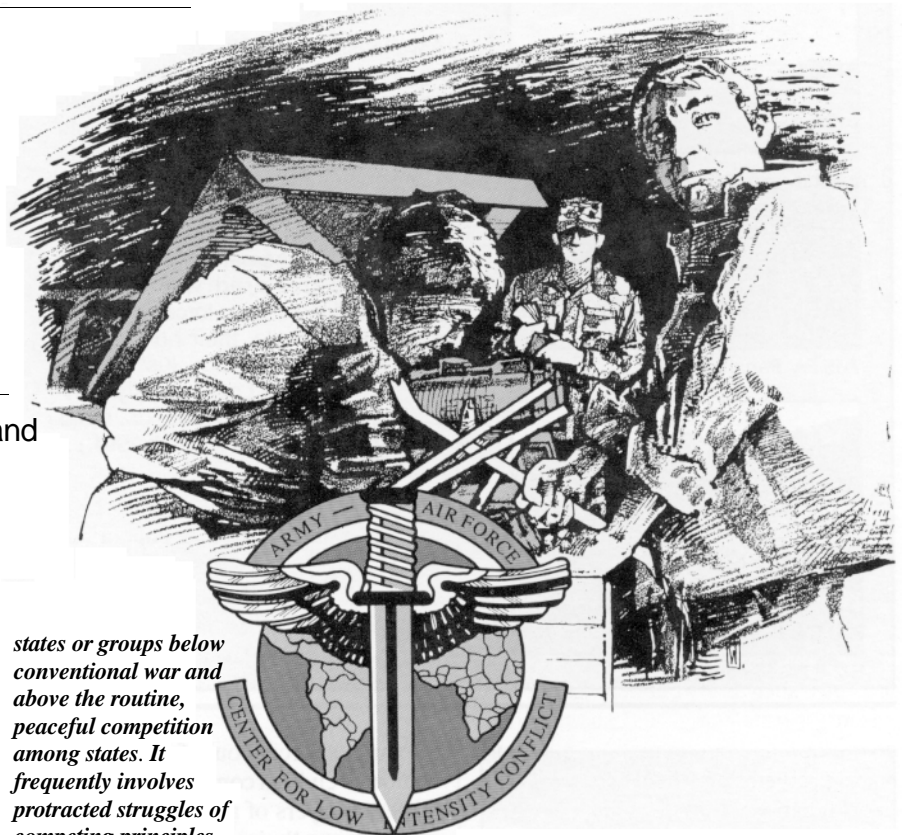


This article and the next one, "Counternarcotics—the Army's Unique Challenge," is by the same author. His biography is on Page 10.

Counternarcotics—

the Army's Unique Challenge

by Colonel Thomas E. Swain and Major Richard A. Corson, SF



For many years, military scholars have been examining and debating issues relating to conflicts short of war—those conflicts above routine peaceful competition, now called low intensity conflicts (LIC). The interplay of key events has heightened the intensity of the debate. These events include the War on Drugs, the virtual collapse of Eastern Europe and the increase of Third World instability.

Of these events, combating illegal drugs is the one of most immediate domestic concern, with the influx of illegal drugs in the US of almost crisis proportion. It is, therefore, appropriate to examine the role of the military in combating this flow of illegal drugs. But one must first understand the relationship between military counternarcotics (CN) support and the military's roles and missions in a LIC environment. United States policies and emerging military doctrine both specify the link between CN and LIC.

There are many opinions as to what LIC encompasses, but it isn't the purpose of this article to debate these opinions. The following definition of LIC establishes a basis for discussion and is the one approved by the Joint Staff (JCS Pub 1-02 *Department of Defense Dictionary of Military and Associated Terms*):

Low intensity conflict is a political-military confrontation between contending

states or groups below conventional war and above the routine, peaceful competition among states. It frequently involves protracted struggles of competing principles

and ideologies. Low intensity conflict ranges from subversion to the use of armed force. It is waged by a combination of means, employing political, economic, informational and military instruments. Low intensity conflicts are often localized, generally in the Third World, but contain regional and global security implications.

It's important to note the definition of LIC is from a United States' perspective. What we see as LIC may be a crisis or a matter of national survival to a friend or ally.

The Army-Air Force Center for LIC has graphically depicted the LIC concept in the figure. It shows an operational continuum divided into three environments that range from peacetime competition to war; military involvement relates to all three environments, with LIC spanning the middle two. The figure also shows the interrelationship of the operational continuum to the categories of LIC.

The recent dramatic events in the world—the fall of the Berlin Wall, the democratization of many communist governments in Europe, the incursion into Panama and elections in Nicaragua—have caused great debate as to what our national military strategy should be. The US Army's senior leadership understands these changes and the need for focusing attention on the emerging LIC threat environment while preserving our priority of maintaining a credible nuclear and conventional deterrent force.

The War on Drugs, or CN operations, is part of and complementary to the Army's role in LIC. To see how CN links with LIC, we'll discuss their connectivity in US policy, in military doctrine and in their characteristics. Next, we'll discuss the three categories of LIC influenced by CN operations. Finally, we'll examine how the Army's mission and support functions naturally lend themselves to our proactive involvement in CN operations as a part of LIC.

CN and LIC Links

The President and Congress have directed the Department of Defense (DoD) to support the National Drug Control Strategy. Understandably, the Army is a key player in CN operations. If it's to avoid accusations of "dragging its feet," the Army must project a proactive attitude about its involvement.

There are several documents that define US policy and military doctrinal links of CN and LIC. Joint Pub 3-07 *Doctrine for Joint Operations in LIC* and *FM 100-20/Air Force Pamphlet (AFP) 3-20 Military Operations in LIC* specify CN operations as a part of LIC under the category of contingency operations. Other documents, such as National Security Decisions, National Security Decision Directives and the United States National Security Strategy for 1990 all show direct or indirect policy links between CN and LIC.

This linkage is further strengthened by the common characteristics that exist between CN operations and LIC. Some of these include trafficker and insurgent linkages, such as the Sendero Luminoso and drug traffickers in Peru; political corruption and collusion; and endemic social problems prevalent in many Third World nations. Other common characteristics are environmental consequences caused by "slash and burn" activities like those in Bolivia and Peru; border and immigration problems like the ones on our own border with Mexico; and challenges to national sovereignty, such as in Colombia created by the drug cartels.

Based on the definition, documents and common characteristics, the fight against narcotrafficking can be overlaid onto the operational continuum. As shown on the top of the figure, CN spans the continuum from routine peacetime competition through conflict, much of which also falls in the LIC environment. What the figure doesn't show is which of the four operational categories of LIC (peacekeeping, contingency operations, insurgency/counterinsurgency and combating terrorism) are impacted by CN. And CN impacts three of them.

Current documents consider military support for CN primarily in LIC's contingency operations. However, closer examination shows insurgency/counterinsurgency and combating terrorism also relate to CN operations, but in different ways.

In LIC contingency operations, the military could support CN operations in source countries, against drugs in-transit or in the United States. The military could be involved in strikes and raids (very sensitive—would require high-level direction) in support of US civil authorities and in security assistance surges. To a lesser degree, the military may support CN operations linked to other contingency operations, such as non-combatant evacuation, rescue and recovery operations, disaster relief and shows of force.

Under LIC support for insurgency/counterinsurgency operations, there are eight categories of military involvement. Of the eight, only one category is in support of CN operations—drug

interdiction, support that will most likely occur in source countries or while drugs are in-transit. But CN can affect the remaining seven categories: intelligence operations, logistical support, civil and military operations, humanitarian and civic assistance, populace and resource control, joint and combined operations and tactical operations. Military involvement in these categories would be under the rubric of LIC rather than CN.

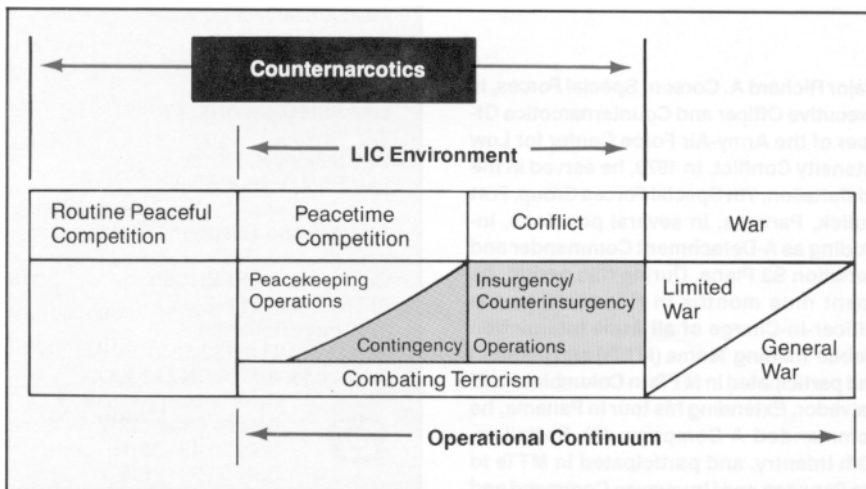
The final LIC category related to CN operations is combating terrorism. While there isn't necessarily a direct link, operations in source countries or the US may require military support. There's a very real and growing link between terrorist elements and the drug cartels and producers. Evidence of this is repeatedly seen in Peru with the Sendero Luminoso and drug traffickers and in Colombia with the widespread bombings and assassinations linked to drug cartels.

Army CN Activities

In discussing military involvement in CN operations, the military must understand who's being supported. The public's perception of the military's involvement in CN operations is critical to the success of our national strategy. Until recently, the public and Congress may have viewed the military as "dragging its feet" in supporting the national effort. The military must understand this perception while articulating its own legitimate concerns, if it's to be legally and effectively involved.

In fact, the military is involved. A more appropriate term for its earlier involvement may be a "cautious engagement" rather than "dragging its feet." The military has learned from bitter experience that it must have public support and be backed by sound policy for any campaign to be a success. Moreover, we can't overemphasize that the military is a supporting player in the CN arena as it is in any LIC scenario. That support relates directly to Army mission areas and is applicable to the Total Army.

Active and Reserve Components' combat, combat support and combat service support units participate in CN operations. The National Defense Authorization Act of 1989 designated DoD as the lead agency for the detection and monitoring of; integration of the command, control, communications



Operational Continuum and LIC from a US Point of View. This graphic shows where LIC and counternarcotics falls in the US joint concept of the overall operational continuum (Army-Air Force Center for LIC, Langley AFB, Virginia).

and intelligence architecture for; and enhanced use of the National Guard for CN operations for drugs in-transit.

The Army has two supporting roles. First, it provides trained, capable forces to commanders-in-chief. Second, under Title 10 of the US Federal Code, it provides assets and support to Drug Law Enforcement Agencies (DLEA) and cooperating foreign governments. Currently, National Guard units are executing as many as 16 missions a day under Title 32 (State Status).

The Total Army support, direct and indirect, ranges from training US and host nation DLEA and military personnel, assisting in operational planning, sharing intelligence and other information and providing logistical support, equipment loans and the use of military facilities. The training is conducted at US training centers and by mobile training teams in the host nations.

In addition, the DoD, particularly the Army, is providing military intelligence analysts, planners and liaison personnel to DLEAs that have requested them. Some of these agencies include the Department of State, the Drug Enforcement Administration (DEA) and the Office of National Drug Control Policy. The Army also has provided staffing to Joint Task Forces (JTFs) 4 and 5, which aid in executing requests and missions for the Atlantic Command (LANTCOM) and Pacific Command (PACOM), respectively.

The new JTF 6, a Forces Command (FORSCOM) entity that operates along our southwestern border, is manned primarily by Army personnel. JTF 6 supports interagency law enforcement efforts to stop the flow of drugs across the US' southern border.

These three JTFs provide liaison between the DLEAs and the supporting combatant commands.

Summary

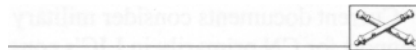
The Army is involved at all levels in support of CN activities. These activities have a direct doctrinal and operational link to LIC, which is the security challenge most likely to face the Army in the 1990s.

Public pressure has elevated awareness of the drug crisis with a corresponding response from both our executive and legislative branches. This has resulted in DoD's support to CN becoming a matter

of law. The Army is committed!

If our nation is to win the fight with the drug barons—and the public thinks it's worth fighting—the Army must continue to enhance its proactive posture. By seizing the initiative now and providing a coherent strategy, realistic goals and well-reasoned funding requests, the Army can help win the War on Drugs. And we must win—this is the only war killing 20,000 American children each year.

CN is truly low intensity conflict—a war of shadows.



Colonel Thomas E. Swain is Commander of the Army-Air Force Center for Low Intensity Conflict, Langley AFB, Virginia. Prior to his current assignment, he served as Chief of Staff of the 25th Infantry Division (Light) and commanded the 25th Division Artillery, both at Schofield Barracks, Hawaii. Colonel Swain also commanded two batteries, one in Germany and one in Vietnam, and, for three years, the 3d Battalion, 319th Field Artillery, 101st Airborne Division (Air Assault), Fort Campbell, Kentucky. While commanding the latter, he also commanded US Forces Northern Honduras, Joint Task Force 11, Joint Operational Exercise Ahuas Tara II for five months in 1983. He holds three master's degrees: mathematics and operations research, both from Rensselaer Polytechnic Institute, New York, and business administration from C.W. Post College, also in New York.

Major Richard A. Corson, Special Forces, is Executive Officer and Counternarcotics Officer of the Army-Air Force Center for Low Intensity Conflict. In 1979, he served in the 3d Battalion, 7th Special Forces Group, Fort Gulick, Panama, in several positions, including as A-Detachment Commander and Battalion S3 Plans. During this period, he spent nine months in Honduras as the Officer-in-Charge of all Arms Interdiction Mobile Training Teams (MTTs) and planned and participated in MTTs in Columbia and El Salvador. Extending his tour in Panama, he commanded A Company, 4th Battalion, 10th Infantry, and participated in MTTs to the Peruvian and Uruguayan Command and General Staff Colleges. Major Corson also served as the S5 Plans and Targeting Officer for the 1st Special Forces Group, Fort Lewis, Washington.

Army Reserve Branch Teams Personnel and Telephone Number Changes

Officers

LTC John A. Haas
Field Artillery
Branch Chief
Lieutenant Colonels

MAJ David L. Pendergrass
Majors

MAJ Kenneth M. Lee
MAJ Mark V. Laney
Captains

CPT Thomas N.J. Schellingerhout
Lieutenants

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Commercial (314)
538-3871/2109
Toll Free 1-800-325-4950



Enlisted

MSG Charles A. Thompson
Field Artillery/Air Defense
Branch Chief

SFC George M. Little
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SFC Johnny R. Fisher
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Fire Support

Deconfliction of Special Forces Operations

by Captain Alexander C. Fiore

Army Special Forces (SF) units operating in support of or with conventional forces require time-sensitive, continuous deconfliction of fire support to prevent friendly casualties and avoid duplication of efforts. The dynamic deconfliction process integrates and synchronizes complementary force operations to achieve maximum combat power at the right time and place to accomplish mission objectives.



In a 1982 study, Lieutenant Colonel Charles R. Shrader stated that past war experiences show that mechanical failure rarely was the direct cause of friendly combat losses ("Amicide: The Problem of Friendly Fires in Modern War," Combat Studies Institute, Fort Leavenworth, Kansas, 1982). Rather, he says the primary cause of friendly casualties is human error.

The study presented examples of human failures contributing to friendly force losses. These include a lack of fire discipline imposed by calm and decisive leaders, lack of and (or) improper coordination by commanders and staff officers and physical effects, such as the disorientation or carelessness of pilots, gunners or crewmen.

The fire support system provides the capability to avoid friendly casualties. It uses established procedures to coordinate, control and integrate a variety of fire support assets and SF operations. But to understand how to use the system to deconflict SF operations, you must first understand the SF organization.

SF Organization

SF command structures vary from theater to theater, representing a blend of mission requirements and commander-in-chief's (CINC's) discretion. But doctrinally, the SF chain of command typically begins at the theater Special Operations Command (SOC). (See the figure on Page 12.)

SOC. The SOC is a subunified command (e.g., Special Operation Command, Europe in United States European Command). It exercises centralized control of the command's Joint Special Operations Forces (JSOF), to include Army SOF (ARSOF). The SOC commander develops special operations, using the theater CINC's strategic guidance. The ARSOF, under the operational control of (OPCON) the SOC, usually has one or more Special Forces Groups (Airborne)—SFGAs.

SFGA. This is a unique combat-arms organization. It has a group headquarters, company headquarters, support company and three SF battalions. It plans, conducts and supports tactical special operations in specified areas, as directed by a theater SOC or the National Command Authority.

The SFGA's five major missions are unconventional warfare (UW), foreign

internal defense (FID), direct action (DA), special reconnaissance (SR) and counterterrorism (CT). The SF group usually establishes a SF operational base (SFOB) to command, control and support its subordinate elements.

SF Battalion (Airborne). Each of the battalions in the SFGA has a headquarters detachment, a support company and three SF companies. The battalion can establish a forward operational base (FOB) to prepare, deploy, control and support its SF teams.

The FOB may be organized by area or functionally. If the FOB is organized by area, the SF battalion commander is responsible for operations in a theater or in support of a specific conventional force. If the FOB is organized functionally, the commander is responsible for a type of operation throughout the group's operational area (e.g., direct action, unconventional warfare, special reconnaissance, etc.).

SFOD-B. The SF Operational Detachment-B or SFOD-B, is the headquarters element of each of the battalion's SF companies. It commands and

controls from one to six SF Operational Detachment-Alpha (SFOD-A), usually six detachments.

Some of SFOD-B's functions include conducting operations, training teams, operating an advanced operations base (with personnel and equipment augmentation), serving as the command and control element for specific areas during an unconventional warfare mission and serving as a Special Operations Command and Control Element (SOCCE) at the supported operational headquarters, usually at the corps level or higher.

SFOD-A. The basic element of SF is the SFOD-A, often referred to as the A Detachment. It's a 12-man organization under the command and control of an SFOD-B and is commanded by a captain. The members have expertise in operations, intelligence, heavy and light weapons, engineering, communications and medical skills.

The SFOD-A conducts unconventional warfare and foreign internal defense missions by organizing, equipping, training, advising or directing and supporting friendly indigenous military

or paramilitary forces and host-nation armed forces in combat operations. During both these missions, the Detachment can train and advise up to a battalion-sized organization.

SOCCE. The SOCCE is an 11-man section of one of the battalion's SFODBs. The SF group can put it under the operational control of a conventional forces' higher headquarters and augment it with an equipment package to perform several functions.

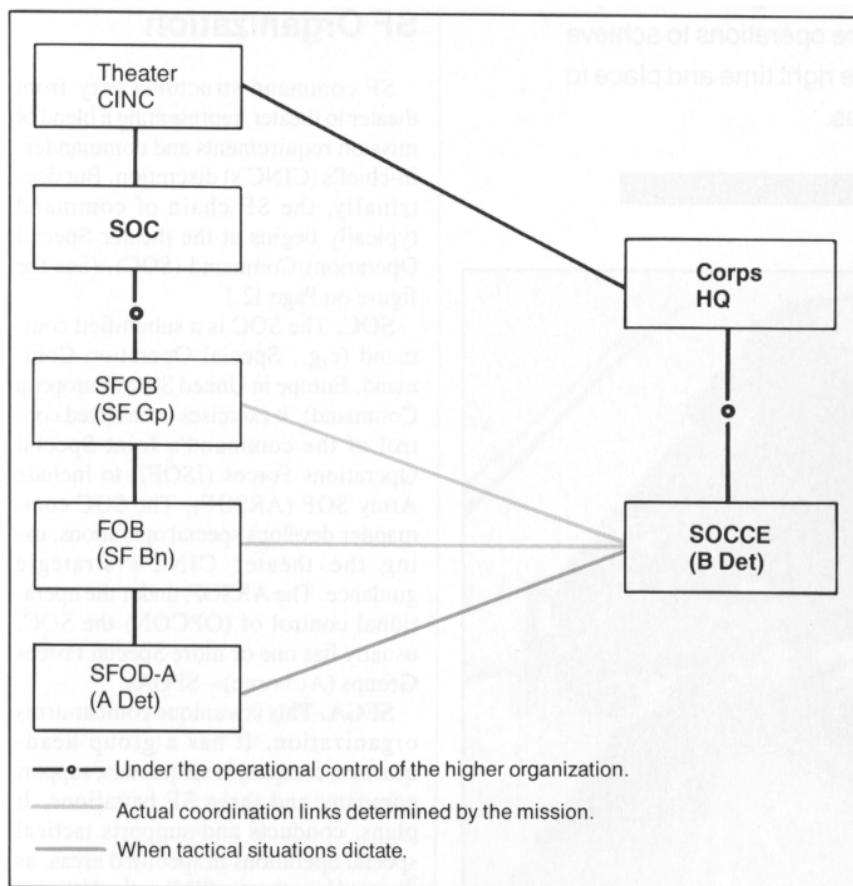
The SOCCE mans a liaison cell at the higher headquarter's tactical operations center (TOC) to advise the commander on SF operations and advise the battalion's FOB and the group's SFOB of the commander's intentions and requirements. It also establishes secure communications for time-sensitive message traffic among the FOB, SFOB and supported conventional unit and communicates with an SFOD-A during specific missions and (or) linkup operations.

The SOCCE is the principal SF organization responsible for deconfliction and the command and control of SF units operating with conventional forces.

Deconfliction Process

The success of deconfliction depends on constant coordination among the SOCCE, fire support and current operations cells of the supported force and the battlefield coordination element (BCE).

At the main command post (CP), the



SF command structures vary from theater to theater, but doctrinally it begins at the SOC. The SOCCE is primarily responsible for operational and fire support deconfliction for SF operating with conventional forces.



An SF A Detachment conducts a reconnaissance patrol.



An SF mountain team prepares for a mission.

fire support cell coordinates deconfliction directly with the SOCCE, feeding it current information on intelligence, order of battle, locations of friendly units and the commander's intent. The SOCCE, in turn, provides information on deployed SF elements' missions or intent, within operational security (OPSEC) limits. The SOCCE also coordinates the current situation, commander's intent and future operations with the G2 and G3.

The fire support cell and SOCCE ensure the BCE, which is collocated with the tactical air control center (TACC), knows the location of all restrictive and permissive fire support coordination measures. The BCE coordinates all Army requests for tactical air support. It maintains the current ground order of battle for the TACC on a 24-hour basis during operations.

Before launching preplanned tactical air missions, the TACC checks with the BCE to validate the mission and its priority. The BCE coordinates with the liaison representatives and fire support cells of the supported corps. The fire support cell coordinates tactical air support through the air support operations center (ASOC) or tactical air control party (TACP). If a SOCCE is present, tactical air support also must be coordinated (deconflicted) with SF operations. Deconfliction requires the timely and continuous exchange of information among the SOCCE, fire support cell and

BCE to ensure proper fire support coordinating measures are used.

With the fielding of the Army tactical missile system (Army TACMS), long-range missile fires also require deconfliction with the SOCCE.

At the corps level, the daily targeting board is the focal point of deconfliction. It plans future operations but doesn't substitute for the continuous updating among the other elements to ensure the fire support control measures are used.

When SF are conducting operations in mid to higher intensity conflicts, the primary concern is the deconfliction of the Air Force's air interdiction (AI) campaign. Battlefield air interdiction (BAI), a subset of AI, must be factored into the deconfliction process. The emphasis on air systems is because the usual SF operating area is beyond the fire support coordination line (FSCL) and extends to the theater army (TA) commander's area of interest.

In lower intensity conflicts, the deconfliction process is more complex because SF will operate within the range of Field Artillery systems and other ground indirect weapon systems, as well as air systems. This environment requires increased coordination between conventional and unconventional forces.

The following is an example of the deconfliction process. The changing tactical situation causes an SF detachment (SFOD-A) operating in a specific area to move into a target area or out of a

restricted fire area. This change must be deconflicted by the SFOB through the SOCCE.

At this point, face-to-face interaction must take place among the fire support cell and SOCCE in the main CP to ensure the team's movement is factored into fire support planning. The SOCCE keeps the fire support cell informed of the locations of SF teams operating in the area of interest and requests restrictive fire support measures.

Deconfliction continues as the enemy situation or the commander's intent changes.

Conclusion

Deconfliction of SF operations is of paramount importance to ensure no friendly casualties occur and that we totally integrate and synchronize all operations on the AirLand Battlefield. This is especially true when SF are operating in support of or with conventional forces.

To support the commander at any level with accurate, effective fires, Field Artillerymen must understand how to deconflict fires for SF—small but essential components of the AirLand Battle team.



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The Unsung Heroes:

by Captain Leslie A. Belknap

In the book *The 25-Year War*, General Bruce Palmer remarks that the US military advisers were often "the unsung heroes in Vietnam, while most of the American fighting units took the limelight and garnered most of the rewards." With the plethora of Vietnam War literature currently available on the US military's role in Indochina, the



crucial role of the American advisory effort to the Army of the Republic of Vietnam (ARVN) is an often overlooked aspect of the US involvement. More specifically, the closely related issues of the American Field Artillery's (FA's) advisory efforts in Vietnam and the impact of those issues on the performance of the South Vietnamese artillery receive only passing mention.

This article examines obstacles the American artillery advisers had to overcome while trying to develop the ARVN FA in early 1965 through early 1969. The period was critical because of the American ground intervention and massive buildup of combat forces, often referred to as the "Big Unit War."

Included are quotes from both active and retired artillerymen I interviewed during the past three years.

The Early Efforts

Similar to the beginning of the US advisory efforts, the American artillery's advisory role had a modest start. During the 1950s, most artillery advisers were at the highest levels of the Military Advisory Assistance Group (MAAG), part of the Military Assistance Command, Vietnam (MACV). After the French departure, American artillerymen helped reorganize and train the newly formed ARVN FA. However, these advisers rarely had contact with individual artillery units.

It was only after President Kennedy's decision to increase US advisory assistance in late 1961 that artillery advisory teams began to work with

ARVN artillery battalions. As Figure 1 indicates, the artillery advisers were part of a much larger effort.

Additional US artillery advisers were at ARVN corps and general staff levels. However, the core of the American FA advisers was at the battalion level in three-man Artillery Battalion Advisory Teams. (See Figure 2.)

A number of difficulties, many generic to all advisers, confronted the FA advisers. Inherent in the role was that the adviser could only suggest changes, regardless of how bad things were. The language barrier, perhaps the greatest obstacle, impacted significantly on the adviser's ability to render assistance. Few Vietnamese artillerymen spoke English until the mid-1960s.

In his excellent monograph, *Field Artillery*, Lieutenant General David E. Ott mentions another problem: differing Vietnamese and American philosophies concerning the nature of change, i.e., how fast change could and should occur. Also, the short duration of the advisory tour, 12 months (many times less), adversely affected the continuity of the advisory effort.

For the more aggressive American advisers, the Vietnamese unwillingness to undertake offensive operations against the Viet Cong (VC) and later the North Vietnamese Army (NVA) was frustrating. The ARVN also were unwilling to press the attack once contact was made with the enemy.

Finally, South Vietnam's unstable political-military environment in the

Redleg Advisory Efforts in Vietnam

1965-1969

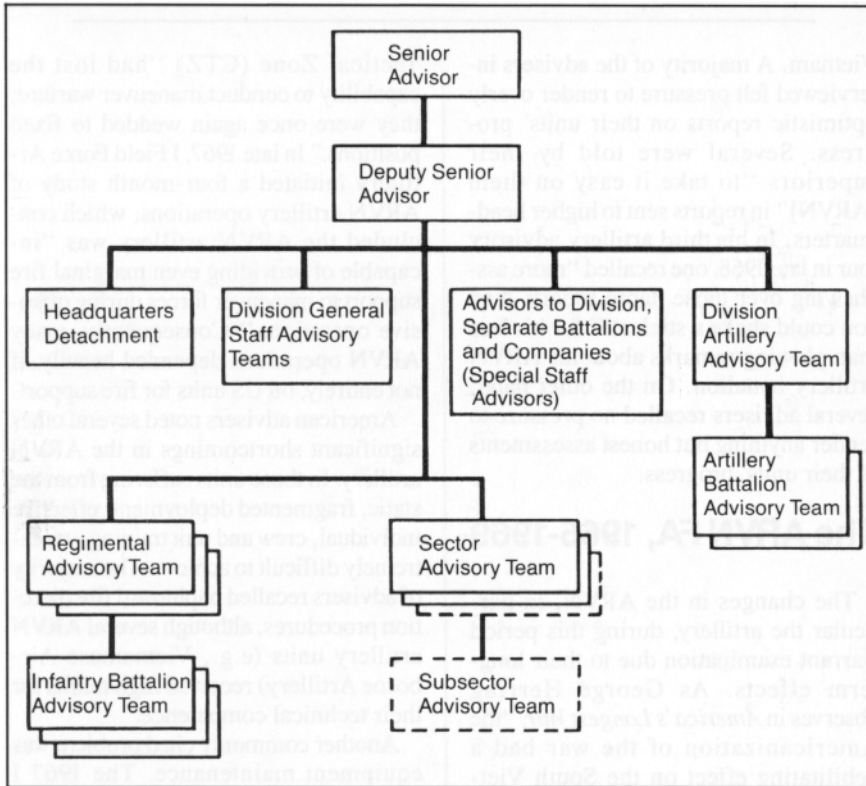


Figure 1: Typical Division Advisory Team—Vietnam. This diagram, although published in 1967 (*Military Review*, December, Page 28), is applicable to the advisory organization for the ARVN divisional units in the early 1960s.

FA Unit Advisor	Captain
Asst Unit Advisor/Firing Battery Advisor	First Lieutenant
Light and Medium FA Crew Advisor	Staff Sergeant

Figure 2: The Artillery Battalion Advisory Team. This three-man team's mission was to advise and assist the commander (ARVN) in his organizational training and tactical and unit responsibilities, including providing him and his staff guidance on operations and procedures. Responsibilities extended to the company level and called for close liaison with the unit during combat operations and training.

early 1960s affected the actions of ARVN units and served to frustrate American advisers. In short, they faced a most challenging environment.

The early American artillery advisers faced several other unique challenges, due in part to the "legacy of the French." One of these challenges was a shortage of

experienced, well-trained ARVN artillery officers and NCOs because the French occupied these leadership positions in the Vietnamese artillery units until 1955. Although a large number of ARVN officers and NCOs received training at the Field Artillery School, Fort Sill, Oklahoma, during the next 10 years, the lack of depth of skilled leaders plagued the ARVN artillery units throughout the advisory years. As one adviser noted in 1964, "the loss of one key player—fire direction officer, cannon section chief—usually meant severe problems for that unit."

The early Redleg advisers encountered several problems in the ARVN's tactics and techniques of artillery employment. The most noteworthy of the French practices copied by the Vietnamese was the purely defensive use of their howitzers in static positions. Frequently the ARVN artillery was scattered throughout the countryside in single or two-gun positions in support of infantry platoons or company outposts. Many of the advisers found that a "defensive attitude had permeated the ranks of the ARVN artillery," which adversely affected unit morale and made the adviser's job more difficult. Convincing the ARVN commanders to move their guns out of the static outposts to support offensive operations became a major challenge.

The Crucial Years, 1965-1969

The American decision to commit US ground forces in South Vietnam in early 1965 serves as a nodal point for both the advisory efforts and the development of the ARVN FA. The advisory effort became secondary to the "Americanization of the war" for the next four years.

During this period, most of the ARVN forces, to include its artillery, assumed a pacification role while the US combat forces went after the large NVA and VC units. The ARVN artillery grew only

slightly in size and capability during this period. Perhaps most important for the long term was the growing ARVN dependency on the massive US fire support newly available.

The rapid buildup of American ground combat forces impacted adversely on the FA's advisory efforts in several ways. First, once the American main-force units started arriving in Vietnam, many officers worked very hard to avoid advisory duty. Service with US units was "where the action was." Brigadier General Peter M. Dawkins surveyed 509 officers who served as advisers, and his results show the dramatic change in advisers' perceptions toward advisory duty after mid-1965. (See Figure 3.)

Exactly how much of a negative impact this perception had on the artillery's advisory efforts is difficult to assess. But one FA adviser remembers that during early 1966, he and many of his contemporaries "feared MACV was filling up with misfits—fat majors just off teaching tours at West Point, who had no credibility with ARVN officers."

This quotation parallels another concern in the FA advisory community: the method of assigning artillery officers to advisory duties in MACV. Several former advisers expressed their frustration that many of the best qualified artillerymen were assigned to non-artillery advisory duties, resulting in very little progress being made in ARVN artillery units.

Although far more artillerymen were in MACV than FA advisory positions and the nature of the Branch (at that time, Field and Air Defense Artillery) complicated matters, many Field Artillerymen perceived a personnel management problem. For example, several artillerymen recalled that while many artillerymen were advising ARVN infantry units, a number of Air Defense officers were advising ARVN FA units.

At the same time, the artillery advisers found the ARVN artillery and maneuver commanders more likely to take their advice than earlier. Several advisers recalled that the ARVN units "were quite receptive" to their advice. Certainly their predecessors' efforts helped. But with the large number of US FA units now in Vietnam, the ARVN artillery unit saw its US adviser as one who now had something substantial to offer: access to the massive US fire support and logistical support.

In terms of advisory reporting, things began to change during this period of growing American involvement in

Period*	Career Advantage	Career Detriment
January 1962-September 1965	54.4%	26.5%
October 1965-June 1967	36.0	49.5
July 1967-January 1970	36.1	48.3

*For each period, less than 100 percent of the responses are listed in the combined career categories; some officers surveyed didn't respond or their response didn't fall into either category.

Figure 3: Officer Perceptions of Advisory Duty. Brigadier General Peter M. Dawkins interviewed 509 officers who served as advisers, and his results show the change in their perceptions of the duty's career impact after 1965 (Dawkins: "The United States Army and the 'Other War' in Vietnam; A Study of the Complexity of Implementing Organizational Change"; Ph.D. Dissertation, Princeton University, 1979).

Vietnam. A majority of the advisers interviewed felt pressure to render overly optimistic reports on their units' progress. Several were told by their superiors "to take it easy on them [ARVN]" in reports sent to higher headquarters. In his third artillery advisory tour in late 1968, one recalled "more ass-chewing over those damn reports than you could shake a stick at!" for his less than glowing remarks about his ARVN artillery battalion. On the other hand, several advisers recalled no pressure to render anything but honest assessments of their units' progress.

The ARVN FA, 1965-1969

The changes in the ARVN, in particular the artillery, during this period warrant examination due to their long-term effects. As George Herring observes in *America's Longest War*, "the Americanization of the war had a debilitating effect on the South Vietnamese Army." With American units taking over the main-force war, ARVN units (to include the FA) assumed primary responsibility for pacification efforts. Many ARVN officers considered this very demeaning.

By the end of 1966, more than 60 percent of the ARVN combat units were placed under operational control to territorial sectors in security missions. Naturally, the ARVN artillery's missions and scope of responsibilities were affected. Many of the ARVN artillery battalions were redeployed to static two-gun positions throughout the provinces to provide area coverage, a move that hindered the artillery's development. The ARVN artillery slowly was losing its limited capability to support the sporadic ARVN offensive operations.

One adviser recalled that by early 1966, the artillery units in the III Corps

Tactical Zone (CTZ) "had lost the capability to conduct maneuver warfare; they were once again wedded to fixed positions." In late 1967, I Field Force Artillery initiated a four-month study of ARVN artillery operations, which concluded the ARVN artillery was "incapable of providing even marginal fire support to maneuver forces during offensive operations." Consequently, many ARVN operations depended heavily, if not entirely, on US units for fire support.

American advisers noted several other significant shortcomings in the ARVN artillery. In those units suffering from the static, fragmented deployment, effective individual, crew and unit training was extremely difficult to achieve. The majority of advisers recalled haphazard fire direction procedures, although several ARVN artillery units (e.g., Vietnamese Airborne Artillery) received high marks for their technical competence.

Another commonly cited problem was equipment maintenance. The 1967 I Corps report revealed Vietnamese artillery units as "severely hampered by poor equipment practices and slipshod repair parts support."

From 1965 to 1969, the South Vietnamese artillery's organization and training changed, and the size of the ARVN artillery increased slightly, growing from 27 battalions in 1965 to 30 by the beginning of 1969. (See Figure 4.)

In addition, joint artillery operations and assistance programs increased in late 1967, starting first in the I Corps area and later in the other CTZs. In one program, US artillery units sponsored ARVN artillery units in their area. This program greatly augmented the adviser's ability to help his ARVN artillery unit by providing additional resources for training and technical, maintenance and logistical support. Several advisers, who later served as battalion commanders in

	Jun 1965	Jan 1969
Infantry Division Artillery		
105-mm Battalions	18	20
Airborne Division Artillery		
105-mm Battalions	0*	1
Marine Division Artillery		
105-mm Battalions	1	1
Corps Artillery		
105-mm Battalions	6	2
155-mm Battalions	2	6
Total	27	30

*Airborne "artillery" in 1965 was a 4.2-inch mortar battery.

Figure 4: ARVN Artillery Strengths, 1965 and 1969 (Nguyen Duy Hinh, *Vietnamization and the Cease-Fire*, Washington, D.C.: Center of Military History, 1980).



A US advisor helps train ARVN Redlegs. After the "Americanization of the War," US advisors found the ARVN units much more receptive to their advice.

Vietnam, reported excellent working relationships with their ARVN sister battalions. These assistance programs were the forerunners of the official "Vietnamization" policy adopted in 1969.

The Fatal Addiction

The US provided the ARVN forces with one other form of support, which was to have lasting consequences—massive American fire support. This wealth of fire support could take any of the following forms: light (105-mm), medium (155-mm) or heavy (175-mm, 8-inch) artillery fires, attack helicopter fires, tactical air support, tactical employment of strategic air (B-52 bomber strikes) and naval gunfire support.

By 1968, there were more than 55 US artillery battalions in South Vietnam. Because American advisers were with all Vietnamese maneuver and artillery units, access to this wealth of fire support was

relatively easy. ARVN maneuver commanders grew to depend on US fire support at the expense of the ARVN artillery and preferred US tactical air and attack helicopter support. One ARVN artillery adviser recalled an instance where this preference was fatal:

At Dao Tieng in November 1965, the ARVN 7th Regiment was wiped out in the rubber plantations where we lost six or seven infantry advisers. The 51st ARVN Artillery had assembled six guns (by pulling them out of their static, two-gun positions)—a complete battery—to support the regiment. When the regiment came under attack, the artillery battery adviser contacted the infantry regimental adviser to indicate the guns were in position and ready to fire in support.

Unfortunately, the tac air didn't arrive on time, and by the time the ARVN commander decided to employ the ARVN artillery, it was too late. His unit had been decimated.

Later, from the Vietnamese perspective, Major General Nguyen Duy Hinh concluded the ARVN commanders were—

... used to the employment of massive US firepower, which in some instances amounted to sheer waste. But the habit had been ingrained and was hard to relinquish.

This ARVN "habit" of great reliance on US firepower made the adviser's job of developing the ARVN artillery into a capable and credible fire support organization more difficult. It also severely hindered future ARVN semi-independent or autonomous combat operations for the remainder of the war.

Final Remarks

Although this brief summary of the

artillery's advisory efforts during a crucial period of the Vietnam conflict reflects a critical view, it should not detract from the superb efforts rendered by countless Redlegs. The individual adviser performed well in an advisory system that was far from perfect. Given the technical nature of modern artillery and the numerous obstacles facing the artillery adviser, his job was particularly difficult.

When looking to the Vietnam conflict for "lessons learned," one shouldn't overlook the experiences of the artillery adviser. The study of this aspect of the American war in Vietnam will yield valuable insights for those charged with developing future artillery advisory efforts and for potential participants in an advisory role. This is especially true in a world in which the proper application of firepower remains a key to military success.

This article is Captain Belknap's summary of parts of his history master's thesis: "The US Field Artillery's Advisory Role and the Performance of the Army of the Republic of Vietnam (ARVN) Field Artillery During the Vietnam Conflict, 1950-1975," University of Michigan, 20 December 1988. In addition to the University, copies of the 95-page thesis are on file at Morris Swett Library, Field Artillery School, Fort Sill, Oklahoma, and the US Military Academy at West Point and the Center of Military History, Washington, D.C.

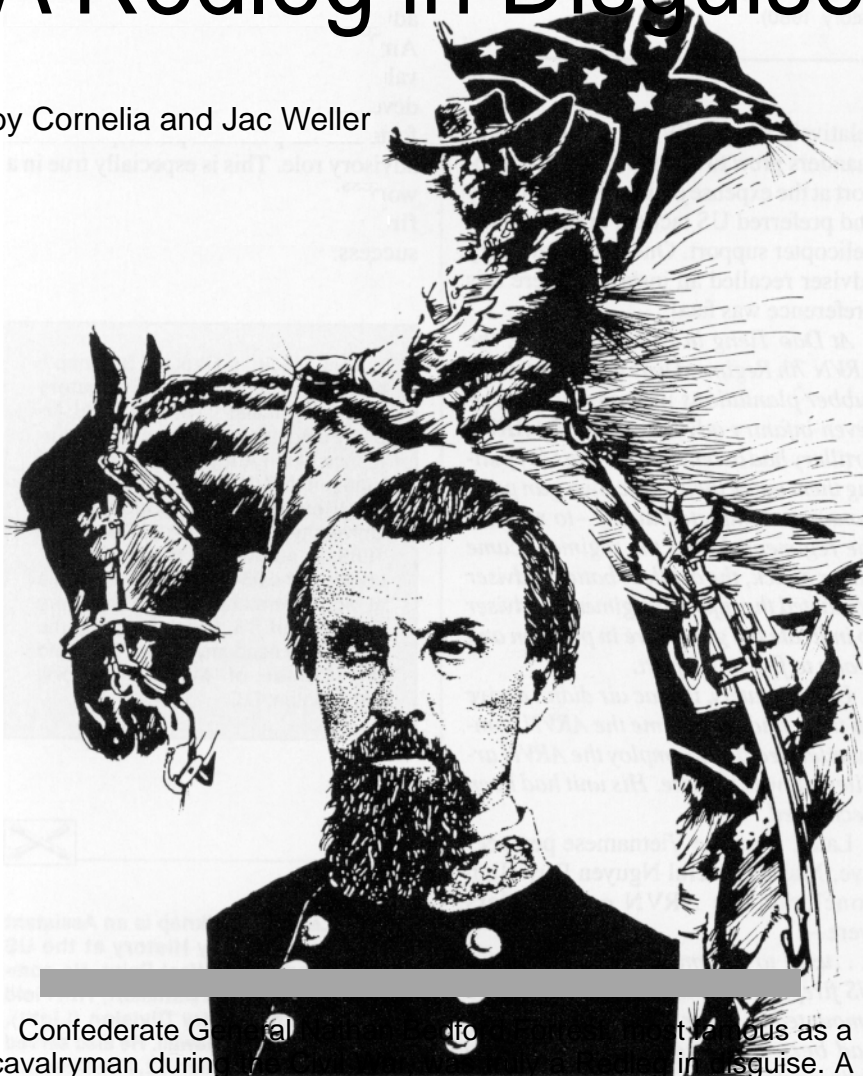


Captain Leslie H. Belknap is an Assistant Professor of Military History at the US Military Academy at West Point. He commanded C Battery, 2d Battalion, 11th Field Artillery, 25th Infantry Division (Light), Schofield Barracks, Hawaii. He also served as Battalion S1, Battalion S2, Fire Direction Officer and Fire Support Team Chief in the 25th Division Artillery. Captain Belknap graduated from the Field Artillery Officer Advanced Course, Fort Sill, Oklahoma, and the Combined Arms and Services Staff School, Fort Leavenworth, Kansas. He has a master's degree in history from the University of Michigan.



Nathan Bedford Forrest, A Redleg in Disguise

by Cornelia and Jac Weller



Confederate General Nathan Bedford Forrest was famous as a cavalryman during the American Civil War. In disguise. A brilliant tactician and fighter, he could wield his saber in man-to-man combat with the best of them. But once Forrest, an uneducated man of humble origins, discovered the utility of Field Artillery, he mastered its operation and employment, using it to best advantage when outnumbered and outgunned.

For example, on 4 November 1864, Forrest fired his artillery on Johnsonville, Tennessee, against a much stronger force. His Confederate Field Artillery opened fire on Sherman's vital supply base at Johnsonville on the Tennessee River. Within minutes, exploding shells kindled fires and set off secondary explosions. Supplies of all kinds accumulated at this Union bridgehead were blazing out of control.

Everything arrived in Johnsonville from the North on steamboats using the Ohio and Tennessee rivers and then was sent on by rail to Sherman's army hundreds of miles to the southeast. If Johnsonville were destroyed by shellfire, the damage to Sherman's army would be serious.

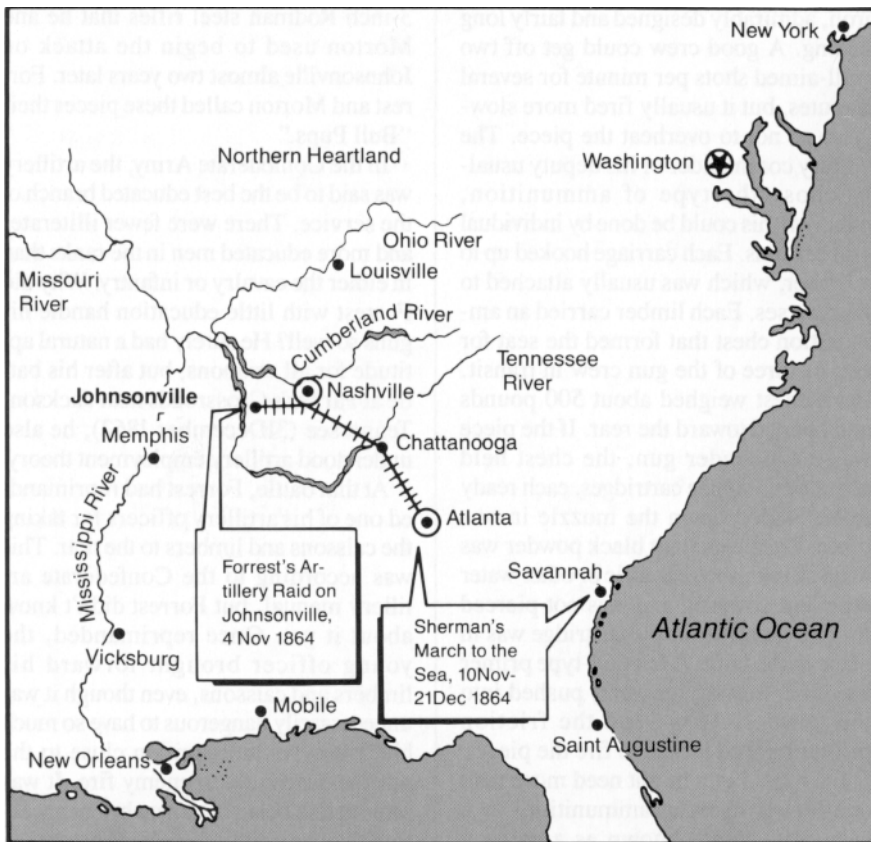
The Rebel guns were dispersed along the western shore of the Tennessee River. They were within range of Johnsonville and four small Union gunboats, but the wide river protected them from counterattack by the Yankees on land. As it happened, both armies fired artillery across the Tennessee—lots of it.

In November 1864, the Confederacy lacked the manpower to cross the Tennessee and fight east of the river, but Confederate Major General Nathan Bedford Forrest thought of an alternative. On this raid his men never set foot on the eastern shore of the river. Johnsonville, the gunboats and several transports caught there were destroyed by fire from his approximately eight Rebel field guns.

Forrest personally commanded one of the first two pieces to open fire, a 3-inch Rodman steel-rifle piece. Major General he might be, he still could accurately shoot any weapon his men were armed with and loved to do it. The other piece was similarly handled by young John Morton, his Chief of Artillery.

Forrest and Morton were giving direct orders to the gun crews and aiming the two pieces over open sights with their hands on pinch bars and elevating screws. When satisfied, they stepped to the side and jerked the lanyards. Other Rebel guns joined in.

The Yankee pieces from the other side were not far behind, timewise. But the Union gunners were at a disadvantage because Forrest's pieces were dispersed among bushes and low trees along the low western shore of the Tennessee River, invisible save briefly when they fired. The Federal artillery pieces in Johnsonville were more numerous and larger but were concentrated, making



Once Confederate cavalrman Nathan Bedford Forrest discovered the tactical utility of Field Artillery, he mastered its operation and employment and used it to best advantage.

them an easy target, and soon were hampered by smoke, flames and secondary explosions.

The cavalry of both sides had raided during the middle years of the Civil War. Forrest and his commands had participated in some of these, either alone or in concert with Morgan and others. What makes the Johnsonville raid unique is that though Forrest lacked the strength to cross the river and destroy Johnsonville in his usual raiders' way, he destroyed it with artillery fire.

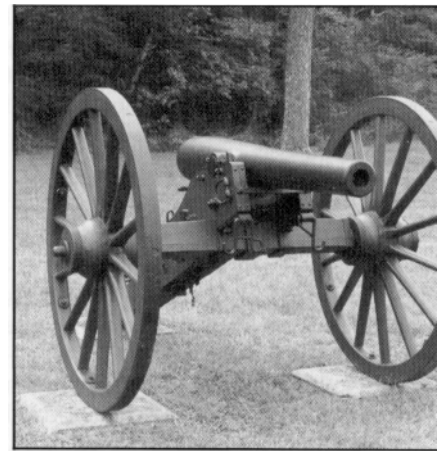
From an artilleryman's point of view, this operation was near perfect. It was fought at the best ranges for the cannons used with the aiming devices and fire control systems of that time. The Tennessee River was wide enough to prevent the effective use of Yankee small arms; the Union guns, including their gunboats, were so concentrated that not many Confederate projectiles missed those targets entirely.

Johnsonville was a strategic supply base for Union General Sherman, who was at that time near Atlanta. Braxton Bragg, Little Joe Johnston and the Gallant Hood of Texas had taken turns

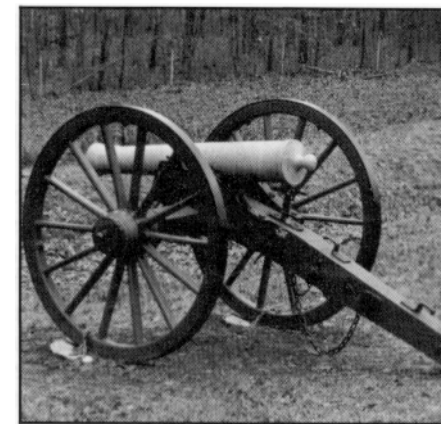
trying to stop Sherman head-to-head. All had failed. Sherman was too good a general and had, by this time, too fine an army. His forces were supported by at least adequate logistics. After some experimenting, Sherman's main supply route from the Union heartland was along the rivers to Johnsonville and then by rail to Sherman's army as it moved south from Chattanooga to Atlanta. By the fall of 1864, most of his food, ammunition and other supplies came through Johnsonville.

Grant had cut the Confederacy in two when he took Vicksburg, Mississippi, 4 July 1863. Now Sherman was about to cut the larger and more important part in two again, the section from Louisiana to Virginia. Both Sherman and Forrest knew the score. If the Federal Army at Atlanta could be fed, supplied with ammunition and provided other things from medicines to blankets, Sherman could destroy Georgia and reach the sea where his army could again receive supplies from ships.

Forrest's thinking was that if Johnsonville could be totally destroyed, Sherman's advance might be held up as surely



One of the original Forrest-Morton Bull Pups now at Chickamauga National Military Park, Tennessee



A 6-pounder brass gun at Shiloh National Military Park, Tennessee.

as if the Confederacy won a pitched battle in Georgia. Old Bedford did destroy Johnsonville, but Sherman wasn't held up. The great Yankee commander abandoned his crippled supply line and began his march to the sea (10 November 1864), living off the country and what his army could carry with it from Atlanta. When the Yankees reached Savannah (21 December 1864), the War was virtually over, although battles remained to be fought.

At Shiloh (8 April 1862), especially against Sherman, Forrest had distinguished himself. Sherman and Forrest then knew each other by sight and began to have a grudging respect for each other. From Shiloh on, Sherman appreciated Forrest's abilities and realized Forrest was his principal danger during the Atlanta campaign.

The Union commander offered a cash reward to anyone who could kill Old Bedford—several lost their lives trying.

Forrest was a master with his personal weapons and had been for many years before the War. He may have been one of the early quick-draw and shoot-to-kill men in what was then the Southwest.

The Anatomy of a Confederate General

Forrest enlisted in the Confederate Army as a private in June 1861, months behind other men who were to become senior Confederate commanders. He appears to have had no military ambition and waited until Tennessee finally voted to secede, two months after Fort Sumter. He was almost 40 when he volunteered. The son of a blacksmith, he was a self-made millionaire and extremely able in business, farming and slave trading. Old Bedford was unique as an entrepreneur in his South, especially since he couldn't read well, having attended school for only months during his entire life and not interested in it even for those short periods.

Governor Isham Harris of Tennessee and Major General Leonidas Polk of the Confederate Army heard of this talented private, ordered him to Memphis and authorized him to raise a cavalry unit on his own. They appealed to Forrest's strong competitive instincts to produce the best unit in the theatre. Forrest spent a lot of his own money, but he had a battalion of eight, well-equipped companies by the early fall of 1861 and was a light colonel. By February of 1862, Forrest, a full colonel with a regiment, had proven himself an excellent fighter, distinguishing himself in several battles.

Artillery Operations, 1861-1865

The field cannons used during the Civil War were primitive by today's standards, even by those of World War I. There were no recoil mechanisms; the only way to absorb recoil was to let the entire piece run back two to 30 yards on the gun carriage wheels and trail and then man-handle it back into battery. Sometimes the trail would catch on something and the whole carriage would turn over.

Field Artillery mobility on the battlefield was achieved by manpower; the crews pushed the pieces back into battery and, for short distances, into different positions. Strategic mobility was by means of horses or, occasionally, in mud by mules and oxen. The tubes were mounted on carriages made of wood and

iron, admirably designed and fairly long lasting. A good crew could get off two well-aimed shots per minute for several minutes, but it usually fired more slowly so as not to overheat the piece. The battery commander or his deputy usually chose the type of ammunition, although this could be done by individual gun captains. Each carriage hooked up to a limber, which was usually attached to four horses. Each limber carried an ammunition chest that formed the seat for two or three of the gun crew in transit. Each chest weighed about 500 pounds and opened toward the rear. If the piece was a 6-pounder gun, the chest held about 60 complete cartridges, each ready to be loaded down the muzzle in one piece. The propellant black powder was inside a varnished cambric or other water repellent covering and was not pierced for firing until after the cartridge was in place in the bore. A friction-type primer was inserted into the vent, pushed into the powder charge and the friction primer lanyard jerked to fire the piece.

Each field gun might need more than one limber chest of ammunition, so a separate vehicle known as a caisson could be added with three more chests. Both the caisson proper and the gun carriage had identical limbers to which the horses were attached.

The Making of a Redleg

Early in the War, artillery was entirely new to Forrest. He and his regiment weren't under Field Artillery fire until Donelson (12-16 February 1862), and he had none of his own until he captured a four-piece battery at Murfreesboro, Tennessee, on 13 July 1862. He kept two of these guns, manned them with cavalrymen and used them a week later to knock out Union stockades and blockhouses made of timber and used to protect railroad bridges.

Forrest took artillery with him on all his later operations and used it often to force small enemy garrisons into surrendering with their arms and equipment intact—even when the Yankees outnumbered him. Not only his artillery scared them into surrendering, but his reputation as a fighter as well.

The guns Forrest first captured from the Union artillery were three 6-pounder field guns and one 10-pounder Parrott field rifle. All could knock out wooden forts, no matter how thick the walls. But the next capture at Lexington, Tennessee, on 17 December 1862 was more important. Here Forrest's men took the

two 3-inch Rodman steel rifles that he and Morton used to begin the attack on Johnsonville almost two years later. Forrest and Morton called these pieces their "Bull Pups."

In the Confederate Army, the artillery was said to be the best educated branch of the service. There were fewer illiterates and more educated men in the ranks than in either the cavalry or infantry. Why did Forrest with little education handle his guns so well? He surely had a natural aptitude for all weapons, but after his battle at Parker's Crossroads near Jackson, Tennessee (31 December 1862), he also understood artillery employment theory.

At that battle, Forrest had reprimanded one of his artillery officers for taking the caissons and limbers to the rear. This was according to the Confederate artillery manual, but Forrest didn't know about it yet. Once reprimanded, the young officer brought forward his limbers and caissons, even though it was unnecessarily dangerous to have so much black-powder ammunition close to the guns and exposed to enemy fire. It was safer to risk being blown up by enemy action than having Old Bedford angry.

Three days later, however, the young artillery officer came to see the General with his manual and tried to explain, first listening to Forrest's anger:

Ya'll was taking away the ammunition we mought need. That ain't right!

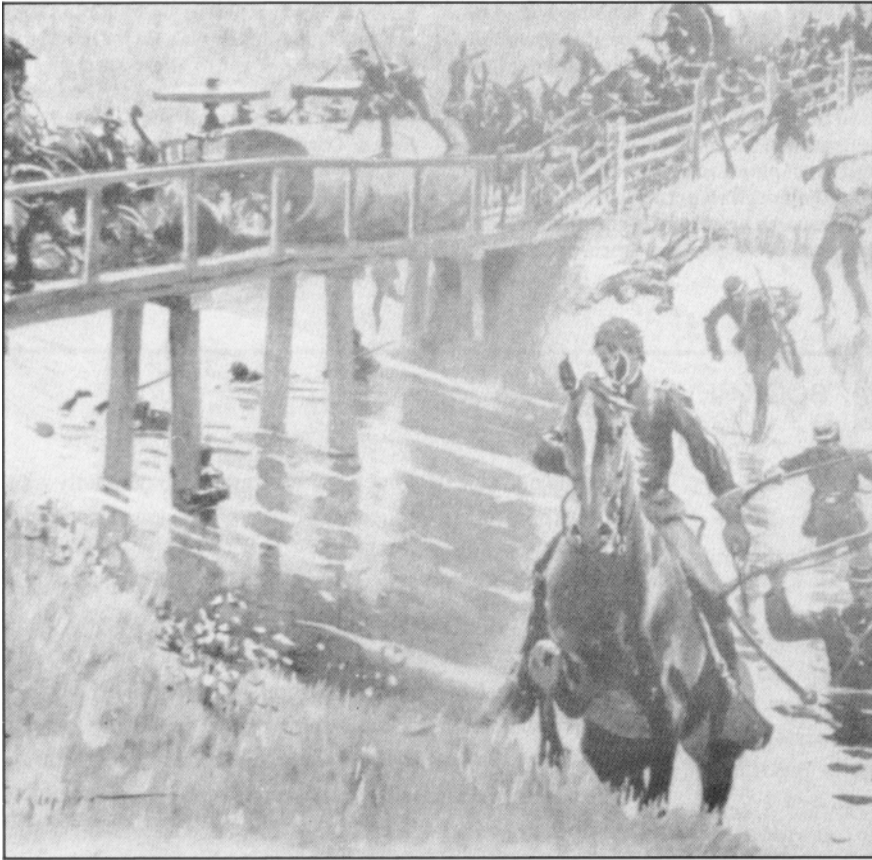
General Forrest, I was only doing what our manual calls for. I did like you said after you told me to, sir, but would you look here?

Forrest did look and, with the young officer's help, puzzled out the regulation that called for the deployment of the dangerous caissons and limbers well to the rear of the firing line. Ammunition was supposed to be manhandled forward, a round or two at a time.

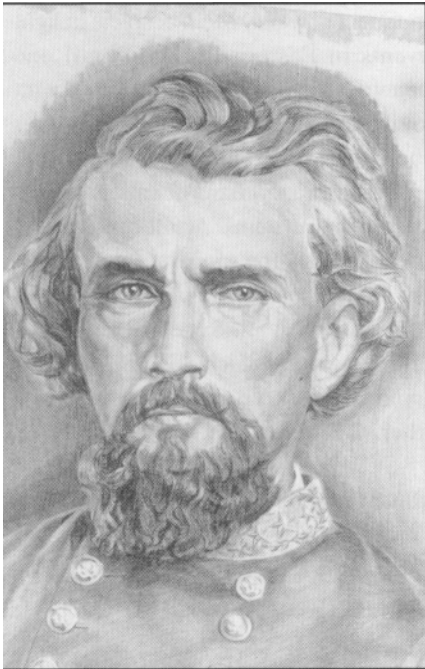
Y'all was right. Ahm sorry fur telling you off. How 'bout if ah keep this hyar book for a while?

Old Bedford did keep the book and practically learned it by heart. Some of his pronunciations were unusual, like "rickety shay" for ricochet, but he knew precisely the jobs of each member in a gun crew and practiced these jobs himself. His many years of shooting with small arms gave him confidence and skill at aiming.

Bedford Forrest was a good gunner, but his interest in excellence with artillery was because it helped him win battles and get his command out of dangerous situations. At Brice's Crossroads,



Forrest blocks the bridge over Tishomingo Creek with his cannons at the Brice's Crossroads (10 June 1864). He effectively jammed the only route the Union Army could use to get its wheeled vehicles across the creek.



General Nathan Bedford Forrest

Mississippi, on 10 June 1864, he used his field cannons to jam up the only route the Union army could use to get its wheeled vehicles across Tishomingo Creek.

More importantly, he had already imaginatively employed his artillery to escape across the Tennessee River (1 January 1863) after his most successful raid on West Tennessee. Recrossing the Tennessee River at Clifton, he deployed six field pieces against Federal gunboats Grant had ordered to intercept the Rebel raiders. Forrest reached the wide river where his flatboats were hidden and sent the guns over first, two 6-pounders half a mile north and two more the same distance south. The gun crews had orders to fire on any gunboat that came within range. Morton and the Bull Pups were left in the middle. Because of their longer range, the Bull Pups could help out downstream or up.

This plan was the best available at the time, but some Federal gunboats were

armed with heavy artillery and protected by steel armor. If one of these had steamed up while the Confederates were crossing the river, a Rebel disaster might have resulted.

But Grant, Forrest and a few others knew the iron-clad Yankee gunboats drew too much water to make it up the Tennessee River to where Forrest was crossing. There were Federal gunboats with similar cannons, but only with timber armor. These timber-clad gunboats drew less water and could have come to where Forrest was crossing.

Forrest's field guns, including the Bull Pups, were more than a match for any timber-clad gunboat on the river. Confederate shot and shell could penetrate their oak beams and do all sorts of damage inside. The Yankees didn't risk a duel of this sort with Forrest; Old Bedford crossed unhindered.

The Cavalryman with Red Legs

Forrest was extraordinarily successful, considering his humble beginnings. He rose to be one of only 22 Confederate generals and lieutenant generals, 19 of whom had graduated from the US Military Academy at West Point.

Bedford was an expert with shotguns, rifles, pistols and his special heavy saber. A Union colonel with more courage than ability singled out Forrest and tried to kill him, perhaps to get Sherman's reward. This was a mistake. Bedford killed the Yankee like a "moth in the claws of an eagle" (Robert Selph Henry, *First with the Most*, 1944).

Forrest played for keeps all the way. In his last fight at the end of the Selma campaign in Alabama (April 1865), which he lost, he took on seven Yankees, killed one and wounded several, yet escaped under his own power although seriously wounded.

He still had his command in fair order after General Lee had surrendered at Appomattox and Little Joe Johnston had given up after Bentonville. But when the War became hopeless, Forrest refused to become a brigand and a leader of brigands. He said to his men, in essence, they had been good soldiers and now must be good citizens.

Forrest left his "magic" saber, the weapon he used to wound and kill many enemies of his Confederacy, to his son with the proviso that it be drawn only on behalf of the reunited country. Symbolically, that saber was tops, but

his Bull Pups, which he also used so well, were more valuable in action.



Cornelia and Jac Weller, Princeton, New Jersey, are a husband and wife military

historian team who have collaborated on eight articles published about Nathan Bedford Forrest. Jac is Honorary Curator of the US Military Academy Museum at West Point and of the British Army School of Infantry Museum at Warminster, England. He's the author of nine books, including *Wellington in India* and *Wellington in the Peninsula*. His research has taken him on many travels, including Vietnam

three times, and to Israel seven times, including by invitation just after the Yom Kippur War. He has been the guest speaker more than 30 times at military training centers and staff colleges, including at the Israeli and US staff colleges. Cornelia is an honor graduate of Sweet Briar College, Virginia, and Jac, a graduate of Princeton University, New Jersey. Jac served in the Florida National Guard from 1928 to 1931.

REDLEG REVIEWS

BOOK REVIEWS

Artillery 2000

Ian V. Hogg. New York: Sterling Publishing Company, 1990. 158 pages. \$24.95

It isn't easy to write about artillery—it's a technical and complex subject. For that reason, most books about artillery target either the professional military audience or the general readership. Very few books on the subject manage to reach both groups.

British author Ian Hogg is one of the few who can write about artillery in a manner that appeals to specialists and non-specialists alike. His most recent book is no exception. In *Artillery 2000*, Hogg presents a compact survey of the world's current Field Artillery systems, a preview of the fire support equipment currently under development and a projection of where it's all going by the start of the 21st century.

Roughly half the book reviews the systems in service. Rather than rattling off a tedious list of every conceivable model of gun in the world today, Hogg concentrates on the major families of gun designs. He focuses on the most important models in each group, their characteristic technical features and the resulting tactical implications. Hogg follows the same general approach in the chapter on artillery systems under development. Here, however, he's limited, for obvious reasons, to those projects made public.

The author also devotes one chapter to ammunition and another to fire control. The ammunition chapter is particularly well-written. Hogg gives simple yet complete explanations of the principles behind the various types of artillery rounds that have emerged in the last 25 years: improved conventional munitions (ICMs), laser-guided rounds, self-forging fragment antitank rounds, base-bleed projectiles and the extended-range full bore (ERFB) projectile design. He also summarizes the various experiments underway with liquid propellants.

The final chapter, "To the 21st Century," is almost worth the price of the book. With his usual wry sense of humor and sharp insight, Hogg comments on the major trends in artillery employment. While many of his views are what you'd expect from a former Royal Artillery Master Gunner,

they're supported by facts and sound logic. But some of his opinions, such as on the question of women on gun crews, are not exactly what you'd expect from a gunner whose own professional experience reaches back to World War II.

Hogg is very critical of some of the trends in many Western armies. He views with alarm the US Army's tendency to replace the 8-inch howitzer with the multiple launch rocket system (MLRS). He also questions the emphasis Western military planners traditionally have placed on the three-to-one tank superiority held by the Soviets and Warsaw Pact in Europe while all but ignoring their seven-to-one superiority in guns. As the author notes, the Soviets have introduced a total of 17 new guns, rocket launchers and target acquisition devices in the past 15 years. The Americans, French and British together can account for a total of only seven new systems during the same period—and no one else has developed much of anything. Hogg dismisses the notion that the imbalance is somehow offset by technical superiority in the Western designs.

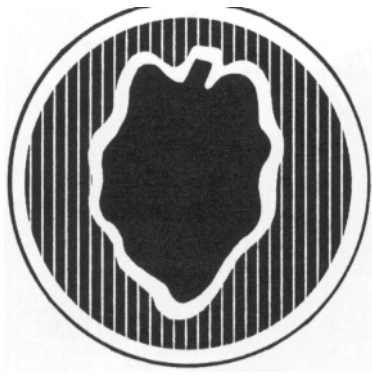
This entire line of argument now may seem obsolete in light of recent political events in Eastern Europe—until one remembers the many countries in the volatile Third World with large arsenals of Soviet-designed guns and the Soviet philosophy of high-tube, superiority ratios, including Iraq.

Artillery 2000 does suffer from a few flaws of omission, particularly in the area of supporting systems. Artillery command and control vehicles, such as the US fire support vehicle (FSV) or the Soviet armored command and reconnaissance vehicle (ACRV) family, aren't mentioned at all. Systems like the US Field Artillery ammunition support vehicle (FAASV), which should significantly improve the survivability of gun crews, aren't mentioned either. But these are relatively minor complaints.

This is a good book for any general reader who wants to learn something about the "nuts and bolts" of modern artillery. It's also a good reference book for Redlegs.

LTC David T. Zabecki, FA
S3, USAR MI Gp, Europe
Germany

Field Artillery

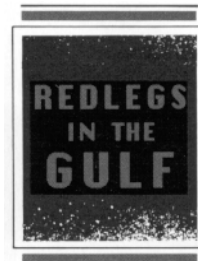


Victory Artillery

in Operation Desert Shield

by Colonel David A. Rolston

“ One should apply 3×8 tactics with careful thought toward command and control, logistics and the level of training and experience of the platoon leaders as well as the enemy threat. ”



Returning from Saudi Arabia in December 1990, I found great demand for information on how things were going over there. While the Press has, for the most part, done an excellent job of covering events, they naturally don't get into the details military leaders at tactical levels want. The potential areas of interest to professional readers is vast and, therefore, too much to cover in one article. So, I've selected three areas to address briefly, all specific to fire support and key to future training: 3×8 operations, massing fires and Field Artillery brigade training.

It's important to understand that my comments aren't "lessons learned" from Desert Shield. They are, in fact, things the 24th Infantry Division (Mechanized) Artillery (Div Arty), the Victory Division's Artillery, and many others have recognized earlier and had begun training toward long before we deployed to the Kingdom of Saudi Arabia. Desert Shield provided an ideal training environment to both confirm previous observations and develop and practice different approaches to a given situation.

3×8 Operations

One should apply 3×8 tactics with careful thought toward command and control (C²), logistics and the level of training and experience of the platoon

leaders as well as the enemy threat.

With those considerations in mind, I placed a constraint on how far apart the two platoons in a battery could be positioned. I did this for two reasons—security and C².

First, we occupied battery-sized tactical assembly areas (TAAs) generally where we would defend should the Iraqis attack Saudi Arabia. The primary threat at that time was from terrorist activities. Each position, therefore, was more compact than usually seen in a field position with the two platoons in the same perimeter, although still distinct.

Second, I directed commanders in the 24th Div Arty to keep their platoons close together both when moving and occupying firing positions. The "rule of thumb" was no farther than 1,000 meters between platoons. This wasn't a change brought on by our deployment to Saudi Arabia but, rather, the result of a number of rotations through the National Training Center (NTC), Fort Irwin, California.

When the 24th Div Arty reorganized into the 3×8 configuration approximately two years ago, we went to the extreme tactically. Instead of a battalion of three firing batteries, each with two platoons, we operated more like a battalion with six firing "batteries." The platoons were often widely separated—sometimes by 10 kilometers or more. Units moved by

platoons rather than by batteries, which exacerbated any problems we had.

Wide separation of platoons and movement by individual platoons degrade the battery commander's (BC's) ability to control his unit. In addition, logistics become much more complicated, and flexibility and redundancy in the firing battery are significantly reduced. Platoon leaders aren't as experienced as BCs, yet we ask them to perform all the BC's field functions.

When an isolated platoon loses two howitzers, it becomes only marginally effective and then only if the battalion fire direction officer (FDO) is informed and smart enough to incorporate its fires into those of another platoon. If a platoon loses its FDC, it becomes particularly difficult to get the guns back into the battle.

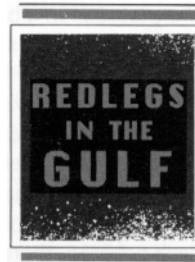
By separating platoons in a battery by no more than 1,000 meters, survivability remains good. Also, they're close enough to allow the platoon FDCs to be linked by wire, thus providing redundancy for the BC to maintain C². The battery logistics problems are cut in half.

An additional advantage to moving both platoons simultaneously and keeping them in relatively close proximity is that in a desert environment, a self-propelled battery can move in more or less one huge firing formation. Occupation times are cut drastically, thereby



B/3-18 FA in Saudi Arabia (49th Public Affairs Detachment)

“ . . . Don't dilute fire support by 'nickel and diming' the effort with fires on small or relatively insignificant targets. ”



increasing the responsiveness of fire support. Navigation problems are reduced by placing responsibility in the hands of the BC rather than the platoon leaders. In many cases, one aiming circle can reach every howitzer.

Batteries not only practiced moving in this manner, but also shifting formations while on the move. Such drills are valuable when dealing with natural or man-made obstacles, restraining terrain, passage of lines or breaching operations.

Although I can't speak for how artillery commanders deployed their artillery in Operation Desert Storm, the two heavy Div Artys deployed on Desert Shield at the time of my departure had both independently arrived at the same conclusion about 3×8 operations. In that situation, considering the mission, terrain, enemy threat and training of our

own troops, platoons were most effective when tailored toward battery operations. This in no way faults 3×8 doctrine but, in fact, demonstrates its flexibility and robustness.

Massing Fires

Training prior to the deployment and the operation itself reinforced another tenet: don't dilute fire support by "nickel and diming" the effort with fires on small and relatively insignificant targets. Hit the high-payoff targets with massive fires.

Massing fires has continued to be one of the most difficult training challenges faced by today's artillery commanders. The concept and importance of massing fires are unquestioned. We know technically how and why we should do it. So why don't we? We don't do it well

because we don't train at it—we give it lip service but little else.

A good way of reversing this would be to adjust the way artillery fires are handled at the NTC, the artillery's best training ground. There's no question that the NTC wants fires to be massed—it's a constant topic at after-action reviews (AARs). But those same AARs also show statistics on the number of missions and number of rounds fired. The implication, perhaps unintentional, is the key to success is shooting artillery at every opportunity. To do this, it's almost a given that massing suffers.

What's missing from the NTC artillery scenario is an effective portrayal of additional artillery. Little, if any, "credit" is given for fires requested from Div Arty or reinforcing artillery. As a result, if a maneuver commander needs two missions fired simultaneously to support a given phase of his plan, the fire support coordinator (FSCoord) must split his battalion's fires to do it. Thus we give de facto approval to a fire support plan that fails to achieve mass.

Possibly the worst result of this is that now nearly everyone, even artillerymen, think the average family of scatterable mines (FASCAM) minefield takes 45 minutes to emplace. The only reason I

can find for this is that "that's how long it takes at the NTC." But it takes that long at the NTC because it's usually fired by a platoon, maybe a battery on a good day, instead of being fired by an entire battalion or, better yet, by a reinforcing battalion. It's being fired by platoons because there are other missions that need to be fired at the same time, and FSCOORDs know they don't get credit for notional artillery fires.

To be fair to the NTC, I doubt it ever encouraged anyone to fire FASCAM by platoons, nor have I seen them critique a FSCOORD or fire support officer (FSO) for advising a maneuver commander that he's asking for too many targets to be fired simultaneously. But I think the NTC could greatly help us train to mass by focusing more on this one issue. It could give more emphasis to achieving battalion mass vice total rounds or missions fired and give credit for reinforcing fires.

Field Artillery Brigade Training

Yet another training tenet is this:



J. W. Sternickie

Moving as a battery, resupply, including fuel, is easier. A 24th Division soldier starts his fuel pump on a 5,000 gallon tanker in the Saudi desert.

“ . . . train with the people you'll fight with. ”

train with the people you'll fight with. It's critical to train realistically for combat, including with all the "players."

A weakness in Field Artillery training, at least in Forces Command (FORSCOM) units, is the infrequency with which we train non-divisional artillery units with maneuver units. Although we participate in command post exercises (CPXs) together, we rarely put it all together in the field with full-up units and live fire. Even the best CPX will never replace an NTC rotation.

The 24th Div Arty had previously taken corps artillery battalion command posts (CPs) to the NTC but planned to shift the focus by offering up to half its live-fire rotations to the 18th Field Artillery Brigade. While this plan was overcome by Desert Shield, I suspect it may be considered again when the XVIII Corps returns from Southwest Asia.

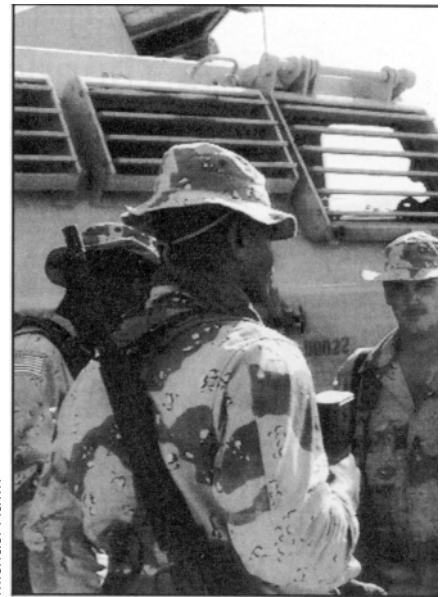
Everyone would gain from this arrangement. The direct support (DS) and general support (GS) artillery units gain in the area of interoperability, and the GS battalion receives not only the benefit of a live-fire exercise, but also gets to work directly with the maneuver force.

Conclusion

What I've said here isn't news to much of the artillery community. These are simply three tenets forged in training exercises and hardened by our desert operations.

The environment at the NTC and in Southwest Asia lends itself very well to tight 3x8 battery formations and occupations. Not only will these tactical formations simplify security and C², but also logistics. To be most effective in any combat environment, we must be flexible and tailor doctrine to fit the situation.

It's time now to employ our fires in training as we'll need to in combat—in mass . . . not only by platoon or battery, but by at least a battalion. And we need to train more as a total force—maneuver, *all* fire supporters and logisticians—to synchronize our operations under all combat



Michael Hawn

Redlegs attached to the 24th Div Arty in Desert Shield take a training break in front of their multiple launch rocket system.

situations. Only then can we best prepare for war and educate maneuver commanders in the ways Field Artillery can most effectively influence the battle for victory.

Colonel David A. Rolston gave up command of the 24th Infantry Division (Mechanized) Artillery, Saudi Arabia, on 10 December 1990, having commanded it for more than two years. He's currently the Director of the Fire Support and Combined Arms Operations Department, Field Artillery School, Fort Sill, Oklahoma. He also commanded the 1st Battalion, 21st Field Artillery, 1st Cavalry Division, Fort Hood, Texas; C Battery, 1st Target Acquisition Battalion, 25th Field Artillery, I Corps Artillery, South Korea; and the Howitzer Battery, 3d Squadron, 6th Armored Cavalry Regiment, Fort Meade, Maryland. Colonel Rolston is a graduate of the US Army War College, Carlisle Barracks, Pennsylvania, and holds a master's degree from Central Michigan University.

The Lightning and Thunder of Desert Storm

Redlegs in the Gulf

The Field Artillery Community salutes the Redlegs who carried the flag of freedom in Operation Desert Storm. The following is a list of those Army and Marine Corps Field Artillery units, battalion and higher, serving in the Persian Gulf as of 27 February 1991. The units are listed by their usual command affiliations, not task organized as they were in Desert Storm. We celebrate their speed and accuracy in putting steel on target as the lightning and thunder of the Storm.



US Army Corps

VII Corps Artillery HQ
210th Field Artillery Brigade
3d Battalion, 17th Field Artillery

XVIII Airborne Corps Artillery HQ
3d Battalion, 27th Field Artillery
18th Field Artillery Brigade
3d Battalion, 8th Field Artillery
5th Battalion, 8th Field Artillery
1st Battalion, 39th Field Artillery



Divisions

1st Armored Division Artillery HQ
2d Battalion, 1st Field Artillery
3d Battalion, 1st Field Artillery

1st Cavalry Division Artillery HQ
1st Battalion, 82d Field Artillery
3d Battalion, 82d Field Artillery

1st Infantry Division (Mech) Artillery HQ
1st Battalion, 5th Field Artillery
4th Battalion, 5th Field Artillery

3d Armored Division Artillery HQ
2d Battalion, 3d Field Artillery
2d Battalion, 82d Field Artillery
4th Battalion, 82d Field Artillery

24th Infantry Division (Mech) Artillery HQ
1st Battalion, 41st Field Artillery
3d Battalion, 41st Field Artillery

82d Airborne Division Artillery HQ
1st Battalion, 319th Field Artillery
2d Battalion, 319th Field Artillery
3d Battalion, 319th Field Artillery

101st Airborne Division (AAst) Artillery HQ
1st Battalion, 320th Field Artillery
2d Battalion, 320th Field Artillery
3d Battalion, 320th Field Artillery

Other Brigades

42d Field Artillery Brigade HQ
(V Corps Artillery)

75th Field Artillery Brigade HQ
(III Corps Artillery)
1st Battalion, 17th Field Artillery
5th Battalion, 18th Field Artillery
6th Battalion, 27th Field Artillery

142d Field Artillery Brigade HQ
(Arkansas ARNG)
1st Battalion, 142d Field Artillery
2d Battalion, 142d Field Artillery

196th Field Artillery Brigade HQ
(Tennessee ARNG)
1st Battalion, 181st Field Artillery

212th Field Artillery Brigade
(III Corps Artillery)
2d Battalion, 17th Field Artillery
2d Battalion, 18th Field Artillery
3d Battalion, 18th Field Artillery

Other Battalions

1st Battalion, 3d Field Artillery
(2d Armored Division)

4th Battalion, 3d Field Artillery
(2d Armored Division Forward)

3d Battalion, 20th Field Artillery
(41st Field Artillery Brigade)

1st Battalion, 27th Field Artillery
(41st Field Artillery Brigade)

4th Battalion, 27th Field Artillery
(72d Field Artillery Brigade)

2d Battalion, 29th Field Artillery
(8th Infantry Division (Mech))

2d Battalion, 41st Field Artillery
(3d Infantry Division (Mech))

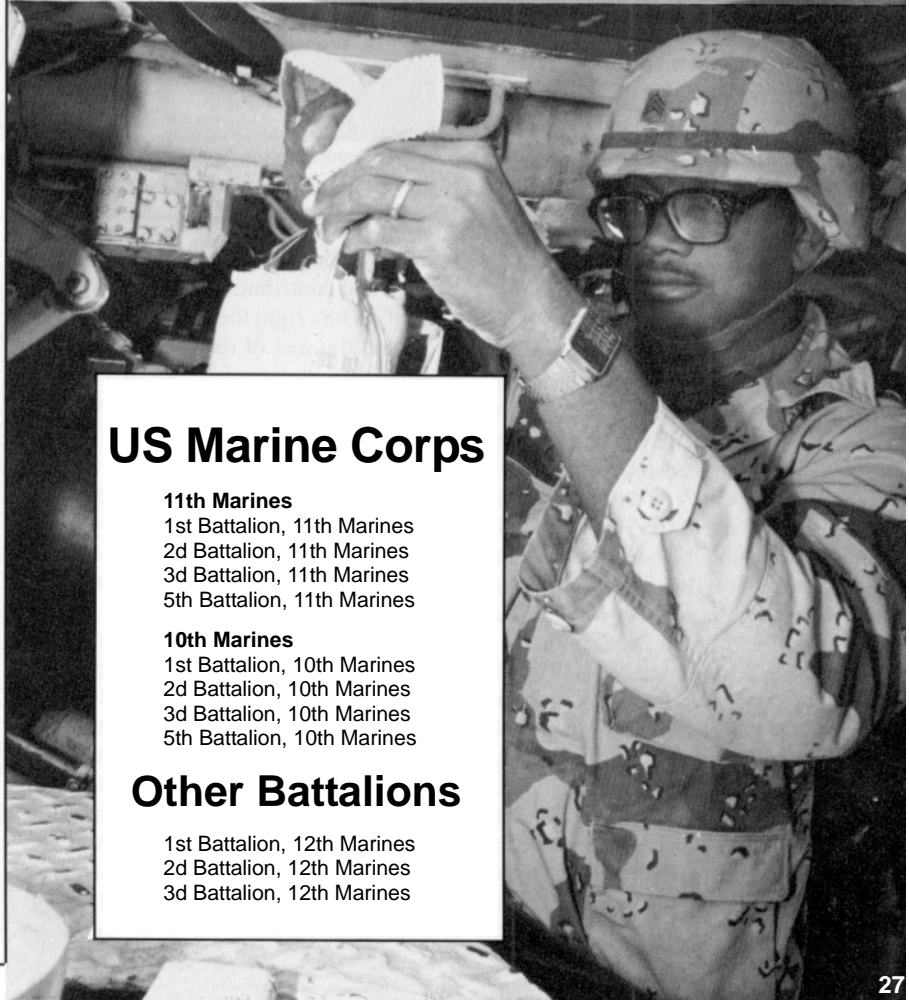
4th Battalion, 41st Field Artillery
(197th Infantry Brigade (Mech) (Separate))

6th Battalion, 41st Field Artillery
(3d Infantry Division (Mech))

1st Battalion, 158th Field Artillery
(45th Field Artillery Brigade, Oklahoma ARNG)

1st Battalion, 201st Field Artillery
(Separate Battalion, West Virginia ARNG)

1st Battalion, 623d Field Artillery
(138th Field Artillery Brigade, Kentucky ARNG)



US Marine Corps

11th Marines

1st Battalion, 11th Marines
2d Battalion, 11th Marines
3d Battalion, 11th Marines
5th Battalion, 11th Marines

10th Marines

1st Battalion, 10th Marines
2d Battalion, 10th Marines
3d Battalion, 10th Marines
5th Battalion, 10th Marines

Other Battalions

1st Battalion, 12th Marines
2d Battalion, 12th Marines
3d Battalion, 12th Marines

Command Post Integration or Staff Synchronization

Text and Photographs by Major John F. Petrik

Two related proposals are gaining some support within the Field Artillery: placing the direct support (DS) artillery battalion's S2 inside the brigade fire support element (FSE) and collocating the DS Field Artillery (FA) command post (CP) with the maneuver brigade CP.

These fail to improve command and control and are symptoms of a deeper problem in our training that few people seem to recognize. Since some support these proposals on the basis of a misunderstanding of the National Training Center (NTC) experience at Fort Irwin, California, I offer this analysis for consideration.

Location of the DS S2

For some time, people have discussed the idea of putting the DS battalion S2 in the FSE. The writing team for *FM 6-20-10 Tactics, Techniques and Procedures for the Targeting Process* at the Field Artillery School, Fort Sill, Oklahoma, considered this proposal only to table it. But there was considerable support for the idea both in the field and at the School.

There are several reasons one might want to do this. First, the fire support officer (FSO) needs certain kinds of help that, for a variety of reasons, the fire support NCO (FSNCO) can't provide. The DS artillery S2 gets most of his information from the brigade anyway, so putting him in the brigade CP allows him to get the brigade's intelligence preparation of the battlefield (IPB) "hot off the presses."



An integrated brigade CP looking toward a DS battalion's area. A proposal gaining support within the Field Artillery is to collocate the DS Field Artillery battalion with the maneuver brigade CP.

Finally, the artillery S2 can make his doctrinal contribution to targeting more easily if he's right there with the brigade S2 and the rest of the maneuver battle staff.

Note the underlying assumption about the FA battalion staff: it really has no function as an autonomous staff. People usually don't, for example, suggest that the task forces send their S2s to the brigade. However, the artillery battalion seems different. We'd do well to ask why this should be so.

To start with, this proposal ignores the vital role the intelligence officer plays on any staff. He maintains an estimate that serves as the starting point of the other staff sections' work. His product makes a direct contribution to the battalion's operations. His own collection management and IPB are vital to the work of the artillery battalion staff. If the staff lacks an intelligence proponent, it's unlikely to have an appreciation for either the use or

value of intelligence products.

The picture of staff work that underlies the proposal to move the S2 up to the brigade leads naturally to the second proposal—simply fuse the artillery and maneuver brigade CPs.

Location of the DS Battalion CP

The 9th Infantry Division (Motorized), Fort Lewis, Washington, has experimented with what it calls an "integrated tactical operations center," or TOC. In at least one of their brigades, they merged the DS FA battalion and the brigade CPs. Lieutenant Colonel James D. Crabbe published an interesting and persuasive (but to my mind ultimately unconvincing) article in *Infantry* describing the experiment ("Integrated TOC," January-February 1989). It showed a way to organize CPs (and by

implication staff processes) that overcame some of the characteristic failures of fire support. The operations and intelligence (O&I) section, battalion fire direction center (FDC) and, of course, brigade FSE become an integral part of the brigade CP. The advantages Lieutenant Colonel Crabbe sees in this arrangement are—

- Faster, more responsive planning.
- Quicker adaptation of fire support to changes in the requirements of the supported maneuver force.
- Better targeting and intelligence.
- More effective use of the fire support coordinator (FSCOORD). The FSCOORD was able to station himself where he could directly influence both his battalion and the brigade staffs.
- Superior integration and synchronization of all fire support assets in both planning and execution.
- Better information flow to the firing batteries.
- Fewer radio transmissions over fewer radio nets.
- Fast and easy face-to-face coordination.

He acknowledges that there are operational security (OPSEC) and survivability penalties to be paid but believes that some standard unit precautions offset these. The big payoff comes from the physical collocation of the staff sections: they can work face-to-face, share information easily and tighten their decision cycle.

There's some doctrinal basis for this CP organization. *FM 6-20-1J Field Artillery Battalion* suggests it as an option for CP configuration. It may represent

the next natural step in the evolution of battle staffs.

But Lieutenant Colonel Crabbe is too quick to generalize. At the time he wrote, the integrated CP had not yet deployed to the NTC. Now it has, and some cautions are in order.

Span of Control

Artillery organizations must maintain communications from observers to batteries throughout an engagement. They also must be able to coordinate their combat service support with their operations. These requirements don't lapse during battle lulls to the extent their counterpart functions in maneuver organizations do—artillery isn't held in reserve. In mobile action this becomes difficult: maneuver units move, fire support personnel must follow and the delivery units must stay in range and provide support.

Communicating. It's not at all uncommon, especially in highly compartmentalized terrain, for a DS FA battalion to lose communications with its fire support personnel before the cannons themselves are out of range. This is overcome in a variety of ways—mutual support, battery autonomous operations, battery computer system (BCS) relays, retrans—but in the end, they all come down to CP displacement.

A mutual support unit, for example, is supposed to control its counterpart's fire units during displacement or disruption. At every point, you need a headquarters in range of and able to control the fire units.

During brigade operations with an

integrated CP, the battalions found they quickly lost communications with their observers. At this point, whatever efficiencies they'd realized in staff coordination were nullified. Since no calls for fire reached the FDC, there was no artillery support.

The battalion CP hadn't displaced forward because it was tied to the brigade CP. Brigade CPs are relatively immobile to begin with, and the integrated brigade CP was almost immovable.

Maintaining Security. The OPSEC penalty wasn't overcome by remoted radios. The brigade CP presented a large, distinctive visual and electronic signature. Its size alone restricted it to a small number of suitable CP locations, thereby forcing unsatisfactory compromises among communications, cover and concealment, mobility and a varied operational routine.

Coordinating. The anticipated benefits of face-to-face coordination generally didn't materialize. The battalion FDC personnel sat around wondering what the fire plan was when they were able to walk 20 feet and ask the FSE. This problem is certainly not unique to an integrated CP, and maintaining separate staffs is not a solution. But it's important to remember that the problem persisted in an organization designed specifically to overcome it.

The brigade staff tended to organize itself for efficiency rather than effectiveness—"You cover this for me while I sleep." The brigade staff was better rested but not particularly more effective (accomplishing the staff tasks directed or implied by the brigade's assigned mission).

The brigade deprived itself of an additional CP. When brigade CPs are invulnerable (as for training purposes they often have been at the NTC), it's easy to overlook the value of having an alternate CP with a second functioning battle staff apprised of the current situation. We talk about this all the time at the division level—the division artillery CP always is at least a potential division alternate CP. Why not at the brigade level?

FA Battalion Tactical Mission Changes

This situation proved extraordinarily difficult for the battalions to handle. The ability to assume more than one of the



The camouflage of a conventional battalion CP has been struck, clearly showing the elements of the CP.

four standard tactical missions is an invaluable and underappreciated feature of our doctrine.

This is a feature I fear we're in danger of losing. Too many battalions—not only those operating with an integrated CP—feel they can't or ought not to assume anything other than their habitual tactical mission. The usual reason given is "It's not on my mission essential task list." That's not a reason, just an excuse for avoiding a difficult mission. This is a disturbing trend, and the integrated CP introduces new difficulties into an already demanding operation.

Splitting the CP. When the maneuver brigade is in reserve, the DS artillery may well get a new tactical mission. Is that brigade likely to release the artillery CP? Will the artillery CP be able to operate apart from its parent CP? Does the battalion simply hand its fire units over to someone else?

It's possible to solve all these problems when you habitually use an integrated CP, but the solutions are more difficult than they are for a standard organization. It's also important we recognize and address these questions; experience leads me to believe we overlook them.

Maintaining Robustness. Modern command, control, communications and intelligence systems are designed to give us certain advantages. We can operate in a more diffuse and, therefore, more robust way. We can lose chunks of our control framework, pieces of the electronic lattice, without collapsing the whole.

We abandon the advantages of dispersion and diffusion when we merge CPs. Mutual support is supposed to lend a certain robustness to our command and control. If one CP (or FDC) is destroyed, we can continue to function. If one CP loses its ability to communicate (due to terrain, distance, atmospheric conditions, equipment failure or enemy radioelectronic combat), another may still be able to operate. If one CP moves and thus finds it difficult to exercise continuous control, another can pick up the battle. None of this happens with an integrated TOC.

Staff Synchronization and Organization

Synchronization is not centralization of control, but centralization of intent.

A combat organization and its operations are synchronized when things occur in an independent but related fashion. Thus, the preparation is synchronized with the attack if it's fired at the proper time, say as the lead task force crosses the line of departure. This can happen in several ways, including the following three examples:

1. An observer cued by a fire support execution matrix calls for the preparation when he sees the lead task force begin moving from its attack position.

2. The DS battalion FDC orders the preparation fired at some time relative to an H-Hour.

3. The brigade commander tells the artillery to fire it now (because he knows the task forces are moving).

To consolidate CPs and bring S2s into FSEs is to assimilate all forms of synchronization to the third example, what we might call the "brute force" method of synchronization—the most fragile method. Some situations obviously require brute force synchronization. But that's not the only kind of synchronization, and it's usually not even the best kind.

Genuine synchronization occurs when combat power is brought to bear in a

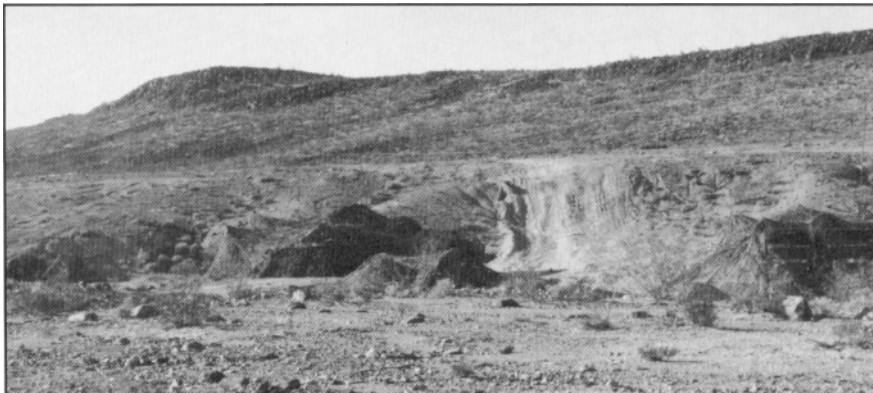
coordinated fashion based on a common understanding of the commander's intent. It doesn't depend on real-time coordination or on getting permission from the boss for every little step you take. It demands independence of action.

If you aren't operating this way, you'll fail when communications fail. If you aren't operating this way, you'll be incapable of sustaining continuous operations—the staff's second shift will sit around doing nothing rather than continue the first shift's work.

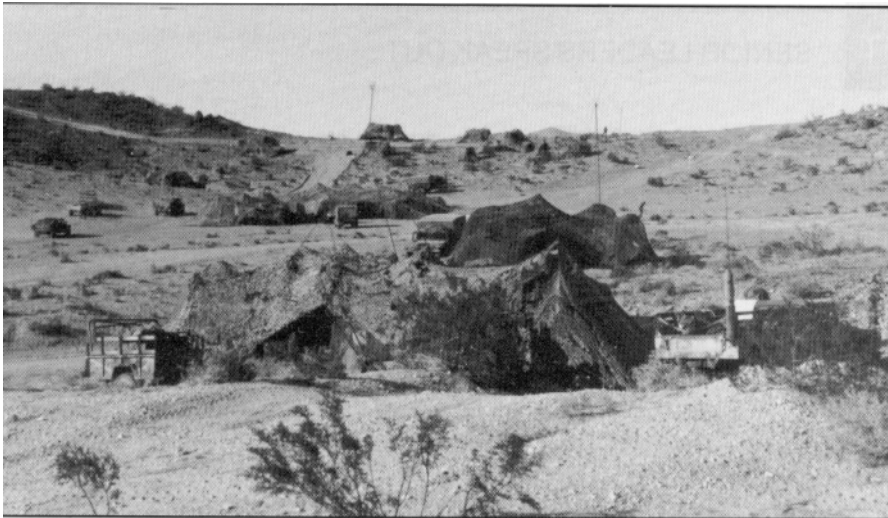
Battalion and brigade staffs have evolved the way they have for a reason. This is not to say that we can't criticize or change them. Elihu Root didn't (as far as I know) descend from Mount Sinai with a headquarters table of organization and equipment (TOE) inscribed on a manual of stone.

But the gradual organizational evolution means we shouldn't make drastic changes without thinking through their consequences. We ought to be particularly suspicious of a change that seems designed to optimize only one or two operating systems.

Staff sections are responsible for the functional areas of a plan, and they must work together if the plan is to come



The CP of the 5-1 FA is shown in two locations it occupied during an NTC rotation. This CP was compact enough to take advantage of cover and displace when necessary.



Part of an Integrated CP. This valley was one of few places of terrain suitable for its occupation. As many as 16 emitters were operating at any time from this location.

together. Each area has its proponent.

Similarly, echelons of command aren't entirely arbitrary either. Why are brigades and battalions the sizes they are? Why don't divisions directly control companies—why have intervening brigade and battalion headquarters? The answers to these questions are clearly pragmatic. We've found that these are convenient, workable divisions of command. And each of these command echelons has its own staff.

The urge to fuse staffs is at bottom the urge to eliminate an echelon of command. Have we ever done this? Sure. The regiment, as a standard echelon of command intermediate between brigade and battalion, is now gone. It started disappearing during the Second World War and had vanished by the early 1960s. Capabilities had changed, equipment had changed and missions had changed.

In the absence of such identifiable changes, however, there ought to be a presumption in favor of retaining the existing organization. The staff organizations we've got now are actually well-designed to handle their battle tasks.

Operations and Fire Support

Operations and fire support are distinct staff functions (not separate or unconnected, but distinct). They're distinct because they address different but interacting operating systems. If you tamper with the organization of a staff or with the echelons of command, then you

run the risk of shedding the function that staff or echelon is intended to perform.

Integrating CPs and moving the battalion S2 into the FSE are like an earlier trend in command and control—using the executive officer (XO) as a British Army style second-in-command (2IC). Some of the other combat arms have adopted this practice. It works, for example, in a tank battalion because the S3 fights from his tank, not from the CP.

Most artillery battalions that experimented with this concept moved away from it in practice. When they tried it at the NTC, some were training for the first time in an environment that stretched their logistics. They found that logistics—supply, administration, maintenance—no longer "came for free" the way it did back at home station. They had to work to get water and food, work to run distribution, work to evacuate casualties and work to recover and repair vehicles.

The XO soon found he had his hands full running combat service support. He no longer looked like that seasoned, senior major who had all the time in the world to supervise the CP. Battalions realized that the S3 was there for a reason and reverted to the customary division of labor.

Suggestions like integrating artillery battalion and maneuver brigade CPs, putting the S2 in the FSE and using the XO as a 2IC are attractive when operations are easy and unproblematic. When you can take any one operating system for granted—command and control, maneuver, fire support or combat service

support—it's tempting to load the assets designed to handle that system into the one that's the most troublesome. We've worried about fire support for a long time, but we've often thought command and control "came for free."

In most types of combat, this will be a mistake. While you can imagine cases where command and control would be so easy that the system operation would be routine and thus effectively disregarded, such cases probably will be rare. In those cases, it might make sense to merge the DS FA battalion and brigade CPs.

It makes even more sense if the environment is relatively benign: the enemy is incapable of effectively threatening the command and control system. These conditions might occur in certain kinds of lower intensity conflict—limited movement, no significant enemy air or armor threat, fought primarily by light infantry and controlled and supported from secure fire bases. However, it's dangerous to generalize from these specific circumstances.

If the only problems we had were those peculiar to the fire support operating system, then it might well make sense to organize our battle staffs along the lines Lieutenant Colonel Crabbe and others suggest.

But the challenges most commanders face won't allow them the luxury of such a tight focus.



Major John F. Petrik teaches philosophy in the Department of English at the US Military Academy at West Point. Before going to West Point, he was assigned to the National Training Center, Fort Irwin, California, where he took part in 47 rotations as a Cannon Battery, Battalion Fire Direction and Field Artillery Battalion S3 Trainer. Major Petrik commanded B Battery and served as S3 for the 1st Battalion, 32d Field Artillery, 41st Field Artillery Brigade, Germany. He holds a Master of Arts in Philosophy from the University of Chicago.

Leadership from an Army Reserve Perspective

by Major General William F. Ward, USAR

During the past several years, the Army has studied, analyzed and debated what leadership is, how it should be applied, whether it can be learned or must come naturally and how leaders can develop it in their subordinates. From this has come a consensus on a number of leadership attitudes and techniques. For those who apply these in the Army Reserve environment, there are some very real differences from

the Active Army world, although the requirements and expectations are the same. These differences significantly impact on some of the leadership challenges Reservists may face.



LTC Bill Harris

By now, anyone who has been exposed to the various discussions about leadership is familiar with the principles the Army considers important. The Army Ethic specifies a set of values that call for loyalty to our nation and its heritage, to the Army, to the unit and for personal responsibility and selfless service. In addition, professional soldiers are expected to have the four soldierly qualities—commitment, competence, candor and courage—all necessary to get the job done. Leaders are expected to lead by example, to be soldiers, to know their jobs and to do the right things to motivate their subordinates to do their best. Finally, they have to be oriented toward training individuals and units and caring for their troops.

The Army considers these qualities so important it has developed a full range of courses to teach the tangible parts of leadership. As a result, we're seeing many more capable leaders being

developed than ever before.

The Army Reserve consists mostly of combat service support and combat support units with a number of artillery units. We can draw upon the experience of some of our more successful battery and battalion commanders and senior NCOs to illustrate how they've handled some of the universal as well as some of the artillery-unique leadership situations Reservists may face.

According to one battery commander, the key to effective leadership is total dedication. He says, "If you're totally dedicated, the leadership traits will come out." To him, being totally dedicated means reading everything available on your specialty, developing good training schedules, holding necessary meetings and planning for the who, what, where, when and how of getting the job done. In short, the commander has to be involved

in all aspects of the battery's business. If the commander isn't, he won't be a very effective leader.

All these aspects of the job are as real for Reserve leaders as they are for Active Duty leaders. However, there are some unique circumstances for Reservists.

One point to remember is that being a Reservist, especially a commander, isn't the part-time job many people envision it to be. The normal one-weekend-a-month inactive duty training (IDT) session is as often a culmination of tasks continued or started between drills as it is a time to train, and annual training (AT) is a test of what was learned during the year rather than a time to train for something new.

A second point is that Reserve units have all the training, administrative and readiness requirements that Active units have—and more. They have additional requirements placed on them by senior Reserve headquarters, which aren't necessarily part of their Capstone chain of command.

The third point is that Reserve units are a mixture of Reservists, civilians and, for some, Active Duty soldiers, and they have strong ties to local communities. These ties can present their commanders unusual leadership challenges.

Within this context, successful leadership is a very individual thing. No two leaders do everything just the same, and some have very different approaches to the same problems.

One thing all commanders have in common is the amount of time they must give to commanding. A battalion commander finds himself actively involved two or three weekends a month and may tie up five or six in a row if his companies are having AT or other events he must observe. For example, during one month this summer, a battalion underwent a technical assistance visit (TAV) for nuclear weapons, had its third live-fire battalion shoot of the year, had two howitzer section evaluations and had an AT period. It's important to remember that Reserve units must meet the same standards as Active Army units for all evaluations, even though the Reserve units have less time to prepare.

At a lower level, battery commanders are on the receiving end of all the requirements placed on them by several layers of senior headquarters. They're primarily responsible for training soldiers and seeing the battery is ready to fulfill its wartime mission.

One battery commander said, "You can't do everything. You set your priorities, depending on what's important to you." His priority was how well the unit performed in the field and how well prepared it was to do its mission. To reach those goals, he had his civilian technicians do all the administrative work, freeing the Reservists to concentrate on training. Overall, he tried to assemble a good staff of officers, civilians and NCOs who would work with him toward helping the battery attain its training and readiness goals.

Army Reserve commanders, by necessity, also must stay in close contact with their staffs between drills. Contact at least weekly is more the rule than the

exception. Similarly, battery commanders work with their civilian staffs, first sergeants and others to ensure that ongoing actions are taken care of.

Caring for soldiers is another major area of concern. In the Reserve world, caring for soldiers has its own particular connotation. Among these are working with families and employers and dealing with sensitive personnel issues.

The families and employers of Army Reservists frequently are not as aware of a Reservist's responsibilities as we'd like them to be. A family may require special attention to reassure them that the Reservist's duties are important to the country, that he really is contributing to the unit and that he needs their support so he can do his best work.

Reserve commanders sometimes find themselves confronted with difficult personnel decisions in the unit that are complicated by a range of loyalties among the unit members.

It isn't unusual for the Reservists and the civilian staff to have been in the unit for a long time and to be from the same community. As a result, the Reservists are strongly committed to their own unit, as are the civilians. On the other hand, the Active Guard/Reserve (AGR) soldiers and the Active Duty soldiers arrive on tours and initially may not be as

“ . . . Reserve units must meet the same standards as Active Army units for all evaluations, even though they have less time to prepare. ”

unit- or community-oriented. This isn't necessarily bad, but it can occasionally result in different viewpoints and honest differences of opinions.

Sometimes a commander may decide a change is needed. If it involves relieving a unit member or one of the civilians, he must consider how best to do that and still maintain the support of the unit. He also has to be conscious that this variety of people may require different kinds of motivators to inspire their best work.

A new commander may find he has his own solution to a problem his predecessor couldn't solve.

Another situation involves the Active



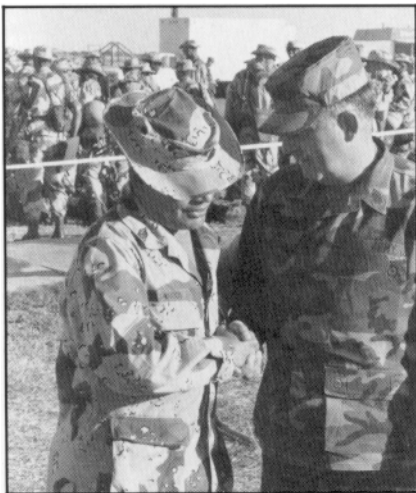
A USAR Redleg of 7-9 FA, Florida, charts fire direction changes.

“ In the Reserve world, caring for soldiers has its own particular connotation. ”

Duty "chief of smoke" assigned to batteries. He occupies a position that would otherwise be a promotion for a Reservist in the unit, and sometimes this can be a cause for friction.

It is often the first experience the Active Duty sergeant has had as part of a Reserve unit, and the battery commander may need to make an extra effort to make him feel welcome to the unit. According to one battery commander, when he's notified he has a new chief of smoke coming in, he contacts the sergeant ahead of time, welcomes him to the community and tries to build a good attitude from the beginning. He also carefully explains to the new NCO how the various chains of command work in a Reserve unit. Most Active Duty NCOs are used to having one boss.

Adjusting to a situation where the new sergeant may have three or four bosses can be difficult. He also may have to get used to doing clerical work, loading trucks and working for a civilian, things he either never has done or hasn't done recently.



Two command sergeants major exchange parting words at the deployment of a USAR unit to Desert Shield.

MAJ Charles Pope

Training always has been an important aspect of successful leadership. Because Reservists have a limited amount of time to train in their specialty, they must use that time wisely. For many this means stressing the basics and not trying to get too sophisticated too quickly. Since there's a month between IDT sessions, there's a lot of retraining that has to be done to keep the crew members proficient in just the basic skills.

At the same time, the commander and other officers and NCOs must be technically proficient in their jobs. If they don't know gunnery, there'll be operational and safety problems they won't recognize. The new computerized systems require an in-depth knowledge of battery operations and service support. An experienced staff sergeant pointed out that he won't ask for anything from his troops that he wouldn't do himself. Implied in this is the NCO must learn to be a teacher, and he must display confidence in himself and his decisions, based on his knowledge and experience.

Keeping up with technological, tactical, doctrinal and other changes in the Army can be a full-time job. This is a problem not only for artillery Reservists, but also for Reservists throughout the system. However, leaders must set the example for their soldiers, both those who have been in the unit for a while and those coming into the unit from Active Duty who may already have been exposed to the latest the Army has to offer.

NCO leadership is just as important as officer leadership. One of our battalion sergeants major with a background in infantry, engineers and artillery has considerable insight into the leadership role of NCOs and offers some pertinent observations about the changes an enlisted soldier encounters when he becomes an NCO.

One of the first changes the new NCO encounters, he says, is being accountable for the soldiers and the equipment for which he's responsible. It's up to him to see they get their jobs done. When something doesn't get done, his job is to identify the problem, determine who was responsible and turn it into a "lesson learned" so it doesn't happen again. To do that, the NCO must know his soldiers, understand their backgrounds and be there for them when they need him.

The new NCO faces another challenge—the change of attitude of the soldiers in the group from which he has risen. He already should have gained their respect because of his past performance,

but he must be sure he keeps that respect for the right reasons and not from fear of his new rank.

NCOs have to know what it takes to keep soldiers in the unit. There isn't a lot either NCOs or officers can do about the rigorous schedule a unit might have, but they can work closely with their soldiers to get them the training, the military education and the promotions they need and deserve to make their Reserve experience satisfying. Caring for good people is critical to keeping them, and personal, individual attention is the best way to show their careers are important to someone beside themselves.

The Army's system of leadership training plays a major role in developing military leaders, but Army Reserve leaders also benefit in other ways. One sergeant stated that applying some of the techniques he learned at the Primary Leadership Development Course (PLDC) to his civilian job helped him get a civilian promotion. The Army Reserve teaches leadership skills the Reservist can take to his civilian job and use to better his community.

Good leadership is critical to maintaining and improving any organization. The Army Reserve's important role as part of the Total Army demands our strong and effective leadership—especially in these times. We're developing excellent leaders and units at all levels that greatly benefit the Army and our nation.



Major General William F. Ward is the Chief, Army Reserve, Headquarters, Department of the Army, Arlington, Virginia. Just before his Presidential appointment as Chief, Army Reserve, he was Assistant Deputy Commanding General (Reserve Affairs), Individual Mobilization Augmentee, Forces Command, Fort McPherson, Georgia. He commanded the 77th Army Reserve Command, Fort Totten, New York, and three companies, one active and two Reserve. Major General Ward served in Korea with the 1st Cavalry Division as an infantry platoon and reconnaissance platoon leader, aerial observer and tank battalion staff officer. He's a graduate of the US Military Academy at West Point and holds a master's degree in business administration from Harvard Business School, Massachusetts, and a bachelor's degree in law from LaSalle Extension University, New York.

Platoon-Based Firing Battery Operations

by Major W.E. "Casey" Crowder and Captain Robert L. Quinnett, Jr.

*This article discusses the major doctrinal differences between platoon-based (3x8) and battery-based (3x6) operations as presented in the newly released manuals **FM6-50 The Field Artillery Cannon Battery** (20 November 90) and **FM 6-20-1 The Field Artillery Cannon Battalion** (29 November 90). These two primary manuals for platoon-based operations are now available through the US Army Publications Center, Baltimore, Maryland, and can be ordered on DA Form 12.*

The Field Artillery began the transition to the 3x8 concept and organization in 1985, but the revision cycle for Training and Doctrine Command (TRADOC) doctrinal manuals is five years. Though the doctrinal delay has caused operational problems for the field, the manuals now incorporate the field's "lessons learned" experimenting with the 3x8 concept.

The platoon-based (3x8) battery differs from the traditional six-gun firing battery by having the equipment and the officer and senior NCO leadership necessary to routinely operate as two independent firing elements. (See Figure 1.) The firing element, or platoon, has an "executive officer" (platoon leader), fire direction officer (FDO), "chief of firing battery" (platoon sergeant) and gunnery sergeant. Each platoon can operate independently of the other while relying on the battery and battalion for command and control (C²) and logistical support.

Where the battery commander (BC) once commanded a single element (the battery), he now commands three: two platoons and the battery trains. This has caused confusion concerning the role of the BC and the best way to maximize the tactical flexibility and survivability of the platoon-based battery.

What follows are answers to 3x8 questions most often received from the field, with the answers based on the doctrine and tactics, techniques and procedures (TTP) described in the newly published FM 6-50 and FM 6-20-1.

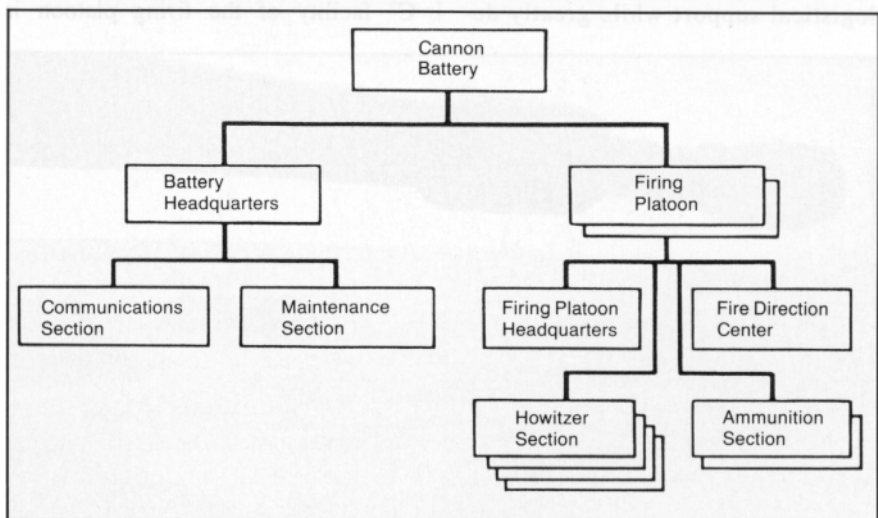


Figure 1: The Platoon-Based (3x8) Field Artillery Cannon Battery (FM 6-50)

What's the role of the battery and the BC in a platoon-based battery?

The basic C² element of the Army's Field Artillery is the battery, regardless of whether the unit is platoon- or battery-based. The basic tactical fire direction system (TACFIRE) unit of fire of the platoon-based battery is the four-gun platoon, but the basic unit of tactical control is the battery. The 3×8 platoons just give the BC more options for employing the battery. Except under very unusual circumstances, he employs the unit as a battery under his direct control, not as individual platoons.

FM 6-50 states that a platoon-based battery can be employed in one of three ways: (1) as two platoons under the BC's control, (2) as a single unit with the platoons merged or (3) as two independent platoons controlled by the artillery battalion S3. The manual explains that the third method is the least desirable and is used only when no other option is available.

Under most circumstances, the S3 should coordinate for battery position areas large enough to accommodate two platoons. A "goose egg" of 1,000 meters in diameter is usually adequate for a battery, though the terrain and availability of suitable positions can cause the area to vary.

The BC reconnoiters the area and selects positions for his platoons. Platoon positions should be 400 to 1,000 meters apart (terrain permitting). This distance allows for a coherent defense and easy logistical support while greatly decreasing

the likelihood that counterbattery fires on one platoon will also engage the other.

The S3 may direct movement by platoon (leapfrogging) to maintain maximum firing capability, but decisions concerning the sequence of movement should be left to the soldier with the greatest knowledge of the situation on the ground, the BC.

The battalion issues fire orders directly to the firing platoons. Movement and all other orders and requests for information go to the BC or his battery operations center (BOC), not directly to the platoons.

How do I man and equip the platoon operations center (POC)? I don't have enough people or vehicles for a separate element.

The role, even the existence, of the POC has been a subject of considerable controversy since we adopted platoon-based organizations. A number of units tried to establish a POC similar to the BOC in a battery-based unit, only to find that they didn't have enough people or equipment to establish it. Nonetheless, the requirement for functional control of the platoon continues to exist.

Two points need to be made. First, the C² facility of the firing platoon is

called the POC. Second, to quote FM 6-50, the POC "is nothing more than the fire direction center (FDC) with added operational responsibilities. The POC is not a separate element and does not require a separate vehicle." Technical and tactical fire direction are two of the functions of the POC, along with reporting, coordinating and all the other headquarters functions.

What happened to the BOC?

Platoon-based tables of organization and equipment (TOEs) don't provide a vehicle or the radios necessary for a traditional BOC, a soldier-built shelter on the back of a high-mobility multipurpose wheeled vehicle (HMMWV) manned by the chief of firing battery and a fire direction specialist. However, the requirement for a focal point for battery operations continues to exist. The battery must track the battle, submit routine reports, receive and record information from battalion, coordinate logistics and control the positioning and movement of two platoons and the battery trains.

To meet the requirement, the BC designates one of the two POCs to perform the battery operations function as an additional duty. The POC of the platoon with the nuclear mission will usually serve as the BOC, with the emergency action material (EAM) safes maintained at that location.

Since the selected POC is already pretty busy taking care of the platoon's business, it may require augmentation to perform the battery operations function. The battery nuclear, biological and chemical (NBC) NCO can usually cover this function. At the POC, he's near the radios he needs for receiving and transmitting NBC reports and is also available for sending and receiving reports and orders, posting information to charts and maps and answering radio calls for the BC and first sergeant when they're off the net.

What do I do with the battery trains?

The platoon-based firing battery has three elements: the two firing platoons and the battery trains. The makeup of the trains varies from unit to unit, but they



Depending on the terrain, a "goose-egg" of 1,000 meters in diameter is usually adequate for a platoon-based battery.

usually consist of the supply truck with water trailer, communications and maintenance vehicles and ammunition vehicles when they're in the battery area. There are three options for positioning these elements: heavy-heavy, heavy-light and light-light.

In the heavy-heavy option, the train elements are split between the two platoons. This helps make the platoons and the trains more secure, but it makes the elements more cumbersome to move (mixed tracked and wheeled vehicles), requires a larger position area and presents a larger visual signature.

In the heavy-light option, one platoon takes all the trains. This option significantly increases the local security of the platoon with the trains (heavy platoon) and should be considered when nuclear operations are anticipated. The additional personnel can help to secure the weapons when they arrive. On the down side, logistical support for the light platoon is more difficult, and the heavy platoon has a much larger visual signature. Also, maneuver for the heavy platoon is much slower.

Light-light operations require a separate location for the battery trains. This option minimizes the visual signature of all three elements and should be considered when the air threat is high. But local security is difficult, and logistical responsiveness to the platoons may be slow.

My modification TOE (MTOE) gives me two special weapons tool kits and associated equipment. Do I have to train and maintain two special weapons teams?

Initially, there was a lot of confusion about nuclear operations in platoon-based batteries. Many of the J-series MTOEs used to provide a second special weapons tool kit, and the doctrine was unclear whether each platoon had to be nuclear capable. The new manuals answer these questions in specific terms.

FM 6-50 states that nuclear tasks "are battery-level tasks. There is no requirement for both firing platoons (in a platoon-based battery) to execute a nuclear mission." FM 6-20-1 states that "a battalion should have at least three



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The platoon leader relies on his gunnery sergeant to reconnoiter, select and occupy a position.

special weapons teams—one per battery." There is no requirement for the battery to maintain two special weapons teams, and TOEs are being adjusted to remove the second special weapons tool set.

Who's responsible for the in-depth reconnaissance and selection of platoon locations—the BC, platoon leader or gunnery sergeant?

In previous editions of TC 6-50, the platoon leader was responsible for the in-depth reconnaissance and selection of platoon locations, assisted by the gunnery sergeant. The BC conducted a general reconnaissance and selected platoon areas.

The new FM 6-50 states the platoon leader relies on his gunnery sergeant to conduct the reconnaissance, selection and occupation of position (RSOP). The BC still selects position areas but also reconnoiters alternate and supplementary positions and supervises the occupation by the platoons. The gunnery sergeant is now responsible for all aspects of the detailed RSOP, responsibilities

he used to share with the platoon leader.

Lessons learned from the National Training Center (NTC), Fort Irwin, California, and input from the field led to the doctrinal decision to have the platoon leader stay with his platoon to maintain standards and better lead his platoon.

Confusion may still exist because the terms "in-depth" and "detailed" reconnaissance are used for different people when referring to the preparation of the platoon position. FM 6-50 states "The BC is responsible for the *in-depth* RSOP. He or his representative performs general reconnaissance and leads the advance party. . . . The two firing platoon gunnery sergeants then conduct *detailed* RSOPs for their locations" (emphasis added). The BC can't conduct both an in-depth and general reconnaissance. Ignore the term in-depth when referring to the BC, except in battery-based operations. The next revision of FM 6-50 will correct this confusion.

Are there two advance parties when platoon-based?

As they say at Fort Leavenworth, it depends. It's implied, but not flatly stated, in FM 6-50 that each platoon has

its own advance party and they move separately. Each platoon sends the gunnery sergeant, a gun guide from each howitzer section, a POC representative and a communications representative to conduct the RSOP. (See Figure 2.)

But it isn't possible to present all possible situations in a doctrinal manual and still keep it to a manageable size. Based on the mission, enemy, terrain, troops and time available (METT-T) and local tactical standing operating procedures (TACSOP), the BC may do one of the following:

1. Take all advance party personnel from both platoons with him and the first sergeant on the RSOP.

2. Take one platoon advance party at a time.

3. Rendezvous with each platoon's advance party at a predetermined location or at the proposed future position area.

4. Rendezvous with each platoon's advance party separately at a predetermined location or at the proposed platoon position.

5. Select positions on the ground and radio the grid coordinates or provide a position from just a map spot to each platoon leader and direct the platoon leaders finish the RSOP.

6. Direct the first sergeant to lead one platoon advance party (such as the heavy platoon's in a battery deployed heavy-light) and take the other platoon's advance party.

What's the difference between the BC's reconnaissance party and the advance party?

Nothing; they are the same. However, the organization of the advance party may differ depending on how the battery is configured (heavy-heavy, heavy-light or light-light) and what the tactical situation demands.

In the September 1988 version of TC 6-50, the BC's reconnaissance party was separate from the advance party. In battalions conducting split-battery operations, the BC's reconnaissance party reconnoiters positions ahead of platoon advance parties. The platoon advance party, led by the platoon leader, then conducts a detailed reconnaissance and preparation of the position. The exact purpose of the BC's reconnaissance party and its relationship to the platoon advance party weren't well defined in doctrine and were never universally

JOB	RECONNAISSANCE PHASE	SELECT/ORGANIZE PHASE	OCCUPATION PHASE
Battery Commander	Conduct map reconnaissance. Select primary and/or alternate routes and checkpoints. Determine platoon order of march. Brief platoon leaders, GSGs, and other key leaders. Conduct ground reconnaissance.	Select platoon position areas. Select azimuth of fire if not given. Direct emplacement of survey control (if survey support is available), or perform hasty survey. Select trains location if trains are not collocated with a platoon. Reconnoiter alternate and/or supplementary positions.	Supervise occupation by the platoons.
First Sergeant	Assist BC on reconnaissance.	Plan battery defense. Coordinate defense efforts of all battery elements. Organize trains position, and select support vehicle positions.	Direct security and defense of battery. Brief platoon sergeants on defense plan and platoon responsibilities in the plan.
Gunnery Sergeant	Assemble the platoon advance party. Brief the advance party. Supervise security.	Supervise the security sweep. Make plan for occupation. Designate howitzer, FDC, aiming circle, and TM-184 locations. Set up and orient aiming circle. Determine initial deflection, distance, and vertical angle to guns. Develop track plan. Brief guides on occupation plan. Supervise preparation of position.	Lay the howitzers. Begin to prepare the platoon leader's report.
Gunnery Sergeant's Driver	Help in radio communications during security sweep.	Help in security sweep. Lay wire from aiming circle to TM-184, and help set up OE-254. Monitor NBC detection equipment. Position M8A1 chemical agent detector upwind of selected position if advance party brings M8A1 forward. Monitor M8A1.	Guide platoon from release point (RP) if necessary. Guide vehicles into service area if necessary.
POC or FDC Guide	Help in security measures.	Help in security sweep. Lay wire from TM-184 to POC or FDC position. Set up OE-254. Record initial deflection, distance, and vertical angle on updated DA Form 5698-R. Initialize data base in BUCS. Reconnoiter route from RP to section position. Compute terrain gun position corrections.	Meet section at RP, and guide it to assigned position.
Gun Guides	Help with security during movement.	Help in security sweep. Prepare section position. Lay wire from TM-184 to assigned gun position. Hold subtense bar or M16 to aid GSG in collecting terrain gun position correction (TGPC) information. Record initial deflection, and pass it to section chief upon occupation. Reconnoiter route from RP to section position.	Meet howitzer at RP, and guide it to assigned position. Align weapon on azimuth of fire, and give gunner initial deflection.
Communications Representative	Help with security during movement.	Emplace TM-184. Establish internal wire communications for transmission of firing data. Establish communication with outposts, and make wire drops to designated locations.	Meet section vehicle at RP, and guide it to assigned position (unless communications vehicle was with advance party).

Figure 2: Primary Duties of Advance Party Personnel (FM 6-50)

understood in the field.

FM 6-50 clarifies the connection between the two parties and makes the terms generically applicable to both platoon-based and battery-based operations. The element formerly called the "BC's reconnaissance party" was changed to the "reconnaissance party." The BC leads the platoon advance parties to

future position areas and conducts a general reconnaissance. He then gives the gunnery sergeant occupation guidance. The gunnery sergeant, together with a representative from each section, conducts a detailed reconnaissance and preparation of the position.

The BC determines advance party

organization, based on the tactical situation and common sense. In a rapidly moving situation, he may need a separate reconnaissance party reconnoitering ahead of the platoons. In a more static situation, he and the first sergeant may remain in the platoon position areas and direct detailed RSOP.

How does a platoon-based battery defend itself?

The short answer: the best way it can with what it's got. Whether platoon- or battery-based, considerations for the defense and basic defense procedures are the same.

For platoon-based units, the problems are compounded by the relative lack of resources when compared to a battery-based unit. The cooks, mechanics and wire teams that provided the backbone of the battery's defense will most likely be with the battalion. The platoon sergeant positions crew-served weapons and draws the defense diagram for the platoon instead of the first sergeant. The basics, however, are the same.

What are the differences in combat service support (CSS) for a platoon-based versus a battery-based unit?

The main differences have to do with the degree of centralization, trains configuration and logistical network interface. FM 6-50 states, "The execution of CSS functions is removed from the BC, as much as possible, and is centralized under the control of the battalion. The CSS responsibility at battery or platoon is to report and request requirements and to ensure that CSS is properly executed once it arrives in the unit area."

In platoon-based units, the battalion commander usually will task organize or echelon CSS assets under centralized control, using a dual-trains concept. This means he can attach the firing batteries' mess, maintenance, ammunition and (or) supply sections to the service battery or headquarters battery and deploy them with the field trains or combat trains. Usually ammunition and maintenance are deployed with the combat trains, and mess is deployed with the field trains.



Dan Janutolo

An advance party prepares to secure a new position before an occupation.

The supply sergeant and vehicle usually will remain with the battery, and he'll be the primary logistics executor for the unit. The degree of centralization is driven by METT-T, and the organization of CSS assets is based on the local TACSOP and battery deployment configuration.

The rationale for centralization and the dual-trains configuration is to free the firing batteries from logistical burdens so they can better concentrate on providing fire support. It also reduces the signature of firing platoons for better concealment and survivability and provides combat essential support more rapidly.

The interface with the logistical system for a platoon-based battery is from the POC, first sergeant or BC to the command post of the combat trains, called the administration and logistics operation center (ALOC). The ALOC is the single point of contact for all logistical support and coordination.

FM 6-50 formalized the terms "combat trains, field trains" and "ALOC" and changed the term "logistics layout site" to "rearm, refuel, resupply and survey point" (R3SP).

Conclusion

Platoon-based operations offer cannon battalion commanders and their BCs the opportunity to maximize their units' combat potential by giving them latitude in configuring their units to accomplish the mission. The battalion has the C² structure to operate across a spectrum from six essentially autonomous platoons to three single, eight-gun batteries under the direct control of the BCs.

Our 3x8 doctrine will continue to evolve as artillerymen experiment with existing organizations and use new systems, such as Paladin (M109A6 howitzer), the advanced Field Artillery system-cannon (AFAS-C) and the advanced Field Artillery tactical data system (AFATDS).



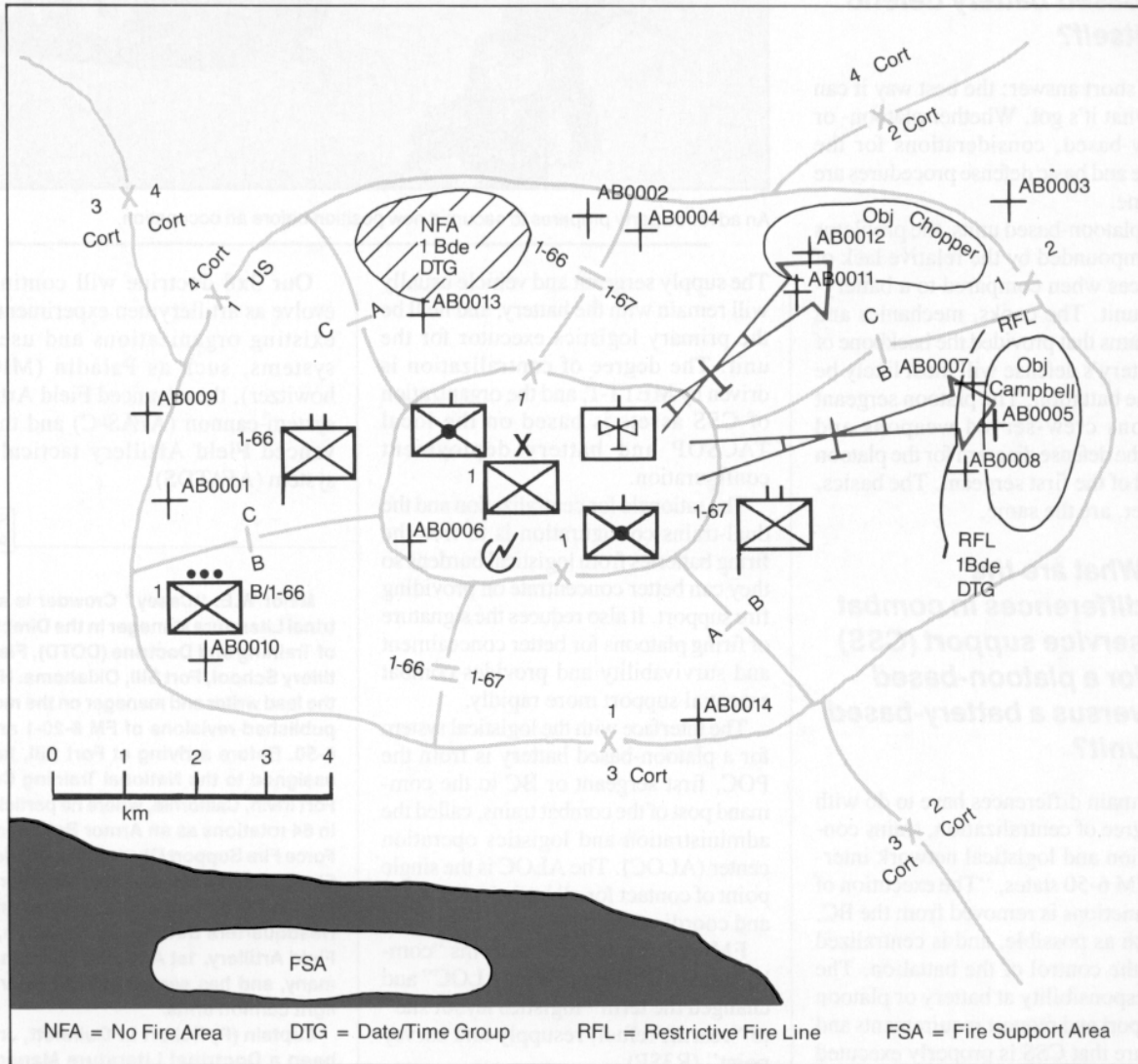
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Tactical Teaser: Low-Intensity Conflict Fire Support Coordination

Test your knowledge of fire support coordination measures by applying them in this low-intensity conflict scenario.

United States forces are helping forces of the Republic of Cortina in their struggle against the neighboring army of Atlantica, with whom they share their island. The US' 1st Brigade of the 52d Infantry Division has flown in and is in position adjacent to three brigades of the Cortinian Army. Answer the questions as they pertain to the diagram.



1. The Company Fire Support Officer (FSO) from C/1-67 Infantry sees some 82-mm mortars positioning near Target AB0002 and wants to call indirect fire on them. Is coordination required, and with whom must it occur?

2. The same Company FSO monitors a call for fire from one of his forward observers (FOs) who has located an enemy platoon command post (CP) at Target AB0003. There's a liaison officer (LNO) from the 2d Cortinian Infantry Brigade with the company. Is coordination required, and with whom must it occur?

3. The 1st Brigade FSO gets a call from his Q-36 radar that has located some 82-mm mortars firing near Target AB0014. Is coordination required, and with whom must it occur?

4. The A/1-66 Infantry Company FSO takes fire from rocket-propelled grenades (RPGs) in a village within the NFA, which is in effect, and wants some 81-mm mortars to suppress them. Is coordination required, and with whom must it occur?

5. The 1-66 Infantry Battalion FSO gets a situation report from the Battalion S2, whose scouts reported an enemy ammunition cache in the vicinity of Target AB0001. They have no demolitions on hand to destroy it. Is coordination required, and with whom must it occur? Would you use indirect fires?

6. A squad conducting perimeter defense for the Brigade lodgement area radios in to the Brigade CP that they need illumination to locate an enemy patrol of undetermined size they think they've pinned down at Target AB0006. Is coordination required, and with whom must it occur? If the 105-mm howitzers can't fire it, what would be your weapon of choice?

7. Who should/could be the FSO for the Brigade lodgement area (center of the Brigade's sector) to help the Brigade FSO if he needs assistance?

8. Second Platoon, B/1-67 Infantry, doing search and attack operations in their sector, takes automatic fire from the east near Target AB0007 and are pinned down, taking casualties. They're frantically calling for anything you can get them. The RFL is in effect, and a company-sized air assault is en route to Objective Campbell on a mission to secure it. Is coordination required, and with whom must it occur?

9. The same platoon takes fire from Target AB0005 an hour later. They want to suppress them with high-explosive (HE) fire. Air assault forces are consolidating on the objective. Is coordination required, and with whom must it occur?

10. The air cavalry troop FSO with a scout/gun team (under the operational control of the 1st Brigade) is en route to Objective Chopper and takes SA-14 anti-aircraft fire from the vicinity of Target AB0011. They want to suppress it themselves with direct fire. Is coordination required, and with whom must it occur?

11. The troop commander in the helicopter behind the FSO changes his mind and decides to call for indirect fire on the SA-14 to keep his schedule toward Objective Chopper. The other scout/gun team is coming right behind him. Is coordination required, and with whom must it occur?

12. On the way to Objective Chopper, the troop commander wants the FSO to fire at a suspected enemy position at Target AB0012, which could engage them at the landing zone (LZ). Is coordination required, and with whom must it occur?

13. The Second Platoon, B/1-66 Infantry, takes fire from Target AB0010. The FDO states the 105-mm guns are engaged and directs the call to naval gunfire to take it out. Is coordination required, and with whom must it occur? Do you recommend using it?

14. The LLVI (low level voice intercept) teams attached to the Brigade intercept a radio transmission from around Target AB0013. They have detected an enemy infantry battalion-sized element moving in. You've coordinated with A/1-66 Infantry for close air support (CAS), which had leftover ordnance from another mission but only 2,000-pound bombs. You're the battalion FSO. Should you allow it?

15. B/1-67 Infantry takes fire from Target AB0007. Objective Campbell has been taken and vacated already, but the RFL hasn't yet been rescinded. You're the Brigade FSO and want to engage it. Is coordination required, and with whom must it occur?

For the answers to this Tactical Teaser, see Page 49.



Historical Vignette

The Philippine Insurrection

Improvising in a Low-Intensity Conflict

The 20th century ushered in a new age of American expansion and international commitment. Following the Spanish-American War of 1898, America increasingly faced the prospects of safeguarding its international interests through the use of military force. The range of American military application has since been diverse and widespread, extending into both hemispheres and facing varied cultural and geographic conditions. Typically, American Field Artillerymen have found themselves having to improvise in response to these challenges, especially in military operations in the Third World.

Adaptability and Flexibility

In many ways the Philippine Insurrection (1899-1902) set the stage for American military involvement in low-intensity conflicts for the 20th century. Thrust into a combat environment dominated by guerrilla warfare, Americans were forced to develop flexible methods to adapt to jungle conditions and to a potentially threatening civil population.

As historian T. Harry Williams pointed out in his book *The History of American Wars*, American forces "felt they were under a form of siege in a land of enemies, and their sense of peril was heightened because they could never be sure who among the population was hostile. An apparently friendly peasant might turn in an instant into a murderer." In response to uncompromising guerrilla warfare, American forces adopted harsher practices, just as their predecessors had in fighting the Indians.

Yet, responding to guerrilla warfare in the Philippines was much more than simply escalating the level of cruelty between the belligerents. Without a tradition of jungle fighting, the US Army

had to develop enough mobility and firepower to actively seek out and engage bands of guerrilla insurgents armed with rifles and, in some instances, their own artillery pieces. Once American forces gained this mobility and firepower, the insurgent movement faced an uphill battle. Then operating from a series of garrison posts, American forces finally overcame the guerrillas by maintaining persistent offensive pressure on them, following them into every recess without allowing them to rest.

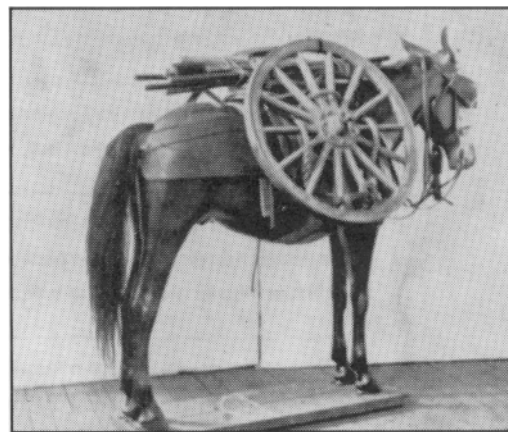
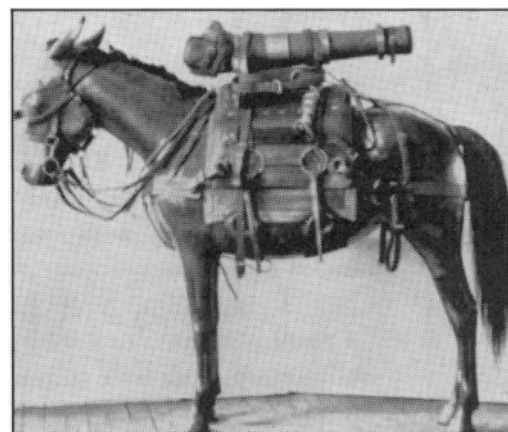
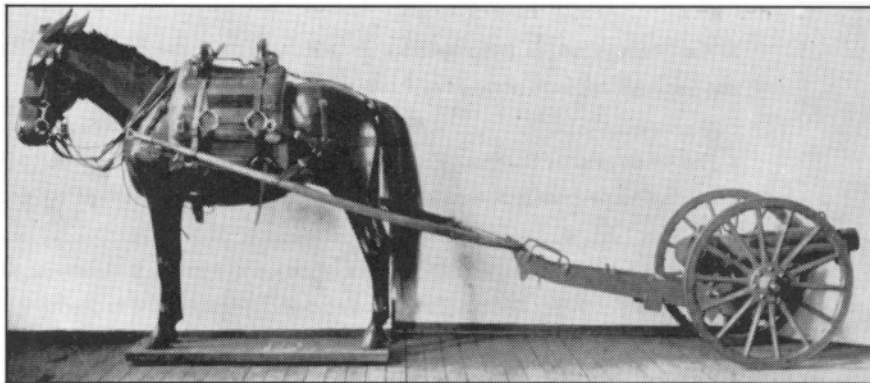
From the outset of the struggle, the US Army knew it couldn't provide its infantry enough Field Artillery firepower to meet the various needs of jungle warfare. The Army needed a lighter field piece with greater mobility than its standard M1885 3.2-inch gun. The 3.2-inch gun, although in the process of being modernized by its conversion from black powder to smokeless powder, was already obsolete. It contained no recoil system, and it wasn't designed to operate effectively in mountainous and rugged terrain.

The Army turned to an expedient solution by buying a number of new Maxim-Nordenfelt 75-mm mountain guns from the British arms manufacturing firm of Vickers, Sons and Maxim. The 75-mm gun offered the flexibility of being broken down into separate loads for mule transport that could readily maneuver through jungle terrain in support of infantry. The gun was especially desirable because it used smokeless powder, which did not disclose its location to the enemy as black powder did. It also had a recoil system that lessened the strain on the gun crew of manhandling the gun back into battery each time it fired.

Improvisation

The acquisition and employment of the new 75-mm guns marked the beginning of a new era of improvisation and

ingenuity on the part of American Field Artillerymen that would be indicative of later low-intensity conflicts. After picking up the first shipment of these guns in London and then sailing for Manila, Captain George Van Duesen, 7th Artillery, quickly discovered a problem: how were the guns to be organized and used tactically? The US Army's manuals



The 75-mm mountain gun could be broken down into separate loads for mule transport through rough terrain.

and field service regulations had no provisions for this type of ordnance or warfare. Captain Van Deusen suddenly found he had the sole responsibility of formulating doctrinal and organizational plans for using the guns for jungle warfare.

Gathering every scrap of information he could on mountain artillery during his journey from London to Manila, Captain Van Deusen pieced together plans (based on a six-gun battery) for using the new 75-mm mountain guns in the Philippines. Unexpectedly, these plans were to be tested just two days after he received the men, animals and materiel he requested to conduct operations.

While trying to familiarize his men with guns they'd never seen before, his mountain battery had its first taste of battle. Acting in support of an infantry advance against entrenched insurgents, he placed his guns about 1,500 yards from

the nearest insurgent position and fired over the heads of the advancing infantry line to keep the insurgents down in their trenches. When the infantry line advanced far enough, he moved his guns forward to within a thousand yards of the insurgent trenches and dislodged them with fire that commanded the trenches on two sides.

The engagement ended shortly afterward as the insurgents retreated from their trenches, suffering additional losses from the deadly artillery fire. At this point, there was no doubt the 75-mm mountain gun would play an instrumental role in future Philippine operations. Captain Van Deusen's methods of employing the gun continued to prove successful in several battles.

Impact on Future Conflicts

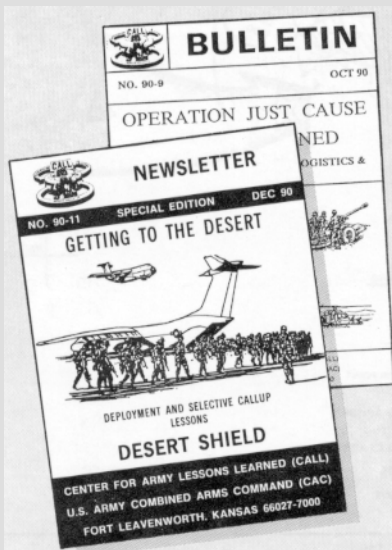
The circumstances surrounding the

adoption and employment of the 75-mm mountain gun highlighted a significant turning point for the US Army and, in particular, the Field Artillery. In many later low-intensity conflicts, the Army's ability to be adaptable and flexible was key to its successes and failures, just as it was during the Philippine Insurrection. Not surprisingly, exploiting modern technology and formulating an appropriate doctrine to provide the best combination of mobility and firepower largely defined the Field Artillery's effectiveness in low-intensity conflicts, just as it did in Captain Van Deusen's improvisation with the 75-mm gun.

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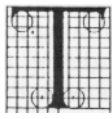


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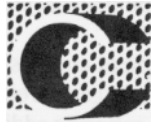
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	Fort Hood Leadership Study	Dec 86
	Commander's Comments—The Combat Support Team	May 87
No.1	Seven Operating Systems	Jan 86
No.2	Intelligence	May 86
No.3	Fire Support	Sep 86
No.4	Command and Control	Feb 87
No.5	Leadership	Jul 87

88-1	Commander's Survivability	Jan 88
88-2	Minefield Breaching	May 88
88-3	Heavy Forces	Fall 88
89-1	Non-Mechanized Newsletter	Spring 89
89-2	Heavy-Light Lessons Learned	Aug 89
89-3	NCO Lessons Learned	Oct 89
89-4	Corps/Division Lessons Learned	Nov 89
89-5	Commander's Casualty Evacuation System	Nov 89
90-1	Fire Support for Maneuver Commander	Feb 90
90-2	Reserve Component Deployment	Mar 90
90-3	The Stone Forest	May 90
90-4	Low Intensity Conflict	May 90
90-5	Fire Support Newsletter	Jun 90
90-6	Musicians of Mars	Jun 90
90-7	Winning in the Desert	Aug 90
90-8	Winning in the Desert II Tactics, Techniques and Procedures for the Maneuver Commander	Sep 90
90-9	Operation JUST CAUSE: Vol 1. Soldiers and Leadership; Vol II. Operations; Vol III. Intelligence, Logistics & Equipment	Oct 90
90-10	Unit Inactivations	Nov 90
90-11	Deployment and Selective Call Up	Dec 90

The Division Deep-Battle



Targeting Cell:



Thor's Hammer or Rube Goldberg Device?

by Major Michael W. Cannon, AR

One of the Center for Army Lessons Learned (CALL) bulletins (November, 1981, Fort Leavenworth, Kansas) states that the targeting process "as an integral part of deep operations, is neither well understood nor are there effective procedures established for its implementation." This is still true at the division level. Certain aspects of the division targeting process, which should contribute to the commander's overall plan, are over emphasized, making the final product ineffective as a decision aid for the commander.

Many of the problems are systemic. There are two separate agencies involved in writing targeting doctrine: the Intelligence and Field Artillery communities. Their differing outlooks on the problem tend to drive them in different directions, so their approaches to the issues of responsibilities and results are different. Moreover, the doctrinal literature fails to focus on the "nuts and bolts" approach to the problem.

The "how to" make the targeting cell work is sadly missing. This article proposes changes to the division targeting process that, hopefully, will make this "Rube Goldberg device" into "Thor's Hammer." I'll discuss the system as it's presented in doctrinal literature, pointing out its problems, and then suggest a solution.

The targeting process can be summarized in the three words: decide, detect and deliver. The simplicity of this

concept, although appealing, belies the complexity of the process. Two separate elements comprise the process: the intelligence preparation of the battlefield (IPB) and the target value analysis (TVA).

IPB Products

The IPB is covered in detail in *FM 34-130 Intelligence Preparation of the Battlefield*. It's a step-by-step process that leads to what should be one of the most useful decision aids a commander has, the *decision support template* (DST).

The intelligence officer first looks at the terrain in the area of operations, factors in the weather and its effects on the types of forces available and comes up with the avenues of approach into and out of the division's zone or sector. Looking at the enemy forces involved, the analyst then takes the doctrinal templates for

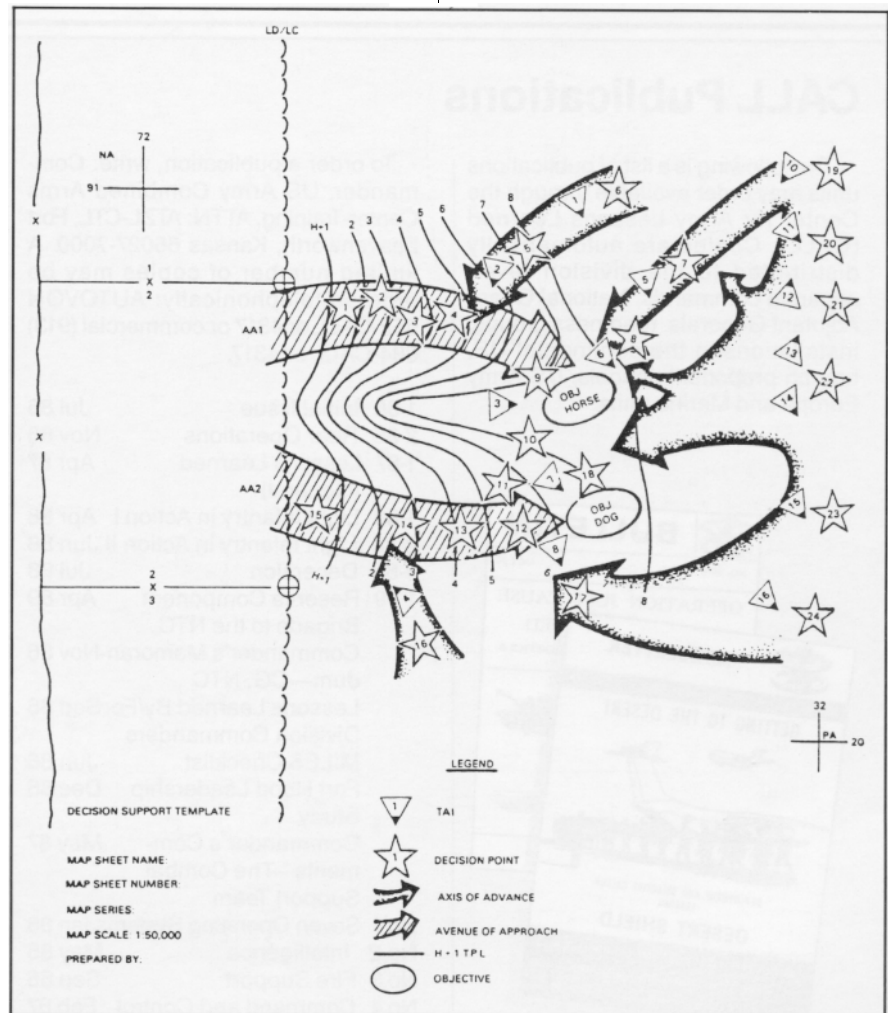


Figure 1: A sample DST derived by the intelligence analysts from the event and situational template, which are part of the IPB process (FM 34-130, Page 4-72). The DST should be one of the commander's most useful decision aids but is too busy and unclear on actions to take at TAIs.

the level of forces under analysis and modifies them, based on the terrain. This yields the *situational template*, the basis for another tool, the *event template*.

The event template "identifies and analyzes significant battlefield events and activities that provide indicators of enemy courses of action" (FM 34-130). The event template provides the departure point for the creation of the DST.

Within the avenues of approach and mobility corridors identified in the event template, certain critical areas become apparent. These are designated as named areas of interest (NAIs) or points or areas "along an avenue of approach or mobility corridor where activity will confirm or deny a particular course of action" (FM

34-130).

Once these NAIs are identified, the movement of the enemy force through them is calculated based on doctrinal rates of movement. The result is a series of time phase lines (TPLs) that run across the battle area linking the NAIs together to give the analyst, but more importantly the commander, a feel for how rapidly the enemy will move along the identified mobility corridors. (For an example of an event template, see FM 34-130, Page 4-60.)

The DST is drawn from the event template and is supposed to be developed by intelligence, operations and fire support representatives. By looking at the avenues of approach and mobility

corridors as they relate to the event template, these staff analysts can determine where the commander can influence the enemy through fire and maneuver. These locations are called target areas of interest (TAIs). They can be either point or area TAIs keyed to specific terrain features or chokepoints. TAIs can be NAIs or other locations chosen by the analyst.

Once these TAIs are identified, they are related to NAIs and each other through the use of decision points (DPs). DPs "identify events, areas and points on the battlefield where tactical decisions are required and when these decisions must be made" (FM 34-130). Although the selection of the DPs is primarily a

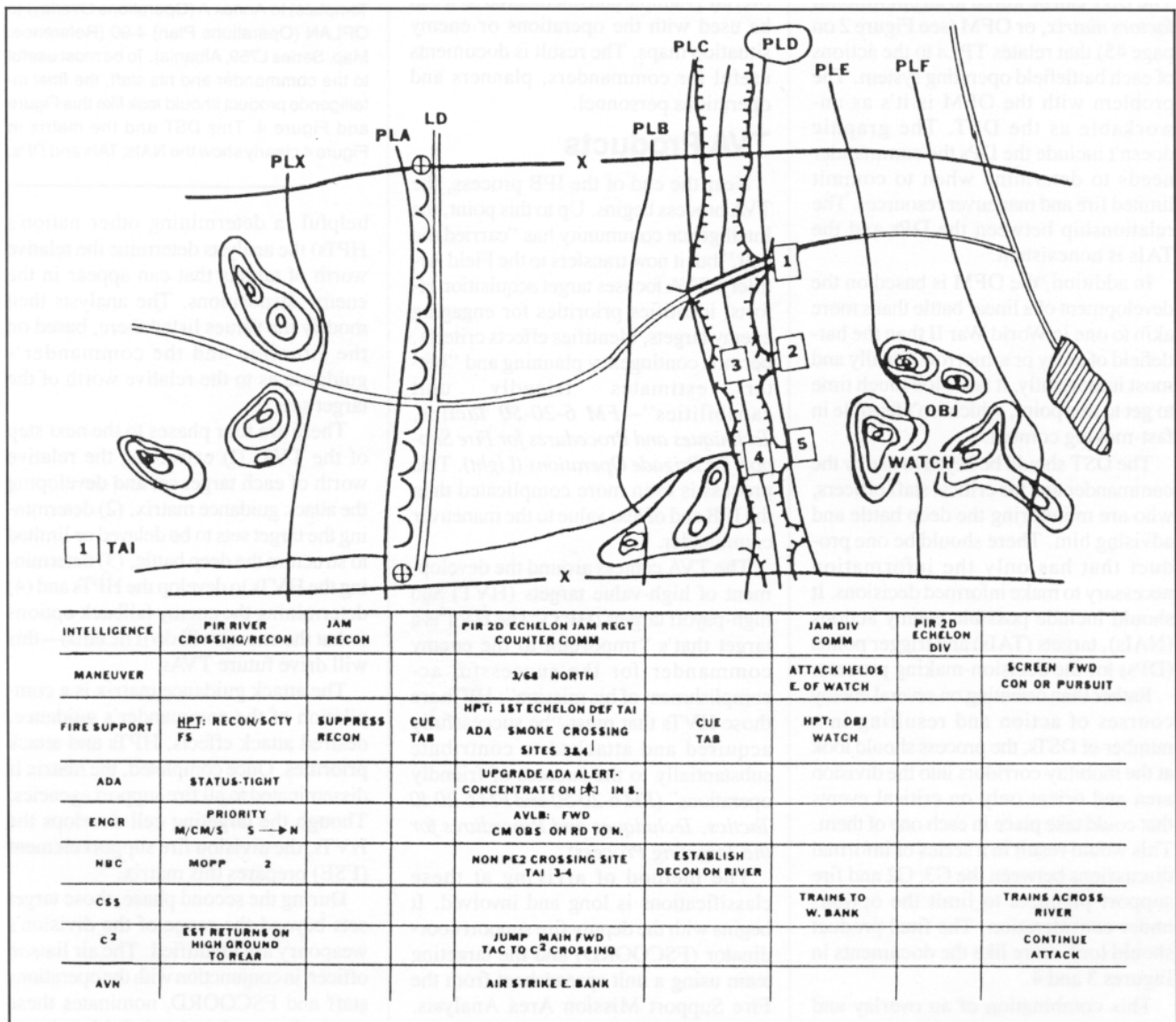


Figure 2: Sample OFM developed by intelligence analysts that keys to the DST to spell out TAI actions (FM 34-130, Page 4-78). But the OFM doesn't include DPs, information that's critical for commanders to determine when to commit limited resources.

function of the G3, the intelligence and fire support representatives should be consulted. The final product is a DST (see Figure 1 on page 44) and includes TAIs, DPs, TPLs, avenues of approach and mobility corridors, objectives and the current enemy situation.

The problems with the DST become apparent by just looking at Figure 1. The graphic includes too much information. More importantly, the DST isn't a workable product because the relationship between the DPs and TAIs isn't obvious and the actions to be taken at each TAI aren't clear.

There's yet another intelligence product that can be developed to spell out actions, but it's only partially successful. The DST can be keyed to an *operational factors matrix*, or OFM (see Figure 2 on page 45) that relates TPLs to the actions of each battlefield operating system. The problem with the OFM is it's as unworkable as the DST. The graphic doesn't include the DPs the commander needs to determine when to commit limited fire and maneuver resources. The relationship between the DPs and the TAIs is nonexistent.

In addition, the OFM is based on the development of a linear battle that's more akin to one in World War II than the battlefield of today or tomorrow. Finally and most importantly, it takes too much time to get to this point, which isn't feasible in fast-moving combat.

The DST should be keyed to use by the commander and his critical staff officers, who are monitoring the deep battle and advising him. There should be one product that has only the information necessary to make informed decisions. It should include possible enemy actions (NAIs), targets (TAIs) and trigger points (DPs) for the decision-making process.

Rather than orienting on several enemy courses of action and resulting in a number of DSTs, the process should look at the mobility corridors into the division area and orient only on critical events that could take place in each one of them. This would result in a series of informal discussions between the G3, G2 and fire support planners to limit the options under consideration. The final product should look more like the documents in Figures 3 and 4.

This combination of an overlay and written matrix provides the most practical set of deep-battle tools for the commander and staff. The overlay should show only DPs, TAIs and NAIs that have been briefed to the commander, have the possibility to influence his plan

and are linked to certain actions the commander has tentatively approved. With this at their disposal, the G2 and G3 representatives in the operations cell of the division main command post and the intelligence analysts who monitor enemy dispositions in the division support element (DSE) or all-source intelligence center (ASIC) can then watch the battle flow and determine when the enemy has "triggered" a decision cycle.

The matrix clearly shows the DP and TAI relationship and the time window in which the decision must be made. Actions already approved can be executed or the required coordination begun. The overlay is simple and uncluttered so it can be used with the operations or enemy situation maps. The result is documents useful for commanders, planners and operations personnel.

TVA Products

Near the end of the IPB process, the TVA process begins. Up to this point, the Intelligence community has "carried the ball," but it now transfers to the Field Artillery. TVA focuses target acquisition efforts, identifies priorities for engaging enemy targets, identifies effects criteria, permits contingency planning and "better estimates friendly unit capabilities"—*FM 6-20-50 Tactics, Techniques and Procedures for Fire Support for Brigade Operations (Light)*. This process is even more complicated than the IPB and of less value to the maneuver commander.

The TVA centers around the development of high-value targets (HVT) and high-payoff targets (HPT). The HVT is a target that's "important to the enemy commander for the successful accomplishment of his mission"; HPTs are those HVTs that must "be successfully acquired and attacked to contribute substantially to the success of friendly operations" (*FM 6-20-50 and FM 6-20-10 Tactics, Techniques and Procedures for the Targeting Process*).

The method of arriving at these classifications is long and involved. It begins with the deputy fire support coordinator (FSCOORD) and the targeting team using a unit spreadsheet from the Fire Support Mission Area Analysis. (See *FM 6-20-50, Appendix K*, for an unclassified example of a unit spreadsheet.) From this spreadsheet (example based on a Soviet threat—not very

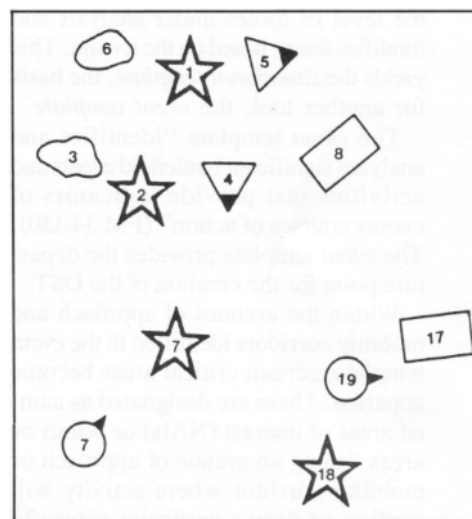


Figure 3: Appendix C (Decision Support Template) to Annex A (Operations Overlay) to OPLAN (Operations Plan) 4-90 (Reference: Map, Series L759, Albania). To be most useful to the commander and his staff, the final intelligence product should look like this Figure and Figure 4. This DST and the matrix in Figure 4 clearly show the NAIs, TAIs and DPs.

helpful in determining other nation's HPTs) the analysts determine the relative worth of targets that can appear in the enemy dispositions. The analysts then modify the values listed there, based on the situation and the commander's guidance as to the relative worth of the target sets.

There are four phases to the next step of the TVA: (1) extracting the relative worth of each target set and developing the attack guidance matrix, (2) determining the target sets to be delayed or limited to structure the deep battle, (3) determining the HVTs to develop the HPTs and (4) determining the enemy fallback options (what the enemy will do if he fails)—this will drive future TVAs.

The attack guidance matrix is a compilation of the commander's guidance, desired attack effects, HPTs and attack priorities. Once completed, the matrix is disseminated to all fire support agencies. Though the targeting cell develops the HVTs, the division fire support element (FSE) prepares this matrix.

During the second phase, those target sets beyond the range of the division's weaponry are identified. The air liaison officer, in conjunction with the operations staff and FSCOORD, nominates these targets for attack by battlefield air interdiction (BAI). Analysts then determine those targets within range of the division's assets to be delayed and limited.

Coordination is then made with applicable agencies. Unfortunately, the specific coordination process and attack methods aren't identified or analyzed. For the Field Artillery, this is the division deep-battle targeting plan.

Rube Goldberg at Work

The system described is reminiscent of a Rube Goldberg device. There's a lot of movement within a restricted area that sets off a jumble of bells and whistles and assorted pyrotechnics, but at the end after an inordinate expenditure of energy, it delivers a cold bucket of water on the recipient.

In the shuffle to determine the most

worthwhile targets to attack with limited assets, we use a very intricate and time-consuming process to produce decision aids that are too complicated and vague to help us on the modern battlefield.

Take, for instance, the Field Artillery community's emphasis on locating and identifying specific targets within an enemy force to an eight- or, at least, six-digit grid. Some artillerymen speak of focusing intelligence collection assets to locate these discrete and separate enemy sub-organizations. It's almost as if they expect the collection manager to pull out a magnifying glass and begin to zero collection assets to a three- or four-kilometer radius at extended distances from the forward edge of the battle

area (FEBA).

In reality, the intelligence system is more akin to a vacuum cleaner. You aim it in a general direction, but it'll pick up a bewildering array of raw intelligence. The analysis of this mass of information must meet two division needs. It has to enable fire support to skewer targets with the minimum number of rounds possible and avoid pounding entire grid squares into dust. It also must give the division commander the overall picture of the enemy's actions he needs to fight the division. The two requirements don't necessarily coincide and quite often pull the intelligence community in opposite directions.

More importantly, the targeting cell's determination to find and eliminate discrete targets with pinpoint accuracy diverts the targeting cell from its primary role: supporting the overall maneuver plan. This is the fundamental flaw underlying the targeting process. The targeting cell shouldn't be just an extension of the division commander's fire support element—it should be the focal point around which the division's deep-battle plan revolves.

DP	TAI	NAI	Remarks	Options	Recommendations
1	5	6	Bridge Crossing by 505 and 509/518XX 6 km 30 Minutes	1. BAI at Bridge 2. FASCAM 3. Persistent Agent 4. MLRS	1. Artillery FASCAM 2. Immediate Recce 3. Immediate BAI 4. AHB
2	4	3	Movement of 202/231 30 Minutes from DP	Same as Above	20th Mechanized notified through Corps Not our target
7	8	7	Movement of 80th RMTU	1. BAI on Bridge D+6 2. Request MLRS	1. Insert LRSU 2. Preplanned Recce at 1400 Thurs 3. BAI at 1800 Thurs 4. AHB
10		9	Movement of 2-231 Mech and 23-231 Mech Bns	Alert Maneuver Units	Not Applicable
11	12	9	Same as Above	Attack With Artillery at TAI 12	1. Thursday 0600-1200 Arty on TAI 2. FASCAM on DP 3. Warning Order to AHB
		14,15	Movement of 707/714th Bde and 74th Arty Bn	Notify Friendly Units	
18	17	19	Movement of 817th Arty Bde	BAI	BAI Request

Preplanned BAI Strikes for Thursday
Objective Steel (LRSD in Place)
817th Arty along a line 4537 to 5136
817th Arty Bde HQ

Preplanned Recce for Thursday
Same as BAI—2 Hours Earlier

A Solution: The Deep-Battle Cell

As a "deep-battle cell," the division targeting cell should analyze the friendly plan and enemy and friendly situations and recommend courses of action for the commander to fight the division's deep battle.

The deep-battle cell should make as many of its actions as routine as possible. Its composition, agenda and briefers need to be the same so it can establish and maintain coordination relationships. Its meetings should be run by the G3 or his representative (probably the Deputy G3 or a plans officer). The attendees should be those listed in Figure 5. At first glance, the number of people attending may seem too many. But their consistent presence will ensure the effort of translating the final products into action smoother.

Note the heavy representation of intelligence personnel. The division's deep-battle plans are driven by the limitations of the intelligence collection and analysis system; the comments of these key players can be critical to the synchronization of the division's deep-battle assets.

Figure 4: Matrix Proposed for DST, OPLAN 4-90 (Figure 3)

The meeting agenda in Figure 5 brings the group to the same level of knowledge as rapidly as possible and ensures everyone understands activities that might affect recommendations on courses of actions. The heart of the meeting, however, is the discussion of the targeting priorities and the development of the DST. The cell finalizes the proposed DST (Figures 3 and 4) with recommendations coming from the staff.

A great deal of work must be done before the meeting, with the majority being done by the G2 targeting officer, G3 plans officer and collection management and dissemination (CM&D) chief. They must have two items before the deep-battle cell meets: the event template and DST (along with part of the matrix).

The event template should contain only those NAIs the division can use or "see" with the intelligence assets it has access to. The TAIs should be the basis for the cell's discussion. These are finalized after the commander's battle staff has had the chance to suggest improvements, based on the division capabilities.

The TPLs should be deleted from the event template. Although they help the analyst, they're of little value to the commander. He'll more than likely subjectively judge how the battle will develop based on his training and experiences.

But when the G2 briefs the battle staff, he should explain the relationship between the mobility corridors, NAIs and TAIs in terms of specific enemy battalions, regiments or brigades that can influence the division's plan. As part of the battle staff, the deep-battle cell can narrow down those TAIs to consider, based on how well (or poorly) their specialized assets can attack them. Once the specific TAIs are determined, the G2 analyst, in conjunction with the FSCOORD or Field Artillery intelligence officer (FAIO), begins to develop a list of HPTs, based on the most threatening or critical enemy units.

The DST is built around the time and space relationships among the enemy units, their best possible rates of movement, the NAIs and, if possible, the time it'll take to disseminate the required intelligence. It should show all the NAIs and TAIs under consideration and the possible locations of DPs.

The DPs must be oriented around NAIs or locations where intelligence assets can determine enemy movement or his commitment to certain actions. In some cases, there may be several interrelated

Attendees	
G3/Deputy G3	
Air Liaison Officer (ALO)	
Fire Support Coordinator	
Field Artillery Intelligence Officer	
Assistant Division Aviation Officer	
Assistant Division Air Defense Officer	
Chemical Officer	
G3 Plans Officer	
G3 Current Operations Officer	
Electronic Warfare Officer	
Staff Weather Officer (SWO)	
Division Support Element Chief (DSE)	
G2 Targeting Officer	
All-Source Production Section Chief (ASPS)	
Collection Management and Dissemination Chief	
Assistant Division Engineer	

Agenda	Attendee Responsible
Battle Damage Assessment	ALO
Current Situation Update	G3 Current Operations
IPB Update	
•Weather	SWO
•Terrain Analysis	DSE Chief
•NAIs/TAIs (if Changed)	G2 Targeting Officer
•Enemy Operations Future Friendly	ASPS Chief
Operations Targeting Priorities (HVTs)	G3 Plans
•Threatening Enemy Actions	Discussion
•Friendly Actions (Mission-Type Orders)	
Development of or Changes to the DST	Discussion
(HPT and HVT List, if Needed) Close	
Air Support (CAS)/BAI Forecasts	Discussion

Figure 5: Deep-Battle Cell Attendees and Agenda.

DPs based on sequential NAIs where the enemy may take one of several branches. The DPs then serve as a "heads-up" for operations personnel to issue warning orders to commit assets.

The relationship between DPs, TAIs and NAIs should be filled in the DST matrix (Figure 4) before the meeting. The "Remarks" column should address the enemy units involved, their possible actions and, more importantly, the time available between the crossing of the DP and the enemy's arrival at the TAI. This is crucial for the battle staff to consider options and how to synchronize them. For example, the battle staff may decide to fire a portion of the division's limited family of scatterable mines (FASCAM) and chemical munitions (if given chemical release authority) to delay the enemy enough to coordinate a joint air attack team (JAAT) mission.

The G3 representative compiles the staff's recommendations and completes the matrix. The options are then briefed to the division commander who determines which are acceptable for further

planning and which may be implemented by what elements of the staff without consulting him further.

The DST overlay and matrix are disseminated to four locations. The first is to the ASIC. The personnel monitoring the development of the enemy situation (order of battle analysts or the G2 targeting officer) can then key on certain DPs. When the enemy "triggers" an action, the targeting officer or FAIO moves to the current operations section to decide whether or not to pursue the options recommended, based on the current battle situation. The current operations section maintains a copy of the DST overlay under the situation overlay and is the second element to receive the overlay and matrix. The third is the FSE, which coordinates the fire support elements of the division.

The final location should be the division tactical command post (DTAC). Those controlling the close battle may have special needs that would limit the launching of a deep strike. There also may be the uncomfortable circumstance

where the division commander can't be reached and the deputy commanding general must make the decisions. He can't do this unless he has the necessary tools.

Conclusion

The deep battle the division must fight is hampered by a number of factors. Currently, it's burdened by a targeting process that's overly complex and focuses too narrowly on the destruction or elimination of targets.

To some degree, this is a function of the targeting cell under the FSE's control. The FSE tends to approach the problems of deep battle with single-system solutions: if it's in range, shoot it—if not, give it to the Air Force. The narrow focus also is due to the limited assets the division has to fight a truly deep fight. The

danger in focusing primarily on the Field Artillery as the division's deep-battle arm, however, is that it could lead to a myopic analysis of the possibilities open to the commander.

The current system suffers from being developed with a European bent. In the European theater, the division operates as part of a corps that's also fighting a deep battle. But, when a division deploys as part of a joint task force or on an independent mission (as may occur in contingency operations) it can't afford to limit itself to the European bent. By adopting the viewpoint that the targeting process is only a portion of the activities the deep-battle cell performs, the staff will be able to present the commander multiple-system options. The result will be a synchronization of the division's capabilities and a truly devastating deep battle.

Revising our Rube Goldberg deep-battle

targeting process can give the division the power of the mythical Thor's Hammer.



Major Michael W. Cannon, Armor, is the S3 of Task Force 1-8 Cavalry, 2d Brigade, 1st Cavalry Division, in Operation Desert Storm. He commanded a troop in the 2d Squadron, 3d Armored Cavalry Regiment, Fort Bliss, Texas, and served as the G3 Plans Officer for the 2d Infantry Division, South Korea. Major Cannon is a graduate of the Infantry Officer Advanced Course, Fort Benning, Georgia, and the Command and General Staff College and Advanced Military Studies Institute, both at Fort Leavenworth, Kansas. He holds a master's degree from the University of Iowa and taught history at the US Military Academy at West Point.

Answers to Tactical Teaser

You may arrive at different solutions for some of the situations listed on Page 41. Your solutions also are correct if you haven't violated the principles of fire support coordination.

1. Yes. Commander, A/1-66 Infantry.
2. Yes. Commander, 2d Cortinian Brigade.
3. Yes. Commander, A/1-67 Infantry.
4. Not required. You can defend yourself from direct fires using *minimum* required force.
5. Yes. Commander, B/1-66 Infantry. No, this isn't the best means to destroy a point target.
6. Yes. Brigade Commander approves. Try hand-held illumination or 60-mm or 81-mm mortars, but coordinate it with

adjacent units if the illumination affects their areas.

7. He might use his fire support sergeant, the aviation troop FSO (if he's free) or one of the firing battery commanders.

8. Yes. Coordinate with the air mission commander through the 1st Brigade Commander who approves it.

9. Yes. Coordinate with the 1st Brigade Commander, who must contact the ground force commander.

10. No. Coordination is unnecessary. The troop commander can direct this fire.

11. Yes. Commander, C/1-67 Infantry.

12. No. At a point after the helicopters lift off (e.g., a phase line), the objective comes under his control.

13. Yes. If you employ naval gunfire, you

would be firing through Cortinian air space and must coordinate with them. However, note the gun-target line. Be careful about recommending naval gunfire because of its range probable error; its danger close range may prohibit its use.

14. No, not without checking with the NFA implementing commander. The effects will clearly affect whatever is in the NFA.

15. Yes. You must coordinate with the 1st Brigade Commander and the commander who still actually owns the area to the east of the RFL or rescind the RFL and contact the Commander of B/1-67 Infantry.

Advanced Fire Support Branch
Fire Support and Combined Arms
Operations Department
Field Artillery School

RIGHT BY PIECE

NOTES FROM UNITS

Field Artillery Training Center-Honduran Exchanges

While Operation Desert Storm has focused the fire support community's attention on the requirement for massed, automated fires in a target-rich conventional scenario, Fort Sill, Oklahoma, continues to ensure the Field Artillery stays abreast of the demands of the low-intensity conflict (LIC) arena.

This fall, the fourth in a series of professional exchanges between the Field Artillery Training Center (FATC), Fort Sill, and various training centers of the Honduran Army will take place. This program is the result of a 1989 initiative by the Training and Doctrine Command (TRADOC) to increase its role in

supporting the US Southern Command's (SOUTHCOM's) programs in Latin America and to explore ongoing issues in LIC.

Five TRADOC installations were assigned countries in Latin America and received funds to develop a program of subject matter expert exchanges (SMEE)

dealing with training and doctrinal issues. Fort Sill was assigned the Central American country of Honduras, a nation that played an extremely important role in US strategic programs for the region throughout the 1980s, and one that typifies those nations facing LIC security challenges. Bordered by Guatemala, Nicaragua and El Salvador, Honduras has been relatively calm amidst a sea of regional strife and revolution, despite significant economic and social problems.

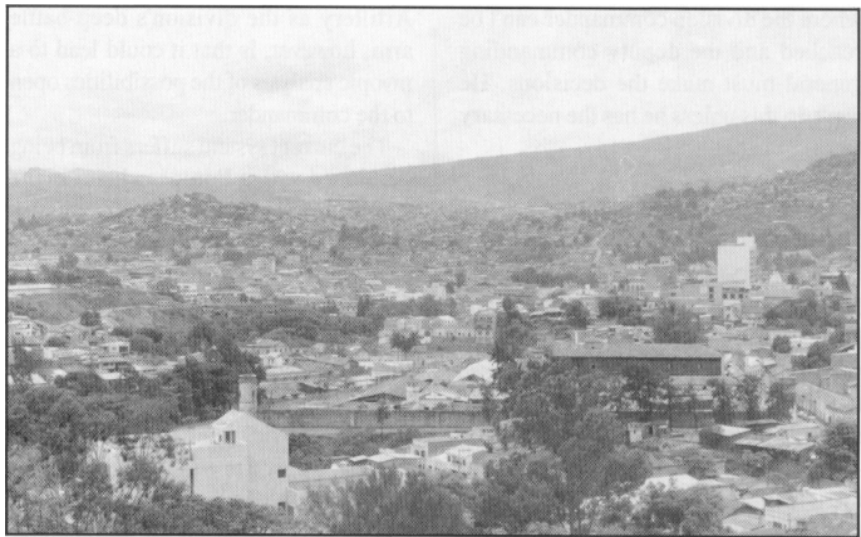
In cooperation with the US, the Honduran government has helped to deter the expansion of regional strife to Honduran territories by increasing the size, capabilities and sophistication of the Honduran Armed Forces. In addition, the Hondurans have allowed some limited forward-basing for US troops supporting combined exercises.

A significant infusion of Military Assistance Program (MAP) funds made these measures possible during the mid-80s; however, these funds have been reduced from more than \$80 million in 1986 to less than \$20 million in 1990. This decrease in funding could be perceived as a lessening of US support for Honduras at a critical time in the Central American peace process.

To counter that perception, the exchange program is a relatively low-cost opportunity for the US to maintain professional contacts and demonstrate support for the Honduran military while providing US participants an insight into the problems of training and operating



FATC's CPT Jon Bell (left) checks out Honduran fire direction procedures.



Tegucigalpa, Honduras' capital and the home of the General Staff Headquarters and the Honduran Military Academy.

in an austere environment. While the primary focus mandated by TRADOC was on initial entry training and leader development, the Fort Sill team also saw the opportunity to explore issues related to employing fire support in LIC.

In February and June of 1990, teams of officers from the FATC visited Honduras with the help of the US Military Group in Tegucigalpa. During the initial visit, they contacted the commanders of the National Training Center (Centro de Adiestramiento Militar del Ejercito, or CAME) and the Honduran FA School, which is part of the 1st Honduran FA Battalion. The second exchange, which also included a visit to the Honduran Military Academy, occurred in June of 1990. In September, a delegation of Honduran officers and NCOs visited Fort Sill to see firsthand some of the facilities and techniques described by their US counterparts. While many topics of general interest surfaced during the visits, the balance of this article concentrates on those relating to fire support.

Honduran FA Organization and Training

As a result of the buildup of the 1980s, the Honduran FA expanded to a total of four battalions, two of which are armed with heavy mortars (120-mm and 160-mm). The Hondurans had planned to form an FA Brigade Headquarters, signalling an attempt to adopt a more centralized fire support system than had been the case, perhaps responding to the

US doctrinal imperative to mass fires. This plan was abandoned due to military budget cuts after the Sandinistas were removed from power in Nicaragua in 1989; the perception now is that a conventional attack offering ripe targets for massed fires isn't likely.

The 1st FA Battalion at Zambrano, approximately 50 miles northwest of Tegucigalpa, hosts the Honduran FA School. The School, which is extremely small by our standards, is responsible for all officer and NCO specialization courses in FA skills for cannon and heavy mortars; CAME conducts all light mortar instruction. Additionally, the School staff is responsible for doctrinal and combat developments in the fire support area.

While the limitations of the 1st Battalion and the Artillery School were evident, we were impressed with how much was being accomplished in so austere an environment. We tried to imagine a US commander having to deal with problems such as—

- **Practically No Resources.**

Operating budgets in the Honduran Army, lean to begin with, have been repeatedly halved as US MAP funding has been cut. Just feeding and clothing the soldiers can be a major challenge. In spite of ongoing force and budget reductions in the US Army, our operating challenges are minimal compared to those faced by armies in truly impoverished countries like Honduras.

- **Recruiting and Conducting Basic Training of the Unit.** Each Honduran commander recruits and trains about 150

new soldiers per year in an environment in which poverty and illiteracy are rampant and the desire to serve in the armed forces extremely rare. Most commanders must resort to a form of the "press gang" to meet their recruitment quotas, with obvious consequences to their relations with local civilians.

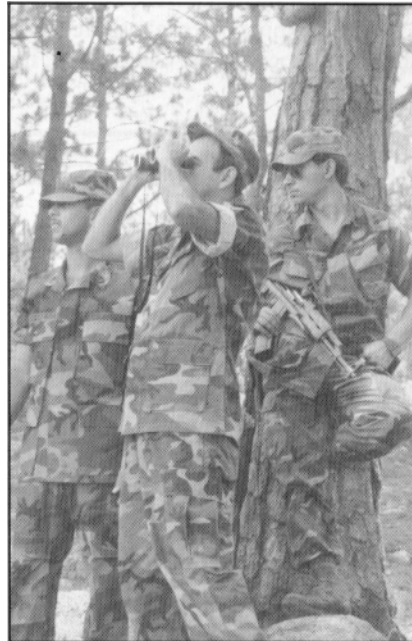
As the retention rate for new soldiers in the artillery is only 50 percent due to the general lack of education in the population, initial recruitment quotas are usually doubled. The unit then invests a sizeable amount of training time teaching their soldiers to read, and in the cases of the very brightest, to drive. Many have never seen, much less driven, a motor vehicle before entering the Army.

• **Training in an Austere Resource Environment.** In view of the Sandinista threat of the mid-80s, the 1st Battalion increased its firepower to two four-gun batteries of US M102 105-mm howitzers and one four-gun battery of M198 155-mm towed howitzers. While these are the most capable and modern weapons in the Honduran inventory, resource constraints limit most live fire of these systems to the annual cycle of officer and NCO courses at the FA School.

The School's scheduling staff has done an impressive job of layering the various courses over a small number of annual shoots to get the greatest training value from each round fired. The 120-mm and 160-mm mortars are extremely expensive to fire (more than \$300 and \$900 per round, respectively), as the Hondurans

must buy reliable munitions in small lots on the world market. Consequently, units largely rely on dry-fire exercises to maintain crew proficiency.

• **Maintaining Disparate Artillery Systems and Support Equipment.** As a US ally and aid recipient, Honduras can get equipment most advantageously from the US. However, the growing cost and sophistication of our equipment in general and the Hondurans' inherent reluctance to discard anything of possible



US and Honduran exchange participants observe rounds fall during a shoot.



A crew from the 1st Honduran FA Battalion puts rounds into the Zambrano impact area.

value has resulted in a mix of weapons and equipment from many different countries, little of which is compatible. The Honduran maintenance system relies on depot-level work for many tasks we accomplish at organizational- and intermediate-level shops. As our light artillery support equipment becomes more automated and integrated with our heavy systems, it frequently becomes less adaptable to the overall needs of allies like the Hondurans.

Ancillary Missions

Perhaps the greatest challenge to the Hondurans' ability to develop a potent fire support capability is the distraction of ancillary missions. In the event of a conventional attack on Honduras, the battalions will be assigned to infantry brigades to provide fire support, according to a given general war plan. However, each Honduran FA battalion also has a specific light infantry mission for LIC situations.

For instance, in a counterinsurgency scenario, a given FA battalion would have a sector of responsibility and task organize to conduct maneuver combat, area security, psychological operations (PSYOP) and humanitarian/civic action (HCA) operations. While this is a doctrinal anathema to our artillery, a similar mission was, in fact, assigned a "reinforced" direct support battalion of the 7th Infantry Division Artillery in Panama during Operation Just Cause. (See "Bayonet Artillery in Operation Just Cause," Colonel J. E. DeFrancisco, June 1990.) Most Honduran FA battalions live with these missions every day in peacetime, along with the requirement to do most of their own engineering and a substantial amount of subsistence farming to augment their ration system.

Contact Points

Exchange participants discussed two SOUTHCOM-sponsored programs that have helped both Hondurans and US training a great deal. Joint Chiefs of Staff (JCS)-sponsored joint and combined exercises and service-sponsored deployments for training (DFTs) have frequently provided ammunition, fuel, rations and expertise that wouldn't be available otherwise to Honduran forces for training.

For example, in 1989, a unit of the Arkansas National Guard deployed and ran a live-fire exercise with the 1st Honduran FA Battalion. The exercise gave the US participants an unparalleled opportunity to practice deployment, sustainment and interoperability techniques in a classic LIC environment. The Honduran participants not only realized additional live-fire and interoperability opportunities, but also saw how to reinforce the axles of their M102 howitzers to improve their durability when towed over long distances. Since the Hondurans' air

transport resources are extremely limited, this proved to be a significant contribution to their capabilities.

Subsequent exchanges will continue to address a wide spectrum of professional issues, but the exchange program offers the fire support community an important opportunity. Before the eruption of the Gulf crisis, a healthy debate was flourishing on the role of fire support in various LIC situations. Clearly, that interest in and the debate over LIC issues must continue if our Army is to be prepared for ongoing LIC challenges.

With declining defense resources and

the shift in focus to the Gulf region, the exchange program offers an inexpensive and effective mechanism to examine LIC issues firsthand while complementing the nation-building strategy of SOUTHCOM. As fire supporters, we should encourage a continuing exchange of ideas on the most effective employment of our capabilities in the LIC environment.

LTC Glenn R. Weidner, FA
Cdr, 2-80 FA, FATC
Fort Sill, OK

REDLEG NEWS

ITEMS OF GENERAL INTEREST

Senior Officer Logistics Management Course (SOLMC)

SOLMC is a one-week course to update battalion and brigade commanders and their primary staffs in the logistics arena. The course encompasses maintenance, supply and transportation procedures, as well as hands-on experience with vehicles, weapons, ammunition, medical, communications, quartermaster and nuclear, biological and chemical (NBC) equipment. The course is open to majors or above in the Active and Reserve Component Army, US Marine Corps, allied nations and Department of Defense civilians, GS-11 or above.

FY 91	FY 92	
28 Apr-3 May	20-25 Oct	5-10 Apr
19-24 May	5-10 Jan	26 Apr-1 May
9-14 Jun	26-31 Jan	10-15 May
18-23 Aug	8-13 Mar	31 May-5 Jun
15-20 Sep	29 Mar-3 Apr	20-25 Sep

SOLMC Class Schedule

The course is conducted 10 times each FY at Fort Knox, Kentucky. Class quotas may be obtained through normal Training and Doctrine Command (TRADOC) channels. For more information, call Captain Hammerle at AUTOVON

464-7133/3411 or commercial (502) 624-7133/3411.

COL James R. Joy, AR
Dir, Maintenance Dept
US Armor School

PERSCOM Field Artillery Enlisted Branch Update

Reclassification into MOS 13M/13P

The Field Artillery Branch at the Total Army Personnel Command (PERSCOM) is looking for soldiers to reclassify into MOS 13M, Multiple Launch Rocket System (MLRS) Crewman, and 13P, MLRS/Lance Fire Direction Specialist. With the ongoing fielding of the MLRS in both the continental US (CONUS) and outside the continental US (OCOUS), 13M and 13P are growing MOSs that are quickly becoming understrength. Because the MOSs are growing, the potential for advancement is as good as or better than more balanced MOSs.



The MLRS is one of the Army's newest and most modern weapons system that's ideal for use in areas saturated with targets. It uses the latest technology in modern warfare and is currently being upgraded with a new family of munitions.

Those soldiers who feel stagnated in their present MOSs with no foreseeable chance of promotion may want to consider reclassifying into MOS 13M or 13P. The Field Artillery Branch is advising Redlegs holding MOS 13N, Lance Missile Crewman, who are sergeants on the staff sergeant promotion list and staff sergeants to request reclassification to MOS 13M or 13P.

Although there are no reenlistment "IN" calls for MOS 13M and 13P, requests for reclassification will be considered and approved on a case-by-case basis. For further information, contact Sergeant First Class Wallace Lookingland at AUTOVON 221-0304 or commercial (703) 325-0304.

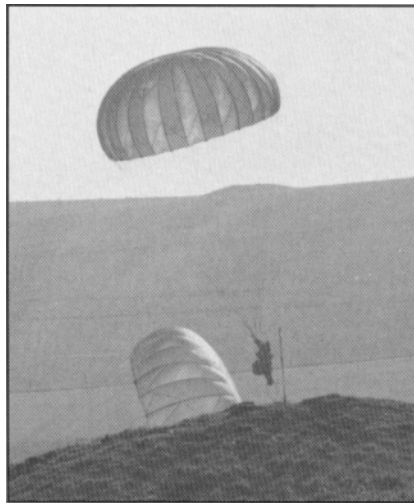
MFOM Course

As the Professional Development NCO for the military occupational specialty (MOS) 13M, Multiple Launch Rocket System (MLRS) Crewman, at Field Artillery Enlisted Branch, I receive numerous questions on the MLRS Family of Munitions (MFOM) Course.

The MFOM Course is taught at the Field Artillery School, Fort Sill, Oklahoma, and is one week and three days. The prerequisites for this course are that you be 13M qualified and Version 4 (software) trained. If you've attended the 13M Cadre Course, you're fully qualified to attend the MFOM Course. Course curriculum consists of Version 6 (software) changes and associated hardware changes to the MLRS launcher.

Until recently, the only soldiers authorized to attend this course are those deploying with the initial fielding of the MLRS Army tactical missile system (Army TACMS) units. Selected other soldiers have attended the course because of the need to train cadre to test the Army TACMS at White Sands Missile Range, New Mexico. PERSCOM will be selecting soldiers to attend this course en route to overseas locations.

For further information, call Master Sergeant Wayne Hashimoto at AUTOVON 221-0304 or commercial (703) 325-0304.



FA Airborne NCOs Needed

Enlisted Field Artillery Branch is looking for staff sergeants and sergeants first class in military occupational specialty (MOS) 13C, Tactical Fire Direction Specialist, and 13F, Fire Support Specialist, to volunteer for airborne training.

A recent increase in authorization has created a shortage of airborne NCOs in these MOSs. Soldiers who are interested should act quickly and apply for training by submitting DA Form 4187 Request for Personnel Action. Refer to Procedure 3-19, *DA Pam 600-8 Management and Administrative Procedures* or Chapter 6, AR 614-200 Selection of Enlisted Soldiers for Training and Assignment for detailed information on the application procedures.

Due to permanent change of station (PCS) constraints, selection priority goes to soldiers in the continental US (CONUS) who have two or more years on station and haven't received assignment instructions and soldiers outside the continental US (OCONUS) who are within 10 months of their date of expected return from overseas (DEROS).

If selected, individuals will have three weeks of training at Fort Benning, Georgia, and upon completion, be awarded the Skill Qualification Identifier (SQI) "P" with a follow-on assignment to an airborne unit. Additionally, these soldiers will incur an obligation to serve at least one year in an airborne position unless they're physically unable to perform airborne duty.

Soldiers wanting additional information about application procedures

should contact their personnel service center (PSC). Questions concerning airborne assignment opportunities can be directed to the Field Artillery Branch at AUTOVON 221-0304 or commercial (703) 325-0304.

Nuclear Cannon Assembly Course Security Clearance

Redlegs planning to attend the Nuclear Cannon Assembly Course (Additional Skill Identifier J4) at Fort Sill, Oklahoma, must have a Secret security clearance before arriving. They must have a Certificate of Clearance and (or) Security Determination (DA Form 873) as proof of a final Secret clearance. On a case-by-case basis, soldiers with orders indicating a Secret clearance may be accepted into the course, pending verification. If the soldier has had a break in service of 12 months or longer, then his or her previous security investigation is no longer valid. Soldiers should check with the local security manager to confirm his or her current security clearance.

Each month, valuable TDY funds are wasted when soldiers report to Fort Sill without the proper documentation as proof of their security clearance. Approximately 50 percent of all soldiers reporting to the course fail to have the proper security documents. These soldiers are returned to their units, diverted or sent on to their final destination without having the nuclear cannon assembly training, wasting a valuable training seat.

The solution to this problem starts at the unit level. Personnel service centers (PSCs) and unit commanders can stop this waste by—

1. Promptly submitting clearance requests after receiving assignment instructions requiring such clearance.

2. Reporting soldiers not qualified early in accordance with AR 50-5 Nuclear and Chemical Weapons and Material/Nuclear Surety.

3. Verifying the soldier has proof of security clearance before his or her departure.

Through better management of our resources, we can maintain our state of readiness in spite of budgetary cutbacks. If soldiers have questions, call Sergeant First Class Melquiades DeLaConcepcion at AUTOVON 221-0304 or commercial (703) 325-0304.